



The Wax and Wane of the Authorial Stance in Applied Linguistics Articles over the Course of Two Decades

Esmaeel Ali Salimi¹ , Ali Marami Hajikandi^{2*} 

¹ Associate Professor of Applied Linguistics, Department of English Language and Literature, Faculty of Persian Literature and Foreign Languages, Allameh Tabataba'i University, Tehran, Iran

² PhD in Applied Linguistics, Department of English Language and Literature, Faculty of Persian Literature and Foreign Languages, Allameh Tabataba'i University, Tehran, Iran

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Abstract: Stance has been examined extensively in the past few decades. However, the majority of the studies have been synchronic, with the few exceptions being snapshot diachronic studies without trend-related inferential statistics. This study adopted a trend-related inferential statistical measure and a more continuous diachronic dataset to examine the changes in using stance in the research articles of English applied linguistics from 2000 to 2020. To this end, 416 articles were randomly selected from 10 applied linguistics journals indexed in the first quartile of Scopus and probed using LancsBox for normalized frequency of [Hill a''' \(2005b\)](#) list of stance markers. Results were then analyzed for trends using the Jonckheere-Terpstra test. The results showed significant decreases for the overall stance markers ($J=37168$, $z=-2.85$, $d=-.28$, $p=.004$), hedges ($J=37014$, $z=-2.96$, $d=-.293$, $p=0.003$), boosters ($J=36298$, $z=-3.47$, $d=-.345$, $p=.001$), and attitude markers ($J=36647$, $z=-3.22$, $d=-.32$, $p=0.001$), while self-mention markers were found to have experienced a slight, non-significant increase ($J=42527.5$, $z=.94$, $d=.096$, $p=0.349$). The functional analysis of the selected excerpts showed that the quantitative decrease in the use of stance markers has been compensated for, with an increase in the modification range and strength of the used stance markers as the two ways we could discover. After discussing the findings, the paper ends with some suggestions for further research.

Keywords: Stance, Corpus Analysis, Interaction Theory, Applied Linguistics, Metadiscourse.

* Corresponding Author.

Authors' Email Address:

¹ Esmaeel Ali Salimi (easalimi@atu.ac.ir), ² Marami Hajikandi Ali (ah_marami@atu.ac.ir)



Introduction

When presenting their findings, the authors of research articles not only are required to have the robustness of research methods, but they also need to present their findings in a way that is relatable to the readers. This feeling of shared understanding might stem from various sources (e.g., a shared discipline, shared cultural backgrounds, etc.), but it is mainly represented via linguistic terms. These linguistic terms have been used to form the interaction model ([Hyland, 2005a](#); [Hyland & Jiang, 2017](#)). As a result, this study aims to explore the relationship between stance markers and the interaction model (Hyland & Zou, 2021, p. 1). Crosthwaite and Jiang (2017, p. 94) assert the existence of a catch-all yet elusive concept, referring to the ways that writers project themselves into their texts to offer authorial views toward the content of their research.

As will be elucidated in the Literature Review section below, research on stance has tackled various aspects of this phenomenon such as the relationship between stance and native/non-native users of English (e.g., [Ädel, 2022](#); [Can & Cangir, 2019](#); [Chen, 2020](#)) and disciplinary variations in the use of stance markers (e.g., [Ädel, 2022](#); [Hyland & Zou, 2021](#)). Notwithstanding the relationships these articles examine, the majority of studies on stance have been synchronic research projects, and diachronic studies have been a rarity. Although the synchronic studies are worthwhile in shedding light on various aspects of this phenomenon, there might have been changes in the academic English language due to various reasons (including the globalization of English, the publication of various works by both native and non-native users of English, and the disciplinary shifts in the jargon used in research articles, among others). These can explicate the diachronic trends that have run through this arena so far.

Aside from the highly limited number of diachronic studies of stance, a closer look at the content of these few studies shows that these few diachronic studies have their drawbacks. For instance, [Li \(2021\)](#) and [Gillaerts and Van de Velde \(2010\)](#) focus on abstracts, and as the latter posit, the metadiscourse use patterns in abstract and whole-body articles seem to be different. Therefore, we used whole-body articles to have a more comprehensive view of the metadiscourse pattern changes in articles (rather than limiting the data and the ensuing patterns to article sections). A second shortcoming in the literature was addressing specific components of stance (e.g., [Li, 2021](#); [Poole et al., 2019](#)). While [Poole et al. \(2019\)](#) focused on stance adverbs, [Li \(2021\)](#) tackled the changes in self-mention markers. To overcome this problem, we took the whole list of stance markers offered by [Hyland \(2005b\)](#), which involves different subsets (to be explained in the Methodology section) and various word functions. The third

shortcoming in the literature arises from not using inferential statistics for the quantitative analysis of the data (Hyland & Jiang, 2016, 2017, 2018). As Dörnyei and Csizér (2012) suggest, while descriptive data analysis offers some insights into datasets, it does not offer a scope wider than the sample. They maintain that in order to generalize the findings of the study to the wider population, one needs to run inferential statistics. Therefore, we used inferential statistics in this study to overcome that shortcoming.

These methodological drawbacks in the literature led us to conduct a research project to identify the probable changes in the use of stance markers in English applied linguistic articles over the past two decades with an improved design. In our opinion, the examination of a more continuous line of data could bring us closer to the essence of a “ccccr”s..... . Nonetheless, as this would increase the corpus content to a great extent, we limited our focus to applied linguistics to meet the feasibility concerns. Therefore, this study was an effort to replicate the previous diachronic studies on stance to remove the methodological problems of the previous studies as much as possible through an improved design.

Review of the Literature

In line with the finding of Pearson and Abdollahzadeh (2023) that over 80 percent of studies on metadiscourse are cross-sectional in nature, our examination of the previous research on stance shows that the studies in this arena have been mainly synchronic, with few diachronic studies conducted so far. In the following lines, these two categories are delineated.

Synchronic Studies

A great deal of research on stance has focused upon differences in texts written by native and non-native authors as well as authors coming from different cultures and nations. Some of these studies have shown that some nonnative writers – especially those from northern Europe (e.g., Ädel, 2022; Dahl, 2004; Shaw, 2003) – have more use of authorial voice and stance markers in their L2 works compared to native English authors, while some other nonnative authors – usually from southern Europe (Dafouz-Milne, 2008; Marín Arrese, 2015; Molino, 2010), eastern Europe (Akbas, 2014; Can & Cangir, 2019; Candarli et al., 2015; Chamonikolasova, 2005; Cmejrkova, 2007; Dontcheva-Navratilova, 2013; Vassileva, 1998), and east Asia (Chen, 2020; Kim & Lim, 2013) – use authorial voice and stance markers less frequently.

The second research line focuses on the variation in using stance markers in the texts of different disciplines. It has been found that in addition to the existence of differences in using metadiscourse markers between hard and soft sciences ([Abdi, 2002](#); [Biber, 2006b](#); [Bondi, 2012](#); [Harwood, 2005](#); [Hyland, 2002, 2003, 2004](#); [Kim & Crosthwaite, 2019](#); [Mur-Duenas, 2007](#)), there also exist differences in different fields of study in this regard ([Ädel, 2022](#); [Bruce, 2010](#); [Jiang & Hyland, 2015](#); [Khedri et al., 2013](#); [Lancaster, 2016](#); [McGrath, 2016](#); [Sanderson, 2008](#)).

The differences found among academic works of different genres ([Biber, 2006a](#); [El-Dakhs, 2018](#); [Hyland & Tse, 2005](#); [Kawase, 2015](#); [Zhang, 2016, 2022](#); [Zou & Hyland, 2019](#)) can be justified in two ways. First, the power gap between the typical writer of each genre (e.g., experts as writers of articles vs. students as writers of theses) and the disciplinary gatekeepers ([Koutsantoni, 2006](#)) leads to different rates of stance markers. Second, scientists might adopt different stances and engagement means depending on the generality or particularity of the audience for which they write ([Zou & Hyland, 2019](#)).

Finally, the examination of the studies on the difference between novice and expert writers in using stance markers showed that novice writers either overuse ([Gülru Yüksel & Kavanoz, 2018](#)) or underuse ([Aull et al., 2017](#); [Aull & Lancaster, 2014](#); [İsgg-Taş,; Lancaster, 2016](#)) stance markers compared to the level used by and expected from professional authors because of their lack of general English proficiency or lack of awareness about the need to observe the discipline-specific language ([Bahrami et al., 2018](#)). This has practical consequences for them, one of them being the rejection of their articles by the journals ([Bahrami et al., 2018](#)).

Diachronic Studies

Aside from the mainstream synchronic studies on stance, there have been few studies that have adopted a diachronic approach to this phenomenon. Our examination of literature led to the identification of some diachronic studies in this regard.

[Gillaerts and Van de Velde \(2010\)](#) examined 72 abstracts in a multi-snapshot diachronic study and found a decrease in the use of boosters and attitude markers in research article abstracts and an increase in the use of hedges in the past three decades. This is attributed to the acknowledging stances other than that of the author becomes more urgent. This can put a constraint on the use of boosters and attitude markers, two kinds of interactional elements that

([Gillaerts & Van de Velde, 2010, p. 137](#)). Gillaerts and Van de

either via cutting down the number of hedges, boosters, and attitude markers altogether or by modifying the effect of higher frequencies of boosters and attitude markers with the use of more hedges. Another interesting point in their study was that the frequency of stance markers has been different in the abstracts and the whole articles. That is, an abstract is not merely a reflection of the whole-article stance pattern.

[Hyland and Jiang \(2016\)](#) examined stance markers in academic articles of four disciplines (namely applied linguistics, sociology, electrical engineering, and biology) in the years 1965, 1985, and 2015, and found that the raw frequency of stance markers has substantially increased in academic articles over the five decades. However, when they controlled for the article length variable, they figured out that the overall stance marker use in academic articles has had a small, yet significant decrease. They found that the normalized frequencies of stance markers of applied linguistics and sociology (two examples of soft sciences) have decreased, while the normalized frequencies of stance markers have increased in electrical engineering and biology (two instances of hard sciences). A glance at their data related to applied linguistics shows that all four components of stance have witnessed a decrease. Their results suggest that authors use more cautious stances, directing readers to the persuasive strength of data or methodological evidence, and convey more cautious stances, directing readers to the persuasive strength of data or methodological evidence. This is congruent with what [Atkinson \(1999\)](#) calls a move away from author-centered to object-centered, abstract texts.

[Hyland and Jiang \(2017\)](#) examined the stance expressed by the authors using *that*-clauses in the years 1965, 1985, and 2015. They found a decrease when the normalized frequency of the cases was taken into account. In order to compensate for the inherently longer *that*-clauses, they say, authors could rely on the more concise modal items. [Hyland and Jiang \(2018\)](#) found that the overall interactional metadiscourse markers in research articles have decreased from 1965 through 1985 to 2015. More specifically, their results showed that hedges and attitude markers have been decreasing, self-mention markers have had an increasing trend, and boosters have been fluctuating. As they suggest, “the frequency of hedges and attitude markers has been decreasing, self-mention markers have had an increasing trend, and boosters have been fluctuating. As they suggest, ‘the frequency of hedges and attitude markers has been decreasing, self-mention markers have had an increasing trend, and boosters have been fluctuating.’” ([Hyland & Jiang, 2018, p. 28](#)).

[Poole et al. \(2019\)](#) found that over five decades, the frequency of hedges and boosters decreased and increased, respectively, in the biochemical research articles, thus showing a

in epistemic stance features becomes less overt as a discipline adopts a shared understanding (Poole et al., 2019, p. 9). That is, when a new phenomenon comes into the spotlight in a discipline and there is limited knowledge about it in the respective community, researchers lean toward more hedging and modality as they are uncertain about their grasp of the phenomenon. Over time, as new, more solid findings are made about that phenomenon and uncertainty decreases, researchers tend to use stronger claims in their articles.

Examining applied linguistics article abstracts over the past 3 decades, Li (2021) found fluctuations in the use of self-mention markers, with these markers first moving up from the 1990s to the 2000s and then going back to the same level as the 1990s in the 2010s. The author suggests that this downtrend might have been due to the movement of applied linguistics abstracts toward objectivity and factuality that is associated with general research. Li's finding is in contrast with that of Atkinson (1992), who studied self-mention markers over a period spanning over 3 decades while the latter focused on two centuries. The changes in writing can be easily viewed as more prone to stylistic changes in larger temporal frameworks than shorter ones.

Biber (2004) made a historical analysis of the use of stance markers in various registers. He concluded that the frequency of modal verbs has decreased in the past four centuries in general, but the use of semi-modals, stance adverbials, and stance complement clause constructions has witnessed an increase. Nonetheless, a look at his findings reveals that stance marker frequency fluctuates over time in various registers. For example, the results of his study showed that the use of modal verbs between 1900 and 1949 increased in newspapers but decreased in drama, yet both decreased in the period 1950 to 2000. Another interesting finding is that some registers historically have more stance markers than some other registers. For example, drama texts have always had more modal verbs than newspapers.

As this literature review, there have been few articles on the diachronic change of stance markers, especially in the research article arena. The general trend in those articles has been that the use of stance markers has decreased over the years when normalized frequency is taken into account. However, some of these studies have used either descriptive statistics or inferential statistics not suitable for finding diachronic trends (Hyland & Jiang, 2016, 2017, 2018). Some others have adopted multi-snapshot diachronic datasets rather than a more continuous yearly design (Gillaerts and Van de Velde, 2010). Still, another group of articles focused on just subsets of stance markers (Li, 2021; Poole et al., 2019). Finally, the study by Biber (2004) covered a very large time span, which makes the results different from our shorter

yet more continuous dataset. Thus, in order to avoid these problems, the study at hand set out to examine the stance as defined by [Biber et al. \(1999\)](#) framework using continuous diachronic data, inferential statistics suitable for finding diachronic trends, and a more continuous data type (i.e., yearly data). To this end, the following research question was proposed.

- To what extent has the use of stance metadiscourse markers changed in English applied linguistics RAs from 2000 to 2020?

Methodology

The present study aimed to reveal the authorial stance in the research articles of English applied linguistics in the first two decades of the third millennium. Accordingly, this part of the article provides a sketch of the elements included and the steps taken in this research project, including data collection and corpus construction procedure, corpus analysis software, and data analysis procedure.

Corpus Construction

[Biber et al. \(1999\)](#) assert that small corpora (which usually contain 50 thousand to 2 million words) need to be balanced, a balanced corpus “represent[ing] different registers by appropriately balanced amounts of text, while covering the widest possible range of variation” (p. 10). To detect and compare the stance representation in applied linguistics articles during the past two decades, we needed to keep the balance in the selection of representative articles for the corpus. To this end, we randomly selected two research articles in two different issues from among the works published every year by 10 journals that are ranked as Q1 by Scopus in the year 2020. When selecting articles, care was taken not to choose any publication type (e.g., book reviews, review articles, editorials) other than research articles for inclusion in the corpus. The journals from which the articles were downloaded were Applied Psycholinguistics, Studies in Second Language Acquisition, Language and Education, Language Learning Journal, Language Testing, Language Teaching Research, English for Specific Purposes, Journal of English for Academic Purposes, Modern Language Journal, and TESOL Quarterly. Then, the continuation of this selection for 21 years of publication led to the collection of 42 articles for each journal. As there were 10 journals included in the study, an overall number of 420 articles would be included in the study. Nonetheless, as the EAP journal started to be published in 2002, the overall number of collected articles was 416.

After the compilation of the files, they were turned into Microsoft Word files. Before feeding the files into the corpus analysis software, we first trimmed the files, i.e., removed the parts interfering with the purpose of the study. The parts deleted included title, abstract, keywords, headings and subheadings, footnotes, tables and figures, excerpts, extracts, examples, quotations, endnotes, acknowledgments, references, and appendices. As a result of this process, files became shorter in terms of word count, but their representativeness of the authors' writing styles was maintained. The tables, figures, and references were removed during the trimming process.

Table 1. Descriptive Statistics of the Trimmed Articles for Each Year

Publication year	No. of articles	Total word count	Average word count per article	Standard deviation	Minimum word count of the articles	Maximum word count of the articles
2000	18	100129	5563	2673	2081	12754
2001	18	112043	6225	1759	3094	9961
2002	20	121836	6092	2342	2251	11528
2003	20	105421	5271	1746	1773	9429
2004	20	118832	5942	1989	3211	11185
2005	20	107913	5396	1789	2456	8095
2006	20	128130	6407	2071	1992	10706
2007	20	127870	6394	2125	3925	13179
2008	20	119497	5974	1521	2967	8267
2009	20	125189	6259	1441	3000	8865
2010	20	131714	6586	2543	2112	15218
2011	20	129145	6457	1810	2885	9260
2012	20	136723	6836	1801	4830	10565
2013	20	131300	6565	1622	3499	11693
2014	20	133300	6665	1805	3257	9640
2015	20	128777	6439	1659	3972	11066
2016	20	130641	6532	2228	3465	11870
2017	20	140345	7017	2026	4406	11255
2018	20	138023	6901	1325	4291	9664
2019	20	124585	6229	1302	3734	9110
2020	20	130816	6541	1519	3863	8980
Overall	416	2622229	6300	1862	1773	15218

Corpus Analysis Tool

The software that was used in this study was LancxBox ([Brezina et al., 2018](#)), the free corpus analysis toolbox provided by Lancaster University. The toolbox has been used in some articles published in outstanding journals, including the research project conducted by [Can and Cangir \(2019\)](#). Moreover, functional analyses were made using collocates of the selected words (i.e., words with over 500 tokens and a significance level of 10 percent). To this end, random examples containing the selected words are quoted from the texts, and the important linguistic points in them are elaborated.

Conceptual framework

There are different frameworks for the analysis of stance and voice in the literature (e.g., [Biber, 2004](#), [Hyland, 2005b](#); [Martin & White, 2005](#)). [Martin & White's \(2005\)](#) appraisal system is essentially used in qualitative studies, which was out of the scope of this study. Moreover, our examination of the literature showed that [Biber's \(2004\)](#) framework seems to be more popular in quantitative studies than that of [Biber \(2004\)](#). In fact, [Pearson and Abdollahzadeh \(2023\)](#) studies. Therefore, we adopted [Biber's \(2004\)](#) framework.

In order to analyze the authorial stance representation in applied linguistics articles published by various publishers, we relied on [Biber's \(2004\)](#) list of metadiscourse markers related to this phenomenon. The wordlist represents the four-part configuration of stance populated by various works Hyland has authored or coauthored (e.g., [Hyland 2005a, 2005b, 2008, 2012b](#); [Hyland & Jiang, 2016, 2017, 2018](#); [Hyland & Zou, 2021](#)).

The four parts of the framework include hedges, boosters, attitude markers, and self-mention markers. Hedges (e.g., may, could, and perhaps) are the words used by authors to mitigate the strength of their claims, while boosters (e.g., clearly, must, and of course) function as means to indicate the certainty of the author about his/her claims. From a functional viewpoint, the two are suggested to reveal evidentiality, that is, how the writer tries to cater to the reliability of the data and the effect it might have on the reader ([Hyland 2005a](#); [Hyland & Jiang, 2016](#)). The third category regards attitude markers (made of various adverbs, verbs, adjectives, and complement clauses such as unfortunately, worry, appropriate, and we hope that), which reveal the affective stance of the writers to the propositions they make in their works. Diverging from the epistemic nature of the first two categories, these provide a second, affect-oriented layer to the framework. The last category proposed by Hyland for the stance

markers concerns self-mention markers (involving first-person pronouns and possessive adjectives such as *I* and *my*). The items that exist in this category add shades of interpersonal, affective, and evaluative, and are essential for the work (Hyland 2005a; Hyland & Jiang, 2016).

along with their argument: focusing their attention, anticipating their objections and including them as discourse markers (Hyland, 2012a, p. 136). As the focus of this study is only authorial stance, engagement elements are not elucidated here and are not taken into account in the data analysis section as well.

Data Analysis

After collecting the articles, trimming them, and constructing the corpus, the trimmed articles were fed into the LancsBox 4.5 corpus analysis software. A glance at Table 1 shows that the articles have had various lengths, and normalized frequency would be a better choice than raw frequency, as it removes the effect of article length on the frequency of stance markers (see Hyland & Jiang, 2018; Molino, 2010). Therefore, using the Whelk tool, the normalized frequencies (per 10k) were extracted for a list of stance markers proposed by Hyland (2005b). This list entails 73 hedges, 64 boosters, 67 attitude markers, and 10 self-mention markers.

The dubious instances of metadiscourse markers (words such as *I*, *may*, and *us*) were checked using the Text tool built into LancsBox 4.5 and the related article files to see if the occurrences were related to stance or not. The instances of search items that were found to be incongruent with the concept of stance were excluded from the final counts (e.g., *us* could be a personal pronoun and the name of a country, and *I* could be a first-person pronoun or a Roman number). Nonetheless, this manual checking mostly targeted self-mention markers. Although the majority of studies in this arena seem to rely on manual checking to corroborate the initially obtained concordances (e.g., Hyland & Jiang, 2016), there are studies that have merely relied on computer-based results (e.g., Poole et al., 2019, Yoon, 2017). Although the former method seems to be more rigorous and there might be tokens in our corpus that do not function as stance markers (i.e., false positives), the similarity of the findings of the first group of studies with the results obtained by Poole et al. (2019) and the findings of our study suggest that there might not be significant differences in general trends revealed by purely machine-based analyses and machine + manual checking of the data. In fact, our results (in 21 years and in the year 2015) come very close to the normalized frequencies obtained by Hyland and Jiang (2016) for the year 2015: hedges (121.18 vs. 108.32 vs 128.6), boosters (64.99 vs. 57.36 vs 67.0),

attitude markers (31.73 vs 32.18 vs. 31.2), and self-mention markers (45.14 vs. 49.85 vs. 68.4), despite the fact that we trimmed the articles and they manually checked the stance markers in context. Nonetheless, as we are not statistically sure about the strength of the difference between the two methods and the exact number of probable false positives in our data, the results of this study should be taken with a grain of salt.

This way, the final report of the tokens of the stance markers was achieved. Then, SPSS 26 was used to run the normality test before determining the appropriate statistical measure. Table 2 presents the normality test results.

Table 2. Tests of Normality for Stance Markers

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Overall	0.08	416	.000	0.83	416	.000
Attitude markers	0.10	416	.000	0.90	416	.000
Boosters	0.08	416	.000	0.96	416	.000
Self-mention	0.23	416	.000	0.62	416	.000
Hedges	0.06	416	.000	0.96	416	.000

As Table 2 indicates, the non-normality scores for the overall stance markers, attitude markers, boosters, self-mention markers, and hedges were all significant. Therefore, a non-parametric measure would be appropriate to use for our data. Based on the results of the normality test and our research question that focused on the trend of using stance markers over time among multiple groups, the Jonckheere-Terpstra trend test was adopted to find any possible trends in the frequency of stance markers from 2000 to 2020. As [Field \(2009, p. 568\)](#) suggests,

Tsss ssssss ssss fir an rreered aatter oo aaaaa aa ff grssss ''' re comparing. Essentially it does the same thing as the Kruskal-Wallis test (i.e. test for a difference between the medians of the groups) but it incorporates information about whether the order of the groups is meaningful. As such, you should use this sss eee eeeec rr ssss uuu're crrrrr rrr rr cccc e aaa fffff ffforeer of medians.

Then, as we wanted to see the diachronic fluctuations over 21 consecutive years, this test was the pertinent measure for our study. Although in our review of the literature on stance markers, we did not come across any article that has used this test, the test has enjoyed some

popularity in linguistics articles to find temporal patterns (e.g., [Graus & Coppen, 2015](#); [Treffers-Daller, 2015](#)).

Along with the overall count of stance markers, the subcategories of this variable (i.e., hedges, boosters, attitude markers, and self-mention) were also quantified and compared using this test. Along with the quantitative analysis of the data, a functional analysis of some selected excerpts from the corpus along with collocation analyses were also used to gain more insight and add depth to the quantitative findings. The results of these analyses are presented in the following section.

Results

To answer the research question of the study – i.e., to what extent has the use of the stance markers changed in English applied linguistics RAs from 2000 to 2020? – the normalized frequency of all stance markers was examined based on the publication year variable using the Jonckheere-Terpstra trend test. Results are provided in Table 3.

Table 3. Overall Stance Marker Trend from 2000 to 2020 Based on Jonckheere-Terpstra Test

Results	
Total N	416
Test statistic	37168.00
Standard error	1414.95
Standardized test statistic	-2.85
Asymptotic sig. (2-sided test)	.004
Coefficient d	-.282

Table 3 indicates that there has been a significant downtrend in the normalized frequency of stance markers over the past two decades in applied linguistics journals ($J=37168$, $z= -2.85$, $d= -.28$, $p= .004$). Therefore, we might assert that there has been a significant decrease in using stance markers in English applied linguistics RAs from 2000 to 2020.

Nonetheless, due to the different functions of the components of stance ([Hyland 2005b](#); [Hyland & Jiang, 2017](#); [Hyland & Zou, 2021](#)) and the mixed results obtained about them in previous studies (e.g., [Hyland & Jiang, 2018](#)), we further analyzed the trends in the four components of stance, namely hedges, boosters, attitude markers, and self-mention markers by the application of Jonckheere-Terpstra test to the normalized frequency of the stance components. Table 4 provides the quantitative results.

Table 4. Sccccc Csss ssssss s Trend from 2000 to 2020 Based on Jonckheere-Terpstra Test

	Results			
	Hedges	Boosters	Attitude markers	Self-mention
Number of levels in publication year	21	21	21	21
N	416	416	416	416
Observed J-T statistic	37014	36298	36647	42527.5
Mean J-T statistic	41202	41202	41202	41202
Std. deviation of J-T statistic	1414.95	1414.95	1414.95	1414.79
Std. J-T statistic	-2.960	-3.466	-3.219	.937
Asymp. Sig. (2-tailed)	.003	.001	.001	.349
Ceee'' d	-.293	-.345	-.32	.096

To further explore the trends in the use of stance markers, a functional analysis of the most common terms in the corpus (those with over 500 tokens in the corpus and a Jonckheere-Terpstra test result significant at the 90% level of confidence) was also made. The results are given in Table 5.

Table 5. Results of Term-by-Term Trend Analysis

Hedges		Boosters		Attitude markers		Self-mention marker	
Decreasing	Increasing	Decreasing	Increasing	Decreasing	Increasing	Decreasing	Increasing
rather	may	must	showed	even	-----	I	our
might	possible	certain		appropriate			
appear	indicated	clearly		expected			
appears	indicate	find		interesting			
perhaps		indeed					
quite		In fact					
almost		know					
claim		always					

As Table 4 demonstrates, there has been a significant reduction in the normalized frequency of hedges over the past two decades in applied linguistics articles ($J=37014$, $z= -2.96$, $d= -.293$, $p=0.003$). The results of term-by-term analysis of the hedging markers in Table 5 show that from among the great number of terms that have decreased significantly in the past two decades, the major ones are *quite*, *rather*, *almost*, *perhaps*, *might*, *appear*, *appears*, and *claim*:

[1] nnn-uniform DIF size was not substantial, whereas the uniform-DIF size was **rather** considerable. (Language Testing, 2001)

[2] In other words, mothers and children **appear** to establish a consistent style over multiple readings, with subtle shifts occurring within that style. (Applied Psycholinguistics, 2003)

On the other hand, the verbs *may*, *possible*, *indicate*, and *indicated* have increased to a considerable extent:

[3] Word searches or paraphrases, for example, lengthen responses but **may indicate** reduced lexical access. (Studies in Second Language Acquisition, 2010)

[4] **In general**, the two learner characteristics, phonological awareness and FL vocabulary, appeared to be better predictors of fast-mapping and deliberate word-learning performances in most cases than digit span. (Modern Language Journal, 2012)

A look at the foregoing top decreasing and increasing hedging terms suggests that there is a movement from weaker language to stronger language. For instance, words such as *appear*, *appears*, and *claim* seem to suggest weaker stances than stronger words such as *indicate* and *indicated* (with the latter ones being synonyms of the rather moderate boosters *show* and *showed*). Moreover, the decreasing quantifying adverbs such as *fairly* and *quite* (and in many cases, *rather*) often precede adjectives and so have a local modification range within the sentence, while the increasing generality adverbs such as *in general* usually have a much wider modification range within the sentence and modify larger chunks of language. That is to say, this top-ranking adverb might suggest that although the frequency of hedging words has been decreasing over time, the range of their effect in some cases increases and those fewer words modify larger chunks of language. Another noteworthy point is that in line with the general decrease in the frequency of hedges, the number of word types (not tokens) with a decreasing trend is somewhat higher than the increasing word types (with 8 words decreasing and 5 words increasing after the application of the foregoing criteria for the identification of top effective terms).

Table 4 also reveals that there has been a highly significant decrease in the frequency of boosters over the past two decades ($J=36298$, $z= -3.47$, $d= -.345$, $p=.001$) in applied linguistics articles. When examined in a term-by-term manner (Table 5), it is revealed that the terms *must*, *certain*, *clearly*, *indeed*, *in fact*, *always*, *find*, and *know* have had significant decreases:

[5] Even those teachers who are willing to change, however, **must** be given the support to do so. (Language Teaching Research, 2004)

[6] **In fact**, it was more reasonable to assume that at some time there would be a leveling-off point, after which rates and amount of change in behaviors would decrease.. (scciiii sssss sæs,))))

On the other hand, the verb *showed* has experienced considerable frequency increases in the corpus:

[7] The analysis **showed**))) eee sssss' eeeess of difficulty were not different from one another ($p = .984$). (Studies in Second Language Acquisition, 2016)

[8] The effect sizes further **showed** that the unplanned narratives were clearly longer when compared to the narratives produced in the unguided-planning ($d = 1.08$) and the guided-planning ($d = 0.84$) conditions. (Language Teaching Research, 2006)

The comparison of the boosters with decreasing and increasing trends clearly shows a decrease in the decisive tone adopted by the authors of articles in applied linguistics articles, with strong words such as *must*, *certain*, *in fact*, and *clearly* losing their track, and more moderate boosters such as *showed* finding momentum. It is interesting that the hedges *indicate* and *indicated* and the booster *showed* are increasing in the corpus. A look at their meaning shows both of them are moderate rather than extreme words. Another noteworthy point is that in line with the general decrease in the frequency of boosters, the number of types with a decreasing trend is much higher than the increasing types (with 8 words decreasing and only 1 word increasing after the application of the foregoing criteria for the identification of top effective terms).

In addition, as the content of Table 4 shows, there has been a significant drop in the normalized frequency of attitude markers over the past two decades ($J = 36647$, $z = -3.22$, $d = -.32$, $p = 0.001$). A deeper analysis of the attitude markers indicates that the frequency of terms such as *even*, *appropriate*, *interesting*, and *expected* has decreased sharply:

[9] **Even** if this were true, it would still be useful to be able to produce such letters. (English for Specific Purposes, 2000)

[10] There is sufficient evidence now available to show that it is not **appropriate** to treat recasts as an undifferentiated. (Studies in Second Language Acquisition, 2006)

Unlike other components of stance, the term-by-term analysis of attitude markers in the corpus did not show any significant increase based on the foregoing criteria.

As Table 5 shows, it is interesting that after setting our criteria for the extraction of top effective terms, no attitude marker term was found in the top increasing terms. Moreover, a glance at attitude markers with decreasing frequencies suggests that during the past two decades, the use of restrictive emphatic words (Hyland & Jiang, 2016) such as *even* has decreased. A collocation analysis of the word *even* showed that two out of three of its main collocates are *even though* and *even if*, clearly adding restrictions to larger chunks of language that follow them. Moreover, collocation analysis of the three other top decreasing hedging markers revealed the following structures: *appropriate+preposition+NP*, *interesting+infinitive*, and *expected+infinitive*. These again support the suggestion that the top decreasing attitude markers have had restrictive effects on much larger chunks when their collocates are taken into account. Thus, it can be claimed that the affect metafunction has been affected by both the decrease in the frequency of attitude markers and the resonating effect the top diminishing terms have had on the chunks of language following them.

Finally, Table 4 does not show any significant downtrend in the normalized frequency of self-mention markers over the past two decades ($J=42527.5$, $z= .94$, $d= .096$, $p=0.349$). Rather, a non-significant increase can be observed in this category. A more detailed analysis of results demonstrated that the frequency of the subject pronoun *I* has had a sharp decrease over the past 20 years in applied linguistics journals.

[11] As **I** was an insider in this research, as both tutor and researcher, this was epistemologically an important issue to confront. (Single-authored article, Language Learning Journal, 2007)

[12] In response, **I** suggested that we explore and discuss different classroom approaches than the ones she was using. (Single-authored article, TESOL Quarterly, 2018)

On the other hand, the frequency of the use of the possessive adjective *our* has had a sizable increase.

[13] However, **our** results do suggest a potential asymmetry. (multiple-author, Applied Psycholinguistics, 2015)

[14] However, in **our** small corpus, this strategy was realised with seven different verbs (graduate, complete, obtain, have, hold, to be and include), each with its own grammar pattern. (single author, English for Specific Purposes, 2007)

Putting together, it seems that concerning self-mention markers, the tendency to use plural possessive markers has been increasing, while the use of the first-person subjective pronoun *I* has been sharply diminishing. As Li (2021) suggests, the increased plural

pronouns/possessives can be a reflection of the increase in the number of the authors of research articles.

From the viewpoint of the functional framework offered by [Hyland \(2005b\)](#), the quantitative results showed that over the past two decades, there has been a tendency in applied linguistics articles to offer less evidentiality (hedges and boosters) and affect (attitude markers), though no significant downtrend is seen in authorial presence (self-mention markers). However, the textual analyses showed that in the hedges, the decreased frequency and the use of more moderate terms have weakened the hedging power of the articles, while the use of terms with functions that modify larger chunks of language has compensated for the decrease in frequency and strengths of hedging words. Concerning the boosters, the textual analysis showed that both the frequency and the strength of the words have been decreasing, thus the boosting function has been getting weaker both quantitatively and qualitatively. With regard to the attitude markers, it was found that the affect dimension has been negatively being affected by both the decreasing frequency and the fact that the top effective words have used to modify large chunks of language. Thus, except for the modification of larger chunks by some top hedging markers, the results showed that not only the frequency of stance markers has been decreasing, but also the quality of the stance-taking has also been getting weakened in applied linguistics articles in the past two decades.

Discussion

This study set out to examine the trends in using stance from 2000 to 2020 in the English applied linguistics research articles. In order to explore this issue, 416 articles were first trimmed, and the remaining texts were fed into LancxBox corpus analysis software. The obtained frequencies were then analyzed through the Jonckheere-Terpstra test using SPSS. Next, the quantitative findings were further analyzed through textual analysis of top effective stance markers and collocation analysis.

Results revealed that there has been a statistically significant downtrend in using stance markers in the applied linguistics field. This finding was true for the overall stance makers and three of its subcategories (i.e., hedges, boosters, and attitude markers), while self-mention markers were found to have had a slight, non-significant increase. The statistically significant decrease in the use of stance markers is a corroboration of what [Hyland and Jiang \(2016, 2018\)](#) have previously found based on descriptive statistics. The textual and collocation analyses

showed that overall, stance-taking has been further weakening due to the use of less extreme words and modification of larger chunks of language by these weaker terms.

With the significant decrease found in the frequency of hedges, boosters, and attitude markers, the results of this study confirm the move away from author-centered to object-centered texts ([Atkinson, 1999](#), [Li, 2021](#)), one which directs the reader to base their grasp of the articles on the more concrete methodological or data-driven facts rather than author-suggested interpretations ([Hyland & Jiang, 2016](#)).

Moreover, [Gillaerts and Van de Velde \(2010\)](#) suggest that the decreased authorial presence they have witnessed in academic article abstracts might be due to the expansion of the disciplinary community. This expansion urges authors to acknowledge stances other than the traditional ones, such as “a more area of research.” ([Hyland & Jiang, 2018, p. 28](#)). Previous studies on stance such as [Chen \(2020\)](#), [Ädel \(2022\)](#), [Can and Cangir \(2019\)](#), and [Candarli et al. \(2015\)](#) have revealed that native and non-native writers use stance markers with different quantities. This fact can be used to justify our findings on the declining rate of stance marker use in applied linguistics articles in the past two decades when coupled with journal metrics. For example, the top 20 countries in downloading the articles of the journal EAP in the previous 5 years are listed on the webpage of this journal ([Elsevier, 2022a](#)), where non-native countries have done more than 45 percent of the overall downloads of the content of this journal. In particular, Asian countries have had a share of over 40 percent of the overall downloads. Moreover, a glance at the authorship metrics of the journal English for Academic Purposes ([Elsevier, 2022b](#)) shows that, in the previous 5 years, more than 45 percent of the authors of this journal have come from non-native countries. In particular, 35 percent of the authors of the EAP journal have been from Asian countries. These figures might tentatively suggest that the changing mosaic of the authors and readers of academic journals, due to the globalization of English and the expansion of the disciplinary community, can be a source of change for stance-taking habits in academic journals.

Moreover, the disciplinary expansion mentioned by [Gillaerts and Van de Velde \(2010\)](#) might limit the authorial presence in two ways: mitigating the increased use of boosters and attitude markers by more frequent use of hedges, or cutting down the use of hedges, boosters, and attitude markers altogether. Our results side with the latter alternative, as the frequencies of all these three subsets of stance have witnessed significant decreases over the past two decades.

Our findings are also partly in line with those of [Hyland and Zou \(2021\)](#), who found that the academic writers of social sciences use fewer hedges and boosters as epistemic stance

markers compared to attitude markers and self-mention markers. The reason is said to be the lack of highly accepted research procedures in these fields, pushing people to the two latter camps. Our results, too, showed a sharp decrease in the frequency of hedges and boosters. However, when examined through a functional lens, our results revealed that despite the decreasing trend in using hedges and boosters, the authors use hedging terms that either have a larger modification range within a sentence (e.g., using a generality adverb that modifies the whole sentence rather than a quantifying adverb that only modifies an adjective) or convey moderate hedging functions (e.g., the increasing verb *indicate* is not as hedging as the decreasing verb *appear*) (a detailed discussion of range and strength of linguistic units can be found in [Berg et al., 2020](#)). That is to say, hedging devices that cover larger chunks of language and offer less hedging quality are being used more. On the other hand, weaker boosting terms are being used more now (e.g., *must* and *indeed* have decreasing frequency, while *show* has an increasing frequency). Taken together, it seems that the applied linguistics articles are gradually moving toward a more moderate epistemic stance by discarding strongly hedging and strongly boosting terms. Moreover, they seem to try to show their epistemic stance through decreasing quantity (i.e., frequency) and moderate quality (i.e., less extreme words that have larger linguistic modification ranges) of stance-related language.

On the other hand, different from [Hyland and Zou \(2021\)](#), the results we obtained showed a significant decrease in attitude markers. Then, adopting [Hyland and J](#) functional categorization of the stance markers, we might assert that applied linguistics authors not only have used fewer markers but also decreased their use of affect-related markers as well. However, once again we found through collocation analysis that this decreased frequency is further augmented by more moderate (rather than extreme) language.

Finally, our results demonstrated that the use of self-mention markers in applied linguistics articles has increased over the past two decades. Although this increase has been non-significant, the increasing trend is incongruent with the downtrend of the other categories of stance markers (i.e., hedges, boosters, and attitude markers) and the overall stance markers downtrend. One reason that might have contributed to this can be the increase in the number of the authors of academic research articles. As our term-by-term analysis revealed, the plural possessive marker *our* has been on the rise, while the subjective pronoun *I* has been sharply decreasing. The consideration of the higher tendency of coauthored articles to use self-mention

markers (Li, 2021) coupled with the increase in collaborative authorship in the past decades (Liu et al., 2017) can justify this increase in the use of self-mention markers in our corpus.

In summary, our findings lead us to propose that the expansion of the disciplinary community, the movement of applied linguistics toward more empirical studies and more objective reporting style, and the tendency of applied linguistics authors to make their epistemic and affect stance more moderate through using less extreme terms with larger semantic modification range seem to be related to the decreasing frequency of stance markers used in the English applied linguistics research articles from 2000 to 2020. Nonetheless, the increase in the number of coauthored articles with their tendency to present themselves more in their writings seems to be related to the increase in using self-mention markers.

Conclusions

This study sought to analyze the way authorial stance has changed in applied linguistics research articles over the past two decades. To this end, continuous diachronic data, an appropriate statistical test for measuring the diachronic trend, collocation analysis, and functional analysis of selected text samples were employed. The results confirmed three suggestions previously made in the literature for stance fluctuations: the expansion of the disciplinary community, the movement of applied linguistics toward empirical studies, and the increased number of coauthored articles. Nonetheless, the novel finding of this study was the decrease in word strength and modification range. That is, we suggest that metadiscoursal terms used to convey stance do not act in a vacuum, but rather the linguistic context in which these terms are used influences their strength and modification range. Authors can use less frequent but more strong words to show their stance. Moreover, they might use words that modify larger chunks of language to suggest their stance, thus using fewer stance markers.

Although our study tried to be as rigorous as possible in its data collection and analysis, there have remained points that can be explored by future studies. For one thing, future research projects can take into account a different selection of applied linguistics articles, paving the way for meta-analysis studies. In addition, the small effect sizes obtained in this study limit the strength of the findings and reduce their generalizability. As effect size is the difference between the means and standard deviations of two or more groups, having similar groups seems to pertain to smaller effect sizes in this study (as all of them were research articles from applied linguistics fields). Therefore, the selection of a more diverse corpus (e.g., larger time spans, multiple disciplines, different genres, and different research methodologies) can enhance the

effect size and generalizability. Consequently, future researchers can examine the diachronic changes of stance using larger time spans, inspect the stance differences among different disciplines over time, investigate the diachronic changes of stance in various genres (e.g., books, articles, conference presentations, etc.), or investigate the diachronic changes of stance between quantitative and qualitative articles.

Finally, we took purely computer-driven metadiscourse markers of stance as our units of analysis, without much further manual checking of stance markers (except for some self-mention markers). Nonetheless, the obtained results revealed that the frequencies we obtained for various stance subcategories (except for self-mention markers) were very close to those of [Hyland and Jiang \(2016\)](#) who had run manual checking of their initial concordance lines. This can be a prompt for future research to see the strength of the difference between the results obtained from purely machine-based frequency counts and the results obtained after manual checking of metadiscourse makers.

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