

A Study of Interactional Metadiscourse in English Abstracts of Chinese Economics Research Articles

Ping Liu¹ & Xu Huang¹

¹School of English for International Business, Guangdong University of Foreign Studies, Guangdong, China

Correspondence: Xu Huang, School of English for International Business, Guangdong University of Foreign Studies, Guangdong, 510420, China. E-mail: 18813962070@163.com

Received: May 7, 2017

Accepted: May 22, 2017

Online Published: June 14, 2017

doi:10.5539/hes.v7n3p25

URL: <http://doi.org/10.5539/hes.v7n3p25>

Abstract

This study adopts the revised interpersonal model of metadiscourse to discover whether and to what extent Chinese authors employ a varying amount of Interactional Metadiscourse (IM) in the past decade in English abstracts of economics Research Articles (RAs). The data was drawn from a prestigious economics journal in China to compose a corpus of 289 abstracts. The analysis indicates that Chinese authors harmonize with English counterparts by capitalizing on more hedges, while the amount of boosters unexpectedly maintains at a high level over time, both of which can be attributed to the interaction of Chinese deep-seated cultural leanings and Anglo-American cultural preferences. Consistent with our prediction, attitude markers exhibit no significant difference along the years given the initial parallel with English counterparts. However, there are significant differences of self-mentions in the past decade regardless of English rhetorical conventions, which may be attributed to economical influences in China. With regards to engagement features, they remain relatively underused with no marked difference within the period resulting from the genre-specific factor which confines their use.

Keywords: interactional metadiscourse, economics, research articles, English abstracts, stance features, engagement features

1. Introduction

As it has been widely agreed upon that academic writers often invest their evaluations and comments on the propositional materials instead of reporting their findings in an objective or faceless way (e.g., Abdi et al., 2010; Crismore et al., 1993; Hyland, 2005a; Vande Kopple, 1985), metadiscourse provides a lens through which writers' meta-awareness of themselves, readers and the text can be systematically explored (Hyland, 2005b). The present study adopts the revised interpersonal model of metadiscourse proposed by Hyland (2005a), and concentrates on the type of IM considering that it is "more personal" (Hyland, 2005a) and addresses the reader more directly in a text compared with interactive metadiscourse. Interactive resources refer to self reflective expressions (e.g., *for example, therefore*) for ordering and shaping the materials and directing readers by predicting their possible reactions, whereas interactional resources comprise linguistic expressions (e.g., *interestingly, consider that*) for writers to make comments and to draw imagined readers to co-participate in the discourse construction. As the latter is a crucial device to convey writers' credibility, personality, relationship to the ideational materials (Crismore et al., 1993), the study on this type of metadiscourse will help to uncover whether and to what extent Chinese authors project their "more personal" meanings into English abstracts of the economics RAs.

Many studies of IM have been conducted on cross disciplinary comparisons and across a spectrum of academic disciplines based on the assumption that authors from different disciplinary communities may observe different conventions to construct arguments and negotiate knowledge claims (Becher & Trowler, 2001; Hyland, 2000), such as between hard and soft disciplines (e.g., Abdi, 2002; Hyland & Tse, 2004; Hyland, 2005a; Peacock, 2010), for example, Hyland (2005b) investigated IM in 240 RAs from eight disciplines in both hard and soft fields and found that RAs from the soft disciplines use IM more frequently than RAs from the hard disciplines; within soft disciplines (e.g., Dahl, 2004; Gillaerts & Van de Velde, 2010; Cao & Hu, 2014); and many intercultural analyses within English for Academic Purposes over the last few decades focusing on the contrast between English and another language in different academic genres (e.g., Bondi, 2009; Martín, 2003; Moreno & Suárez, 2008), for

example, Akbas (2012) examined IM in the dissertation abstracts written by native speakers of English, Turkish and Turkish speakers of English, and reported that Turkish writers employ far fewer IM than their English peers to communicate the credibility and build the solidarity with the audience. By reviewing the current literature on IM, we identify a conspicuous lacuna that merits scrutiny, i.e., scant reflection has been given to the contrast between English and Chinese languages in RAs. One notable exception is that Hu and Cao (2011) conducted a contrastive study of English- and Chinese-medium journals to investigate hedges and boosters in abstracts of applied linguistic articles. Also, as Hyland (2005a, p. 202) called upon: “there are very few diachronic studies of metadiscourse practices and research is urgently needed to document changing thought styles, patterns of arguments, and ideological practices over time”, this study aims to provide some insights into the evolutionary nature of IM.

Another motivation for this study is the implications for English abstracts writing. As an abstract is generally the opening section that enables researchers to decide on the relevance of a paper (Al-Ali & Sahawneh, 2011), it serves the promotional purpose to attract and persuade them to read the entire article (Pho, 2008). The significance of abstracts has been gradually recognized by more and more scholars, as “abstracts are not just the pale reflections of the full-length articles but rather have a specific make-up” (Gillaerts & Van de Velde, 2010, p. 128). They are regarded as a stand-alone genre in academic contexts that captures a number of genre analysts (Gillaerts & Van de Velde, 2010; Hu & Cao, 2011; Hyland & Tse, 2004; Lorés, 2004; Martin, 2003; Pho, 2008; Samraj, 2005). Some researchers (Lon et al., 2012; Ning, 2008; Pho, 2008; Ren & Li, 2011; Samraj, 2005) tended to investigate rhetorical moves in RA Abstracts (RAAs), others examined the rhetorical strategies in RAAs by perceiving the fact that the success of an abstract is to a large extent contingent on the deployment of rhetorical strategies and discursal conventions in a particular disciplinary community (Lon et al., 2012). IM, however, will aid researchers in their abstract writings to engage and persuade readers in a way that their fellows regard as appropriate. Consequently, it is hoped that an examination of IM in English abstracts in this study will shed some insights for novice writers who lack the ability to devise a reader-friendly and persuasive English abstract but seek entry into this community.

Based on the assumption that Chinese authors will lean towards their English counterparts in the use of IM over time to attract a wider international readership, this study will mainly revolve around three research questions: (1) what is the distribution feature of interactional metadiscourse in the studied abstracts by Chinese scholars compared with those by English natives? (2) are there any significant differences in the use of interactional metadiscourse during the past decade (2001-2013), and what are they? (3) what may contribute to the above (non-) differences?

2. Analytical Framework

2.1 Stance Features

This study draws on the model of IM proposed by Hyland (2005b), which consists of stance features and engagement features. Stance features involve writer-oriented resources whose primary function is to convey authors' certainty, tentativeness, attitudes and evaluations towards the experiential reality and to project their presence into the text. While some researchers approached them by examining a range of lexical or grammatical structures, such as passive voice (Baratta, 2009); reporting clauses (Charles, 2006); code glosses and contrast connectors (Aull & Lancaster, 2014); impersonal pronouns (Reilly et al., 2005), in this study, stance is not restricted to one or some specific types of linguistic expressions but concerns all devices that convey epistemic (i.e., hedges and boosters) and affective meanings (i.e., attitude markers) as well as self-mentions.

Hedges refer to those expressions used to communicate the author's tentativeness, cautiousness and circumspection on an assertion (Crismore et al., 1993). They are employed to open up a discursive space for readers' alternative voices and viewpoints (e.g., Hyland & Jiang, 2016) by holding the author's claims as provisional. By hedging an argument, authors strategically negotiate their opinions with the intended readers and seek agreement for new arguments, in the meanwhile, the former conveys modesty and respect for the latter (Holmes, 1990). It is thus vital for authors to weigh the degree of commitment that they intend to invest in their claims since either too much or too little may engender undesired reactions from the readers.

Boosters, as the other side of the same coin (Hu & Cao, 2011), refer to those words and phrases used to communicate the author's certainty, conviction and assertiveness in an argument (Crismore et al., 1993). Contrary to hedges, boosters are employed to close down a discursive space for alternative voices and head off conflicting views (Gillaerts & Van de Velde, 2010). By means of boosters, authors project an authoritative persona into the arguments with a confident voice, in the meanwhile, they mark “involvement with the topic and solidarity with an audience, taking a joint position against other voices” (Hyland, 2005a, p. 53). However, due to

the potentially face-threatening nature, the judicious use of boosters requires a cautious endeavor since either an underuse or overuse of them may place the author in a risky position.

Attitude markers refer to pragmatic connectives that convey the author's affective values (Abdollahzadeh, 2011). Instead of expressing epistemic meanings that evaluate the author's commitment or certainty to the truth-value of a proposition, attitude markers communicate surprise, agreement, importance, obligation, frustration, and so on. While attitudes can be encoded less obviously through the use of subordination, conjunction, progressive particles, punctuation, repetition (Hyland, 2005b), they are most explicitly signaled metadiscoursally by sentence adverbs (e.g., *surprisingly, interestingly*), attitude verbs (e.g., *agree, support*) and adjectives (e.g., *appropriate, remarkable*).

Self-mentions indicate the degree of explicit authorial visibility in a text realized by the use of first-person pronouns and possessive adjectives. By overtly manifesting authorial presence in writings rather than reporting findings in an impersonal and agentless way, authors can establish a professional identity and build solidarity with their fellow members in the disciplinary communities. Though the device employed to project an author's identity into the text vary from each other, personal involvement through first-person pronouns is perhaps the most effective means of self representation (Hyland, 2005a). As Hyland (2005a, p. 53) also demonstrated, "the presence or absence of explicit author reference is generally a conscious choice by writers to adopt a particular stance and a contextually situated authorial identity", it is doubtless that the appropriate frequency use of personal pronouns signals authors' skillful manipulation of their ethos in writings based on a strong awareness of rhetorical conventions in their communities.

2.2 Engagement Features

Engagement features refer to various linguistic strategies employed to explicitly perceive the presence of readers and draw them into the process of knowledge construction and negotiation. By means of engagement features, authors can include the readers as discourse participants and guide them to interpretations. According to Hyland's (2005b) framework, engagement features consist of reader pronouns, directives, questions, shared knowledge and personal asides, but in this study, minor modifications are made to satisfy our analysis need: (1) given the marked overlap between boosters and shared knowledge, for instance, such linguistic devices as *obviously, of course* can simultaneously be boosters and shared knowledge in Hyland's model, we label them uniformly as boosters whose primary role is to convey the author's assertiveness and commitment to the proposition; (2) directives and personal asides are removed as they are not found in our data; (3) based on a preliminary analysis of the studied abstracts, we tentatively add a new engagement feature that demands our consideration, i.e., merit markers.

Reader-inclusive pronouns not only associate with the second-person pronoun (*you* and its corresponding cases), but also include first-person plural forms (*we* and its corresponding cases). They are devices employed to address readers directly and signal authors' participation in the arguments. Therefore, apart from creating an authorial image as cautious or credible, involved or detached through choices of hedges, boosters, self-mentions and attitude markers, authors can also manifest or conceal the presence of the readers in the textual construction.

Questions refer to the strategy employed by authors to invite the reader's engagement in the consideration and resolution of the proposed question. By means of questions, authors are afforded an opportunity to establish an imaginary dialogue with the readers by anticipating their likely uncertainties and doubts about the arguments. Generally, subsequent to questions is often the answer or a direction leading the readers to what they intend, in such a manner, authors actually manifest an ability to accommodate the reader's needs and expectations.

Merit markers refer to those linguistic elements that an author creates to attract audiences into reading a text by presenting a positive and intriguing description of the text and providing a modest promotion of the findings (cf., Dahl, 2009). Instead of communicating an author's epistemic and affective meanings, merit markers are intended to dialogue directly with readers and inform them of potential merits of the text. They are usually realized in two forms, adjectives (e.g., *detailed, vivid*), and adverbs (e.g., *comprehensively, vividly*), as illustrated by the following example:

1) These findings are **robust** as spillover of ex-date effect and measurement bias are taken into consideration (2013-69).

3. Methodology

In this paper, both instruments of quantitative and qualitative analysis have been deployed. Chi-square test, a non-parametric test commonly used in corpus studies without making the assumption of normality (McEnery & Wilson, 2001), was used to determine whether there are statistically significant differences between subcorpora

in the use of IM categories and subcategories. The significance level was established at $p < 0.05$. It is worth noting that due to the minimal frequency of engagement features in our corpus, the statistical test was not performed on them. Apart from the statistical analysis, a qualitative approach was also adopted to investigate how certain IM is used differently over time and to discuss factors accounting for the (non-) differences.

3.1 Data Collection

The corpus in the study consists of 289 RA English abstracts from Economic Research Journal in China taken from different volumes with a three year interval between each, starting in 2001 when the studied journal began to append English abstracts and ending in 2013. Another consideration is to cover the year 2008 as a division for a wider international readership since Economic Research Journal received an official announcement from American Economic Association in 2008 and was then put on the list of EconLit (an international database on Economics). We chose this journal for several reasons: the high prestige that this journal enjoys both domestically and internationally in the economics academia; that authors are more familiar with the rhetorical strategies and linguistic features of English abstracts because Economic Research Journal constitutes one of the earliest journals to append an English version of abstracts; the significant outputs; the most widely issued economics journal abroad.

For the selection of articles, we used computer-generated random numbers to select 60 abstracts for each year (nearly half of the total yearly output). In case of comments to already published papers, book reviews, editorials and call for papers, the next one was chosen. As for the article type, we only included empirical articles in our sample considering their predominant amount, whereas those non-empirical papers, such as methodological papers, research reviews, and theoretical articles were excluded to lessen paradigmatic influences on our results. It is pertinent to mention that there are only 49 English abstracts in 2001, so we selected them all and dealt with them separately to address our first question despite the fact that the two non-wholly-comparable corpora might skew the result.

Table 1. Description of the subcorpora

Year	No. of abstracts	Total words	Minimum length	Maximum length	Mean length	Standard deviation
2001	49	6141	49	215	123.3	36.2
2004	60	7613	56	275	126.9	44.7
2007	60	7850	51	240	130.9	45.4
2010	60	8990	78	252	149.8	44.8
2013	60	9425	92	255	157.1	34.9

As is clearly seen from Table 1, firstly, the extreme values are to be found in 2001 with the lowest minimum length (49 words) and in 2004 with the highest maximum length (275 words); secondly, authors tended to produce longer and longer abstracts over the past decade, evidenced by the continual rise in the mean length of abstracts, on the other hand, the increased length of abstracts is also prone to be stable, indicated by the declining standard deviation. Then, the question is raised as to whether the prolonged abstracts are triggered by more IM, or simply more propositional materials included.

3.2 Data Coding

Given that the same linguistic items could serve as IM in certain context but constitute the propositional elements elsewhere (Hyland, 2005a), we manually identified and coded each instance of IM in context by using UAM Corpus Tool 3.0 to ensure that each coded item conveys metadiscoursal meanings. By adopting the same approach as many scholars did (e.g., Hu & Cao, 2015), we started to code those features by referring to the inventory of IM compiled by Hyland (2005a). Based on exemplars identified in previous literature, more IM not included in Hyland's list but qualified as such was detected in our preliminary examination of the data, in the meanwhile, the existing coding scheme was revised until no further changes were added. For instance, such expressions as *to the best of our knowledge* were found in our corpus to communicate the author's epistemic cautiousness and uncertainty (i.e., hedges).

By employing the same procedure adopted by Hu and Cao (2011), two authors coded all the abstracts independently. Firstly, a training session was conducted to ensure that the two coders are familiar with the coding scheme to code all the abstracts in two rounds. In the first round, the two coders finished all the data

coding and reached an average agreement rate of 83%. Then two coders discussed over those contradicted cases to revise the coding scheme, later the revised scheme was adopted in the second round of coding. In the second round, the agreement rate was approximately 91%. The two coders discussed their problematic cases again and ruled out those equivocal and borderline cases even after discussion from our data analysis.

4. Data Analysis

4.1 Pre-Test Analysis

Prior to the data analysis, a comparison study of IM between Chinese and English authors was conducted as pre-test to discover whether they converge on the deployment of IM in the year when the studied journal started to append an English version of abstracts. As no entirely comparable corpus could be found in the current literature, a most related study is from Akbas (2012) who examined IM in abstracts by English native authors in the Social Sciences (based on Becher & Trowler's, 2001, taxonomy of disciplines, economics belongs to this category). It is essential to note that this comparison aims not to provide a precise but rough reference to get a preliminary knowledge of the gap between Chinese and English authors in the use of IM, as illustrated below. To control length variation and also allow comparison across corpora of unequal size, the number of metadiscourse elements is computed per kiloword.

Table 2. Interactional metadiscourse per kiloword in RAAs (Erdem Akbas & Huang Xu)

Category	EA (7620 words)		HX (6141 words)	
	Tokens	PK	Tokens	PK
Hedges	101	13.3	52	8.5
Boosters	47	6.2	55	9.0
Attitude markers	47	6.2	37	6.0
Self-mentions	34	4.5	30	4.9
Engagement markers	15	2	8	1.3
Total	244	32.2	182	29.7

Note. PK=per kiloword.

From the Table 2, firstly, appreciable differences can be noticed in the use of hedges and boosters between Chinese and English authors: consistent with the previous findings (e.g., Hu & Cao, 2011), Chinese authors employ markedly more boosters to assume a tone of certainty so as to convey authority and credibility (Hu & Cao, 2011) while English counterparts capitalize on far more hedges. However, in order to attract a wider international readership and gain a higher degree of professional recognition in the economics academia, it seems indispensable for Chinese authors to lean towards their English counterparts in the use of hedges and boosters. Thus, it is hypothesized that Chinese authors would have capitalized on more hedges and fewer boosters over time as English counterparts do. Secondly, Table 2 indicates that Chinese authors employ approximately the same amount of attitude markers and slightly more self-mentions than English counterparts, which is expected to maintain over time. Thirdly, the overall IM utilized by Chinese authors are fewer than that by English counterparts, however, as engagement features in our corpus were coded based on the revised coding scheme, the comparison of this category was not elaborated here.

4.2 Data Analysis

After the pre-test, both quantitative analysis and qualitative analysis were conducted in the four subcorpora, namely 2004-, 2007-, 2010- and 2013-subcorpus. Table 3 presents the frequency of each IM category for each subcorpus. On the whole, there is an obvious tendency that the authors capitalize on more and more IM over the decade, which contributes to the growing length of abstracts. A proportion examination of all categories in the four subcorpora shows that hedges constitute 29.53% of the total, the predominant use of which signals "the awareness of academic authors of the critical importance of distinguishing fact from fancy in academic writing" (Abdollahzadeh, 2011, p. 292). On the other hand, it shows that boosters constitute 26.80%, approximately the same as hedges, which somehow deviates from the previous findings that authors manifest a clear preference for either circumspection or conviction in constructing their arguments. Table 3 also illustrates that the subcorpora share some characteristics: (1) there exists a similar hierarchy of IM categories among the four subcorpora, i.e.,

hedges are used most frequently and boosters follow right behind, self-mentions are usually the third mostly used while engagement features the least used among all categories; (2) authors in all the subcorpora put a substantially unequal emphasis on conveying their own stances and establishing a dialogic interaction with their readers, evidenced by the huge percentage gap between stance features and engagement features.

Table 3. Descriptive statistics for interactional metadiscourse in the four subcorpora

Category	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Hedges	75	9.85	90	11.46	109	12.12	127	13.47
Boosters	72	9.46	81	10.32	103	11.46	108	11.46
Attitude markers	57	7.49	52	6.62	53	5.90	55	5.84
Self-mentions	50	6.57	60	7.64	97	10.79	102	10.82
Engagement markers	25	3.28	9	1.15	19	2.11	14	1.49
Total	279	36.65	292	37.19	381	42.38	406	43.08

4.2.1 Hedges

As mentioned above, hedges dominate among all the categories analyzed in the four subcorpora. It constitutes slightly over 30% of the total in both 2007- and 2013-subcorpora, while 26.88% in 2004- and 28.24% in 2010-subcorpus. Table 3 indicates that authors utilize an increasing number of hedges from 9.85 per kiloword in 2004 to 13.47 per kiloword in 2013 and this difference is statistically significant ($p < 0.05$, $df: 1$, $\chi^2 \text{ crit.} = 3.84$, $\chi^2 \text{ obs.} = 4.50^*$), which supports our hypothesis that there is a tendency towards English natives in the deployment of hedges over time. More specifically, hedges can be further broken into two sub-categories based on Lee and Deakin's (2016) taxonomy: content- and reader-oriented hedges. Content-oriented hedges "concern a statement's adequacy conditions: the relationship between proposition and a representation of reality" (Hyland, 1996, p. 439). They consist of two aspects, that is, accuracy- and writer-oriented hedges. Accuracy-oriented hedges (e.g., *about*, *certain*) represent authors' uncertainty in demonstrating the precision, accuracy of the propositional materials (see example 2). Writer-oriented hedges (e.g., *suppose*, *argue*) are used to detach authors from complete commitment to the ideational information, thus shunning potential threats of objection (see example 3). Authors capitalize on this type of hedges considering the possible risk that they might otherwise be confronted with while reader-oriented hedges (e.g., *in my view*, *would*) signal their concern for readers' reactions and demonstrate their modesty and respect for readers (see example 4). Of course, in accord with Hyland's (1998, p. 184) statement that "all hedges are 'writer-oriented' in the sense that they function to reduce the risk of claim negatability", we hold that it's different levels of importance authors attach to themselves and readers that distinguish writer-oriented hedges from reader-oriented hedges.

2) Though under **certain** conditions it's self-beneficial for the less-developed region to behave strategically, it's socially inefficient because of loss in total production and allocative efficiency (2004-7).

3) We **suppose** that the difference of energy intensity between the Western region and the Eastern region in China is the function of the difference of per capita GDP between the two regions (2007-83).

4) The welfare of committing area **would** improve in contrast with committing direct contributions and matching rate by two areas (2013-101).

Table 4. Frequency of hedge subcategories

Hedge subcategory	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Accuracy-oriented	57	7.49	70	8.91	81	9.01	103	10.93
Writer-oriented	11	1.44	11	1.40	12	1.33	18	1.91
Reader-oriented	7	0.92	9	1.15	16	1.78	6	0.63
Total	75	9.85	90	11.46	109	12.12	127	13.47

Overall, accuracy-oriented hedges are used far more frequently than the writer-oriented and reader-oriented hedges (see Table 4). Then the comparison of each subcategory between the subcorpora demonstrates that authors tend to utilize more accuracy-oriented hedges while the other two show no unidirectional variations over the years. So Chi-square test is performed to determine whether the subcorpora are statistically different in the employment of accuracy-oriented hedges, and the result is positive ($p < 0.05$, $df: 1$, $\chi^2 \text{ crit.} = 3.84$, $\chi^2 \text{ obs.} = 4.96^*$). It is thus safe to conclude that accuracy-oriented hedges, as the mostly used subcategory, directly reflect the variation of the total, i.e., the rising trajectory of accuracy-oriented hedges is parallel to that of all hedges.

We argue that by the predominant use of accuracy-oriented hedges, authors can embed various hedging devices in the claims without the overt manifestation of authors' projection, thus leaving an impression that the reliability of the claims couldn't be secured whether authors intervene in or not. In this way, accuracy-oriented hedges can arguably shield authors from readers' possible objections by taking the former's positive face into consideration (i.e., challenge to their inability to provide precise propositional content). This assumption is also supported by the fact that authors are rather reluctant to assign their personal visibility to the text in the use of writer-oriented and reader-oriented hedges, as claimed by Charles (2006, pp. 512-513), "the lack of writer visibility combines with the uncertainty in the verb to construct a stance of academic modesty which makes the favorable judgment more acceptable to the disciplinary community".

A qualitative analysis shows that writer-oriented hedges are always collocated with text nouns and research nouns (Charles, 2006) rather than personal pronouns. In example 5, the author communicates the epistemic meaning in discussing the research by preceding the hedging verb *suggest* with a conventional research noun *the model*, which conceals the authorial presence in constructing the claim. Similarly in example 6, the argument is proposed with the text noun *the paper* as sentence agent, which is commonly used in our corpus by hedging the findings initiated by impersonalized nouns, such as *the study*, *the research* and so on. Authors weigh the appropriate level of personal involvement in conveying the tentativeness and uncertainty to their claims in order to avoid being too subjective.

5) The model **suggests** that governments may choose to repress the financial sector to allow for continued development of the industry sector while inhibiting growth in the domestic service sector (2013-6).

6) This paper **argues** that corporate financial distress and financial bankruptcy are two different financial situations, and they should be forecasted, diagnosed and cured with different methods (2004-94).

4.2.2 Boosters

Boosters, are utilized almost as frequently as hedges in the four subcorpora. They account for over one fourth of the total and even exceed 27% in the 2007-subcorpus. According to the figures in Table 3, boosters are on a pronounced increase over time though they tend to keep stable from 2010 to 2013. However, Chi-square test shows that there is no significant difference of boosters within this period ($p < 0.05$, $df: 1$, $\chi^2 \text{ crit.} = 3.84$, $\chi^2 \text{ obs.} = 1.52$). This finding runs counter to our expectation that Chinese authors will harmonize with their English counterparts by reducing the heavy use of boosters, so a closer inspection of boosters is operated. Boosters can be further divided into four subcategories depending on their grammatical properties (cf., Abdollahzadeh, 2011; Hu & Cao, 2011): (1) emphatic verbs, including modal verbs (e.g., *must*, *should*) and lexical verbs (e.g., *find*, *demonstrate*); (2) emphatic adjectives and adverbials, such as *obvious*, *definitely*; (3) miscellaneous, such as *it is well known that* (see example 7).

7) **It is well known that** Core-Periphery model from New Economic Geography can explain the industrial agglomeration of the current coastal areas (2010-36).

Table 5. Frequency of booster subcategories

Booster Subcategory	2004		2007		2010		2013	
	Tokens	Per kiloword	Tokens	Per kiloword	Tokens	Per kiloword	Tokens	Per kiloword
Emphatic verbs	61	8.01	70	8.90	80	8.90	87	9.23
Emphatic adjectives and adverbials	7	0.92	6	0.76	8	0.89	13	1.38
Miscellaneous	4	0.53	6	0.76	15	1.67	8	0.85
Total	72	9.46	81	10.32	103	11.46	108	11.46

Table 5 shows that emphatic verbs far outnumber emphatic adjectives and adverbials and miscellaneous. Then given the greater proportion and the increasing trend over time, emphatic verbs are statistically tested but no significant difference is found ($p < 0.05$, $df: 1$, $x^2 \text{ crit.} = 3.84$, $x^2 \text{ obs.} = 0.73$), which is consistent with the aforementioned result that there is no statistical difference in the booster use over time. As for the other two subcategories, they are rather underused by authors and the minimal variations over the past decade might be explained by authors' idiosyncratic preferences for different emphatic devices.

A qualitative analysis demonstrates that emphatic verbs are often collocated with personal pronouns and possessive pronouns (see example 8 and 9), which can achieve two functions: first, authors can highlight their personal projection and confidence in constructing the claims for the ultimate purpose of manifesting authoritative voice and gaining academic recognition in the economics community; second, the appropriately frequent use of this collocation *in situ* also serves to distinguish this community from others and in turn makes those authors who are competent to manipulate it recognizable by the community members. By comparison of lexical items collocated with hedges and boosters, it is found that authors tend to exhibit more personal involvement in conveying assertiveness and conviction to claims than in conveying tentativeness and uncertainty. The qualitative analysis also shows that a wider array of emphatic devices has been employed over the past decade. These forms such as *strong evidences* are frequently used to convince readers about the strength of results or claims, and *it is well known* to accentuate authors' awareness of the common knowledge shared by them and readers.

8) We **demonstrate** that heterogeneity among people in returns to schooling is substantial (2004-47).

9) Our key result **shows** that foreign presence generates spillovers, both "intra-regional" and "inter-regional" (2010-10).

A closer examination of boosters in our subcorpora indicates that while boosters are used separately in most cases, the patterning use of hedges and boosters figures prominently and has a "joint interactive effect on the authorial certainty and confidence" (Hu & Cao, 2011, p. 2802) invested in the claims. In example 10, the authors deploy the widely used epistemic verb *show* with *we* as the grammatical subject to signal their commitment to the claim, simultaneously, the claim is consciously hedged by the modal verb *can* which in this context achieves an epistemic realization of uncertainty. Similarly in example 11, *our estimating results* manifests the degraded reliability and persuasiveness of the results followed by the epistemic verb *show* which conveys authorial assertiveness. It can be argued that the paralleled use of hedges and boosters has a competing but collaborative effect on the credibility of claims being made, and authors could project a negotiated assertiveness into the discourse by combining them.

10) In this paper we analyze the formation of excess capacity, **showing** that excess capacity **can** be led by decentralized investment decisions under incomplete information rather than fluctuations in aggregate demand (2010-104).

11) Considering the characteristics of different importing regimes, indirect importing and capital goods importing, **our estimating results show** that: the DVAR of China's exports has risen from 0.49 in 2000 up to 0.57 in 2006 (2013-108).

4.2.3 Attitude Markers

In our subcorpora, attitude markers occupy a relatively small proportion compared to the other categories: they compose less than 20% in three subcorpora while only 13.55% in the 2013-subcorpora. Table 3 shows that authors are inclined to use fewer attitude markers over the period, whereas Chi-square test shows that the difference is insignificant ($p < 0.05$, $df: 1$, $x^2 \text{ crit.} = 3.84$, $x^2 \text{ obs.} = 1.33$), which suggests that authors convey their evaluations to a statistically stable degree from 2004 to 2013. Attitude markers can be decomposed into three subcategories: (1) attitude verbs, including modal verbs (e.g., *must*, *should*) that convey obligation and necessity to have something done and common affective verbs (e.g., *expect*, *prefer*); (2) sentence adverbs (e.g., *surprisingly*, *essentially*) that signal unexpectability of the results; (3) attitude adjectives (e.g., *interesting*, *remarkable*) that highlight interestingness and significance of the findings.

Table 6. Frequency of attitude marker subcategories

Attitude marker subcategory	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Attitude verbs	19	2.50	13	1.66	9	1.00	12	1.27
Sentence adverbs	3	0.39	2	0.25	5	0.56	2	0.21
Attitude adjectives	35	4.60	37	4.71	39	4.34	41	4.35
Total	57	7.49	52	6.62	53	5.90	55	5.83

Table 6 illustrates that overall, attitude adjectives are more heavily used than attitude verbs and sentence adverbs. It also shows that even though the three subcategories increase or decrease to some degree over the analyzed period, they each maintain at certain level, for instance, attitude adjectives are seen to fluctuate around 4.5 per kiloword. Given the small range and opposing directions of change in the use of three subcategories, Chi-square test is not employed to detect whether they are on the significant wax or wane over time.

A qualitative analysis then shows that among all attitude verbs, modal verbs are overwhelmingly used to signal imperativeness to accomplish some actions. According to Giltrow, such modal verbs can be broken down into knowledge deontics (i.e., “expressions of obligation to do with carrying out research”) and field deontics (i.e., “expressions of obligation to do with carrying out actions in the world”) in academic discourse (2005, p. 177). The data analysis indicates that authors prefer to use more field deontics to provide suggestions for external realities (see example 12), while knowledge deontics are rarely used to convey obligation to carry out some procedures in the research process (see example 13).

12) Therefore, to strengthen the effectiveness of corporate governance, the Chinese government **should** continue to deepen state enterprise reforms and foster a more vibrant modern enterprise system (2010-117).

13) Secondly, we **have to** consider the change of coverage scale, while doing projection of contribution and benefit of social security (2004-109).

Even accounts for almost the total of sentence adverbs, which manifests authors’ evaluation of “the relative unexpectedness of something being the case” (Hyland & Jiang, 2016, p. 263), as shown in example 14.

14) Furthermore, compared to “fair tournament”, tournament biased to last period “winners” has more great dynamic incentive effect **even** when firms are homogenous on product efficiency (2010-81).

As for attitude adjectives, expressions of significance, such as *important*, are the most preferred items to achieve three purposes in our subcorpora: (1) they are used to project authors’ assessment of importance in performing some actions in the world (see example 15); (2) they are used to emphasize the significant level in expressing the propositional content (see example 16); (3) they are used to draw readers’ attention to the value of the findings or results (see example 17).

15) Therefore, enhancing the predictability of economic policy and building up a perfect social security system will play **critical** role in risk sharing of the households (2004-42).

16) Compensation ratio is set up irrationally by the reformed firms, there exists **significant** “anchoring and adjustment” biases (2007-9).

17) The key findings of the paper have **important** policy implications (2010-10).

4.2.4 Self-Mentions

In our data, the number of self-mentions ranks behind those of hedges and boosters: they compose over one fourth of all IM in 2010- and 2013-subcorpora, even the smallest proportion is 18.15% in 2004-subcorpus. It is noticeable from Table 3 that self-mentions experience a substantial increase from 2004 (6.70 per kiloword) to 2013 (10.82 kiloword), and the statistical test proves that this difference is significant ($p < 0.05$, $df: 1$, χ^2 crit.=3.84, χ^2 obs.=7.72*). Based on Dahl’s (2009) classification, the use of self-mentions can help authors realize three roles in abstracts: (1) researcher role is what an author assumes in depicting the research process or experiment procedures (see example 18); (2) writer role is what an author assumes in structuring the abstracts and ordering the materials (see example 19); (3) arguer role is what an author assumes in negotiating the knowledge claims and convincing the readers (see example 20).

18) However when **we** introduce labor adjustment cost (model 1) and liquidity constraints into a standard RBC model (model 2) with indivisible labor, second moments from our calibrated models fit the data quite satisfactorily (2007-119).

19) Therefore, the main theme of **our** paper is to promote the process of rural labor migration and growth by making full use of foreign resources (2004-43).

20) **Our** main findings support the basic facts in the related literature (2013-122).

Of course, one single self-mention could also perform more than one role in the same sentence, for instance, they perform researcher and arguer roles (see example 21), or writer and arguer roles (see example 22).

21) **We** employ the Difference in Differences model and find that the corporate risk-taking is significantly increased after privatization (2013-92).

22) **We** also probe into the merchant mechanism in the Grid expansion, and found that the efficiency of this mechanism correlates directly with the Grid interconnection status quo, demand elasticity and the social cost of the public fund (2004-9).

On the whole, self-mentions are more used to accomplish researcher and arguer roles. Then, considering that both researcher and arguer self-mentions are on the constant wax over the period, the statistical test is performed on them respectively. It is demonstrated that there is significant difference in the use of researcher self-mentions ($p < 0.05$, df: 1, x^2 crit.=3.84, x^2 obs.=7.69*) but no significant difference in the use of arguer self-mentions ($p < 0.05$, df: 1, x^2 crit.=3.84, x^2 obs.=1.10) between 2004- and 2013-subcorpora. This finding is suggestive of the marked correlation between the increasing number of researcher self-mentions and that of total self-mentions, i.e., the pronounced variation of researcher self-mentions directly lead to the significant change of the total.

Table 7. Frequency of self-mention subcategories

Self-mention subcategory	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Researcher self-mentions	15	1.97	23	2.93	40	4.45	42	4.46
Writer self-mentions	12	1.58	11	1.40	25	2.78	22	2.33
Arguer self-mentions	24	3.15	26	3.31	33	3.67	39	4.14
Total	51	6.70	60	7.64	98	10.90	103	10.93

Note. As certain self-mentions can perform double roles, the total number in this table is greater than that of self-mentions.

A qualitative analysis shows that *we* dominates the frequencies, composing 77.35% of all self-mentions. Even in single-authored abstracts, authors still see the increasing need to avoid subjective findings and acknowledge those who also contributed to the work through the use of *we* rather than *I* or the author, which is rather salient in thesis in which Master candidates intentionally use *we* to acknowledge their supervisors for the guidance in the thesis writing (Akbas, 2012). On the other hand, the growing trend towards more collaborative writing and co-authorship also spurs authors to strongly identify themselves with their knowledge claims in the form of first-person plural pronouns. Apart from the authors' inclination for more researcher self-mentions to describe the research methods, the qualitative analysis also indicates that self-mentions can achieve a series of textual purposes: they serve as the agent to present the main theme of the paper (see example 23); to draw the conclusions (see example 24); to provide possible suggestions or implications (see example 25).

23) In this paper, **I** discuss the basic ideas and methodologies of econometrics, its status, roles and limitations in modern economics, and its differences from mathematical economics, mathematical statistics, and economic statistics (2007-52).

24) **We** conclude that although patent protection was prolonged since 1993, the incentive to input resources to R & D and apply a patent in China didn't increase but decrease (2004-113).

25) Based on above analysis, **we** put forward some policy suggestions (2010-65).

4.2.5 Reader-Inclusive Pronouns

Reader-inclusive pronouns serve as an effective way of building solidarity with readers and seeking their opinions by direct reference to them. They consist of first-person plural pronouns and its corresponding cases

(i.e., *we*, *us* and *our*), and second-person pronouns and its corresponding cases (i.e., *you*, *your*), however, only the first type is identified in our data. Despite the significance to directly engage readers, reader-inclusive pronouns are seriously underused in our data. Based on the figures in Table 8, it can be found that there is a sharp decline of reader-inclusive pronouns over the past decade, and surprisingly, no reader-inclusive pronouns are used in 2013.

As our qualitative analysis indicates, reader-inclusive pronouns can be used to refer to the external reality shared by authors and readers (example 26). Through the use of this device, the authors intend to begin an imagined dialogue with readers and communicate their opinions in a reader-friendly way. In addition to resorting to shared external reality, reader-inclusive pronouns can also help establish a common ground with readers by making an appeal to their shared professional knowledge (see example 27).

26) It is expected that when **our** country's per capita GDP goes up to a new level, **our** service industry proportion will rise significantly (2004-4).

27) It is a law accepted by **us** that the proportion of service industry rises with the economic development (2004-4).

Table 8. Frequency of reader-inclusive pronouns

Category	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Reader-inclusive pronouns	21	2.76	4	0.51	6	0.67	0	0

This engagement device aims to bond authors and readers together by including the readers as discourse participants with common knowledge. On the other hand, it also projects the authors' assertiveness, confidence into the conveyed claim by foregrounding the fact that it is not the authors' own fantasy but an accepted law to the perceived readers, thus functioning as a booster. This device is also employed to guide readers through the literature review process, anticipate their doubts and express their concerns by weaving their possible comments into the discourse (see example 28).

28) This inappropriate definition distorts the nature of the large shareholders' expropriation and leaves **us** several unsolvable theoretical and practical problems (2007-18).

In this example, the authors consciously invite readers as co-reviewer of previous literature and put forward potential problems on behalf of both themselves and readers, which justifies the imperative to conduct the study at work. Furthermore, by claiming common understanding with readers, the authors protect themselves from possible contradictive opinions. Reader-inclusive pronouns are also used to position readers as the inclusive agent to fulfill suggestions offered by authors. In example 29, *we* is employed to include readers as the performer to carry out some actions in the reality, and by combination with the modal verb *must*, the author also conveys obligation to achieve the intended result by assuming an established relationship with readers.

29) Therefore, in order to increase R&D input level, technological level and growth rate, **we** must provide incentive for more productive innovative activities through political, economic, legal and cultural institutional arrangement (2007-89).

4.2.6 Questions

Simple questions, complex questions and elliptical questions are identified in our subcorpora. All questions studied are rhetorical questions to which the answers are either manifestly presented or implied in the discourse, and those expressions that are led by interrogative words and embedded in a main clause, are not qualified as a "question" device considering the function it performs in the text, as shown in example 30. As the subordinate clause led by *how* serves as only an impersonal statement of what the authors explore, it constitutes part of the propositional content while its interpersonal function can be challenged or denied. Table 9 shows that there is a slight increase of questions being used over time. As indicated that the tokens of questions remain stably low in the past decade, the qualitative analysis is directly conducted to examine how questions are employed to achieve interpersonal functions. First, the majority of questions in our data are found to function as discourse initiator that are placed in the opening part of an abstract to unfold the subsequent discourse (see example 31).

30) Specifically, we explore **how** the degree of regional marketization and the central government's "seize big, drop small" and "strategic restructuring" of SOE reform strategies, based respectively on firm size and industry category, influence the ultimate controlling government's level, government's share ratio and government's shareholding method (2007-79).

31) **Would** the growing competition from Chinese industrial exports de-industrialize Southeast Asia (SEA), returning SEA to being a primary commodity exporter? **Or would** there be sufficient lucrative niches within the manufacturing production chains that SEA could specialize in (2004-49)?

Table 9. Frequency of questions

Category	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Questions	2	0.26	3	0.38	5	0.56	5	0.53

Those questions are used to invite readers to be equal, collaborative researchers who share the same interest in these questions to be addressed and guide them to the research process by bringing to the fore the research focus, the answer to which can be directly or indirectly detected in the unfolding text. It is worth noting that in one of the studied abstracts, four questions are raised in a row to open an explicit dialogue with readers while in fact expecting no response from them. By the intensive use of such devices, the author not only displays the heightened emphasis on establishing solidarity with readers by anticipating their doubts as regards to the study at issue, but also highlights the main issues the paper will revolve around. In some cases, questions are proposed in the wake of background information. Instead of coming straight to the questions, the author firstly introduces some information concerning the study, indicates possible issues in previous literature, and then proposes the research questions (see example 32).

32) It is well known that Core-Periphery model from New Economic Geography can explain the industrial agglomeration of the current coastal areas. **But is it** the only mechanism (2010-36)?

Based on the common knowledge shared by the authors and other scholars, the authors raise their concern as to whether the existing model is the only explainable one through identifying the inadequacies in the current studies. By drawing readers along with the discourse as researcher peers, the authors aim to build solidarity with them in the process of resolving the question that perplex both. Subsequently, another mechanism is thus provided to address the question and meet readers' expectation. Overall, in either example 31 or 32, questions are always presented at the very beginning of abstracts to initiate the dialogue with readers and arouse their interests in exploring the research procedures, which performs important textual and interpersonal functions.

4.2.7 Merit Markers

With readers' expectations, needs and wants on the mind, authors employ merit markers to create a compelling and fascinating impression on the readers. Despite the fact that no obvious reader presence can be found in this device, merit markers are targeted at the readers to capture and convince them of the academic value. In this sense, there is certain overlapping between merit markers and boosters, both of which conveys some degree of confidence and certainty in the knowledge claims. To avoid the overcoding of IM, this paper labels those devices according to the primary interactional functions they perform in the discourse (see example 33). In this example, the author communicates the assertiveness in making the argument, but the primary function of *robust* is arguably to inform readers about the great strength of its findings and intrigue them into the whole article, hence merit markers instead of boosters.

33) Such findings are **robust** to different measures of TFP (2010-133).

Table 10. Frequency of merit markers

Category	2004		2007		2010		2013	
	Tokens	PK	Tokens	PK	Tokens	PK	Tokens	PK
Merit markers	2	0.26	2	0.25	8	0.89	9	0.95

Similar with the other two engagement devices, merit markers are relatively underused by authors. Based on the figures in Table 10, an inappreciable increase of merit markers can be identified, so the qualitative analysis is then carried out. Among the four subcorpora, the most commonly used merit markers refer to those employed to underscore the significance of the results and findings, and the abundance of the policy implications and contributions, such as *this analysis has very meaningful policy implications*, and so on. Some authors capitalize on this device to highlight the novelty and worth of current study compared with the previous literature. In example 34, the author emphasizes the stronger potential of the modified model by the use of *more robust predicting capability*, it can be argued that the author doesn't simply report the strength of this model in an impersonal and faceless way, but implicitly invite the readers as interactional partners and encourage their reviews.

34) But as a whole, the modified model has **more robust predicting capability** and can issue more timing warning signals than standard EWSs.

35) Compared to the method proposed by Hsieh and Klenow (2009), our method is **more precise** in measuring the efficiency of resource allocation and is able to distinguish the effects from each factor.

Similarly, in example 35, the authors intend to address the readers and inform them of the advantage of the present study over previous studies. In this way, *more precise* intends to engage and convince the readers that the method under study takes precedence over that proposed by others, thus imparting more value in reading the paper. In other cases, merit markers are employed in the beginning of abstracts to summarize the research and indicate the highlights. As shown in example 36, the authors firstly abstract the main contribution from the current study and aim to interest readers by using the positively loaded phrases, i.e., *a coherent framework and fully account for*.

36) This paper provides **a coherent framework to fully account for** China's development model, both the successes and the failures of the China's decentralization approach to reform (2007-10).

5. Discussion

With regards to the (non-) variations of IM use over time, we argue that both internal and external factors may account for them. The internal factors here refer to those constitutive features intrinsic to the academic activity at study, and are nearly tantamount to genre-specific features that function to constrain the use of IM. The external factors deal with those extra-linguistic features having a tangible influence on the rhetorical conventions, and include cultural and economic influences in the current study. Both factors are at work to contribute to the variations and non-variations of IM use respectively, the eventual outcome of which is the interaction between them despite the fact that the (non-) variations can be more determined by either of them.

Prior to the discussion, we need to revisit the initial comparison of IM use in English abstracts between Chinese authors and English counterparts, which to some degree determines the potential of possible variations over the studied period. Putting aside engagement markers due to different coding schemes, other categories indicate that: (1) consistent with our expectation, the past decade witnessed a growing number of hedges while the amount of boosters unexpectedly remains at a high level, both of which can be accounted for by cultural influences; (2) Chinese authors and English counterparts initially converge on the deployment of attitude markers, which justifies the non-statistical difference from 2001 to 2013, so they are left out of discussion here; (3) contrary to our prediction, the amount of self-mentions exhibits a significant difference over the same period resulting from the external factors, more specifically, from economic influences. Lastly, the low use and relative consistency of engagement features can be attributed to the strong effect of internal factors, i.e., the genre-specific features shape an academic context that constrains the use of engagement features.

5.1 Cultural Influences

As shown above, authors are expected to employ more hedges and fewer boosters over the past decade in order to adapt to English discourse community, however, the results demonstrate that Chinese authors place a heavier emphasis on hedging arguments on the one hand, and maintain the rhetorical conventions of accentuating the conviction and confidence in expressing their claims on the other hand. We are thus driven to argue that both Chinese authors' own deep-seated cultural leanings and Anglo-American cultural preferences have a collaborative effect, if not equal, on their investment of credibility and tentativeness in English abstracts.

Contemporary Anglo-American rhetorical preferences for hedging devices have their historical roots in the Greek dialogical rhetorical tradition, more specifically, Socratic and Aristotelian philosophical traditions (e.g., Hu & Cao, 2011; Liu, 2005), where the transformation of claims into knowledge demands dialogical debates and formal argumentation with audiences or readers. By challenging one's own as well as others' arguments or

claims, and by retrospectively poring over accepted knowledge and debating on individual views (e.g., Tweed & Lehman, 2002), scholars place previous knowledge claims in a constant process of ratification and negotiation, which contributes to the negotiated accumulation of knowledge. It has also been tacitly assumed by Anglo-American scholars that claims must stand up to others' questioning and counter arguing to become categorical assertions (Hyland, 1996), otherwise they remain as hypotheses that require varying degrees of hedges invested. As a result, in the genre of academic writing, these historical roots are likely to shape these influences linguistically through "rational reasoning, a preference for reasoned discourse" (Hu & Cao, 2011, p. 2804). Liu (2005), by conducting a comparative analysis of selected online instructional materials on argumentative writing, found that American writers see the imperative to accommodate the readers and attend to their opposition. Resonant with this finding, Liao and Chen (2009) also demonstrated that all English texts, in their samples, attach much importance to addressing opposing viewpoints in argumentative texts. Hence, it can be concluded that Anglo-American scholars take advantage of hedging devices of various types to display the cautiousness and circumspection towards their arguments on the one hand, and to express humility and respect for the readers on the other hand in their argumentative writings.

With regards to Chinese rhetorical conventions, it can be traced back to Confucian and Taoist traditions (e.g., Hu & Cao, 2011; Tweed & Lehman, 2002), where the Chinese as well as people from other Asian cultures are less likely than Anglo-Americans to engage in debates and formal argumentation. Scholars have also shown empirical support for the previous findings that in the Asian tradition, less emphasis is given to constructing counterarguments than Western does (Hu & Cao, 2011). Unsurprisingly, in academic discourse, this cultural preference is likely to find its linguistic realization in the use of boosters rather than hedges that accommodate readers' possible counterarguments. As Liao and Chen (2009) stated, it has been conventionalized since the antiquity that Chinese writers were encouraged to rely heavily on a sage's sayings, proverbs, clichés and so on, to display an authoritative voice in constructing and communicating their claims, which might help them score high in the exam. They are thus inclined to "foster respect for essential, authoritative knowledge" (Hu & Cao, 2011, p. 2804) and form a reliance on prior beliefs and values in the devising of articles. And Chinese authors' emphasis on the authority's viewpoints might give rise to their conscious dismissal of opposing arguments under certain circumstances (Liu, 2005), in turn, they view the academic discourse as a venue to announce knowledge and assert truth rather than an arena to negotiate claims and debate over assumptions (Hu & Cao, 2011). In other words, Chinese authors feel less compelled than their Anglo-American counterparts to persuade others in the acceptance of their arguments, and they tend to assume a tone of conviction and confidence in constructing knowledge with less attention to readers' contradicting views.

However, many contemporary Chinese scholars exhibit not only traditional Chinese rhetorical norms in their English-medium journals, but also show much affinity with English rhetorical conventions derived from increasing exposure to English academia and more frequent sociality with English scholars. Based on our data analysis, it can be argued that both Chinese and English cultural practices have a joint effect on Chinese author's design of English abstracts. More specifically, Chinese authors, influenced by English rhetorical traditions, attach increasing importance to tentativeness and circumspection by embedding more hedging devices in their claims over time. On the other hand, they are still subject to the deep-seated Chinese cultural belief that "assertions rather than proofs" should be offered in Chinese argumentative writings (Liao & Chen, 2009, p. 698), as a result, they capitalize on a stably considerable number of boosters to convey assertion and certainty over time.

5.2 Economic Influences

Regardless of the fact that Chinese authors initially employ slightly more self-mentions in English abstracts than their English counterparts, the past decade exhibits a significant difference of their use ($p < 0.05$, $df: 1$, $x^2_{crit} = 3.84$, $x^2_{obs} = 7.72^*$). Whereas cultural factors lack the explanatory power for the unexpected difference within the period, economic influences can account for it by drawing on the sociologic concepts of "capital" and "field" proposed by Bourdieu (1977, 1990).

In the past few decades, China has maintained a strong economic momentum and experienced a stable growth of gross domestic product according to the National Bureau of Statistics of China. There is no doubt that the economic growth will contribute to the increase of "economic capital" in the field of Chinese economy (Bourdieu, 1990). Given the fundamentality of economic capital and the transformability between forms of capital, the increasing economic capital will to some extent augment scientific capital in the field of Chinese academia. To be more specific, the economic capital, as the most basic capital, shapes its influence on the scientific capital in the form of power based on the claim that capital itself represents a kind of power through which it interacts with its field. Then the growing scientific capital in the same way manifests its power by

means of the language which is the carrier of symbolic power (Bourdieu, 1991). Therefore, Chinese authors consciously build their meta-awareness of the symbolic power of scientific capital into the discourse linguistically realized by the use of self-mentions to underscore the researcher position and gain more recognition from international peers in the academic field. In other words, the heavy use of self-mentions in RAAs is the positive reflection of the researchers' metalinguistic awareness of the increasing scientific capital derived from greater power engendered by economic capital, which can be attributed to economic influences. The data analysis also confirms that researcher self-mentions are substantially ($p < 0.05$, $df: 1$, $x^2 \text{ crit.} = 3.84$, $x^2 \text{ obs.} = 7.69^*$) more employed than writer and arguer self-mentions by authors to accentuate scholarly identity.

5.3 Genre-Specific Features

As stated above, the comparison with Akbas's (2012) study is deficient to justify the possible variations underlying the use of engagement features since different coding schemes are employed to detect them. By calculating the counts in our subcorpora, it is easy to find that authors feel less need to establish an explicit dialogue with their readers and there are no appreciable variations in the use of engagement features over time. We argue that the constant underuse of this category can be accounted for by the strong effect of the internal factors, i.e., the genre of RAAs contextualizes and confines its use.

It has been confirmed that a great emphasis has been given to engagement features in a number of genres, such as job postings (Fu, 2012), FL book reviews (Ryshina-Pankova, 2011), newspaper discourse (Dafouz-Milne, 2008) and so on in order to establish a relationship with the audience. However, in the genre of RAAs, a condensed but accurate representation of the main contents of a research article, scholars are inclined to privilege the propositional information and their stances (e.g., epistemic meanings) considering that the primary goal of RAAs is to abstract the central idea of the whole-length article, the expression of which cannot be detached from authors' epistemic knowledge. As a result, less space is left for engagement features in academic writing than that in aforementioned genres due to the length restraint imposed by the journal, and many IM studies have also verified this view (e.g., Hu & Cao, 2015; Mocanu, 2015). Inconsistent with the overall stable use of engagement features, merit markers, which is arguably qualified as engagement features in our data analysis, has been witnessed to experience a slight increase in the past decade. This slight increase can be attributed to authors' heightened awareness to inform readers of the robustness of their findings.

Acknowledgments

This study has been supported by the project (16BYY193). "The socio-cognitive approach to metapragmatic utterances in BELF interactions", funded by the National Planning Office of Philosophy and Social Science, P.R. China.

References

- Abdi, R. (2002). Interpersonal meta discourse: An indicator of interaction and identity. *Discourse Studies*, 4(2), 139-145. <https://doi.org/10.1177/14614456020040020101>
- Abdi, R., Rizi, M. T., & Tavakoli, M. (2010). The cooperative principle in discourse communities and genres: A framework for the use of meta discourse. *Journal of Pragmatics*, 42(6), 1669-1679. <https://doi.org/10.1016/j.pragma.2009.11.001>
- Abdollahzadeh, E. (2011). Poring over the findings: Interpersonal authorial engagement in applied linguistics papers. *Journal of Pragmatics*, 43(1), 288-297. <https://doi.org/10.1016/j.pragma.2010.07.019>
- Akbas, E. (2012). Exploring meta discourse in master's dissertation abstracts: Cultural and linguistic variations across postgraduate writers. *International Journal of Applied Linguistics & English Literature*, 1(1), 12-26.
- Al-Ali, M. N., & Sahawneh, Y. B. (2011). Rhetorical and Textual Organization of English and Arabic. *SKY Journal of Linguistics*, 24, 7-39.
- Aull, L. L., & Lancaster, Z. (2014). Linguistic markers of stance in early and advanced academic writing: A corpus-based comparison. *Written Communication*, 31(2), 151-183. <https://doi.org/10.1177/0741088314527055>
- Baratta, A. M. (2009). Revealing stance through passive voice. *Journal of pragmatics*, 41(7), 1406-1421. <https://doi.org/10.1016/j.pragma.2008.09.010>
- Becher, T., & Trowler, P. (2001). *Academic Tribes and Territories: Intellectual enquiry and the cultures of disciplines* (2nd ed.). Buckingham: Open University Press/SRHE.

- Bondi, M. (2009). Historians at work: Reporting frameworks in English and Italian book review articles. In *Academic Evaluation* (pp. 179-196). Palgrave Macmillan UK. https://doi.org/10.1057/9780230244290_11
- Bourdieu, P. (1977). Outline of a Theory of Practice. In *Cambridge Studies in Social and Cultural Anthropology* (R. Nice, Trans.). Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511812507>
- Bourdieu, P. (1990). *The logic of practice*. Stanford University Press.
- Bourdieu, P., & Thompson, J. B. (1991). *Language and symbolic power*. Harvard University Press.
- Cao, F., & Hu, G. (2014). Interactive meta discourse in research articles: A comparative study of paradigmatic and disciplinary influences. *Journal of Pragmatics*, 66, 15-31. <https://doi.org/10.1016/j.pragma.2014.02.007>
- Charles, M. (2006). The construction of stance in reporting clauses: A cross-disciplinary study of theses. *Applied Linguistics*, 27(3), 492-518. <https://doi.org/10.1093/applin/aml021>
- Crismore, A., & Others, A. (1993). Meta discourse in persuasive writing: A study of texts written by American and Finnish university students. *Written Communication*, 10(1), 39-71. <https://doi.org/10.1177/0741088393010001002>
- Dafouz-Milne, E. (2008). The pragmatic role of textual and interpersonal metadiscourse markers in the construction and attainment of persuasion: A cross-linguistic study of newspaper discourse. *Journal of pragmatics*, 40(1), 95-113. <https://doi.org/10.1016/j.pragma.2007.10.003>
- Dahl, T. (2004). Textual metadiscourse in research articles: A marker of national culture or of academic discipline? *Journal of pragmatics*, 36(10), 1807-1825. <https://doi.org/10.1016/j.pragma.2004.05.004>
- Dahl, T. (2009). *Author identity in economics and linguistics abstracts* (E. Suomela-Salmi, & F. Dervin, Eds., pp. 123-134). <https://doi.org/10.1075/pbns.193.08dah>
- Fu, X. (2012). The use of interactional metadiscourse in job postings. *Discourse Studies*, 14(4), 399-417. <https://doi.org/10.1177/1461445612450373>
- Gillaerts, P., & Van de Velde, F. (2010). Interactional metadiscourse in research article abstracts. *Journal of English for Academic purposes*, 9(2), 128-139. <https://doi.org/10.1016/j.jeap.2010.02.004>
- Giltrow, J. (2005). Modern conscience: Modalities of obligation in research genres. *Text-Interdisciplinary Journal for the Study of Discourse*, 25(2), 171-199. <https://doi.org/10.1515/text.2005.25.2.171>
- Holmes, J. (1990). Hedges and boosters in women's and men's speech. *Language & Communication*, 10(3), 185-205. [https://doi.org/10.1016/0271-5309\(90\)90002-S](https://doi.org/10.1016/0271-5309(90)90002-S)
- Hu, G., & Cao, F. (2011). Hedging and boosting in abstracts of applied linguistics articles: A comparative study of English-and Chinese-medium journals. *Journal of Pragmatics*, 43(11), 2795-2809. <https://doi.org/10.1016/j.pragma.2011.04.007>
- Hu, G., & Cao, F. (2015). Disciplinary and paradigmatic influences on interactional metadiscourse in research articles. *English for Specific Purposes*, 39, 12-25. <https://doi.org/10.1016/j.esp.2015.03.002>
- Hyland, K. (1996). Writing without conviction? Hedging in science research articles. *Applied Linguistics*, 17(4), 433-454. <https://doi.org/10.1093/applin/17.4.433>
- Hyland, K. (1998). *Hedging in scientific research articles* (Vol. 54). John Benjamins Publishing. <https://doi.org/10.1075/pbns.54>
- Hyland, K. (2000). *Disciplinary Discourses: Social Interactions in Academic Writing*. Longman, Harlow.
- Hyland, K. (2005a). *Metadiscourse: Exploring interaction in writing*. London: Continuum.
- Hyland, K. (2005b). Stance and engagement: A model of interaction in academic discourse. *Discourse Studies*, 7(2), 173-192. <https://doi.org/10.1177/1461445605050365>
- Hyland, K., & Jiang, F. (2016). Change of attitude? A diachronic study of stance. *Written Communication*, 33(3), 251-274. <https://doi.org/10.1177/0741088316650399>
- Hyland, K., & Tse, P. (2004). Metadiscourse in academic writing: A reappraisal. *Applied linguistics*, 25(2), 156-177. <https://doi.org/10.1093/applin/25.2.156>
- Kopple, W. J. V. (1985). Some exploratory discourse on meta-discourse. *College Composition & Communication*, 36(1), 82-93. <https://doi.org/10.2307/357609>

- Lee, J. J., & Deakin, L. (2016). Interactions in L1 and L2 undergraduate student writing: Interactional metadiscourse in successful and less-successful argumentative essays. *Journal of Second Language Writing*, 33, 21-34. <https://doi.org/10.1016/j.jslw.2016.06.004>
- Liao, M. T., & Chen, C. H. (2009). Rhetorical strategies in Chinese and English: A comparison of L1 composition textbooks. *Foreign Language Annals*, 42(4), 695-720. <https://doi.org/10.1111/j.1944-9720.2009.01050.x>
- Liu, L. (2005). Rhetorical education through writing instruction across cultures: A comparative analysis of select online instructional materials on argumentative writing. *Journal of Second Language Writing*, 14(1), 1-18. <https://doi.org/10.1016/j.jslw.2004.11.001>
- Lon, C. E., Tan, H., & Abdullah, A. N. (2012). Conveying Communicative Intent: Moves and Metadiscourse in Abstract Writing. *International Journal of Applied Linguistics and English Literature*, 1(7), 56-65. <https://doi.org/10.7575/ijalel.v.1n.7p.56>
- Lorés, R. (2004). On RA abstracts: From rhetorical structure to thematic organization. *English for Specific Purposes*, 23(3), 280-302. <https://doi.org/10.1016/j.esp.2003.06.001>
- Martín, P. M. (2003). A genre analysis of English and Spanish research paper abstracts in experimental social sciences. *English for Specific Purposes*, 22(1), 25-43. [https://doi.org/10.1016/S0889-4906\(01\)00033-3](https://doi.org/10.1016/S0889-4906(01)00033-3)
- McEnery, A. M., & Wilson, A. (2001). *Corpus linguistics: An introduction*. Edinburgh University Press.
- Mocanu, M. (2015). An empirical analysis of metadiscourse in the abstracts of Romanian accounting research articles. *Accounting & Management Information Systems/Contabilitate si Informatica de Gestiune*, 14(2).
- Moreno, A. I., & Suárez, L. (2008). A study of critical attitude across English and Spanish academic book reviews. *Journal of English for Academic Purposes*, 7(1), 15-26. <https://doi.org/10.1016/j.jeap.2008.02.009>
- Ning, Z. Y. (2008). A Genre-based Analysis of English Research Article Abstracts and the Linguistic Feature of Personal Pronouns for Financial Economics. *Online Submission*, 5(7), 62-65.
- Peacock, M. (2010). Linking adverbials in research articles across eight disciplines. *Ibérica*, 20, 9-33.
- Pho, P. D. (2008). Research article abstracts in applied linguistics and educational technology: A study of linguistic realizations of rhetorical structure and authorial stance. *Discourse Studies*, 10(2), 231-250. <https://doi.org/10.1177/1461445607087010>
- Reilly, J., Zamora, A., & McGivern, R. F. (2005). Acquiring perspective in English: The development of stance. *Journal of Pragmatics*, 37(2), 185-208. [https://doi.org/10.1016/S0378-2166\(04\)00191-2](https://doi.org/10.1016/S0378-2166(04)00191-2)
- Ren, H., & Li, Y. (2011). A comparison study on the rhetorical moves of abstracts in published research articles and master's foreign-language theses. *English Language Teaching*, 4(1), 162. <https://doi.org/10.5539/elt.v4n1p162>
- Ryshina-Pankova, M. (2011). Developmental changes in the use of interactional resources: Persuading the reader in FL book reviews. *Journal of Second Language Writing*, 20(4), 243-256. <https://doi.org/10.1016/j.jslw.2011.05.011>
- Samraj, B. (2005). An exploration of a genre set: Research article abstracts and introductions in two disciplines. *English for Specific Purposes*, 24(2), 141-156. <https://doi.org/10.1016/j.esp.2002.10.001>
- Tweed, R. G., & Lehman, D. R. (2002). Learning considered within a cultural context: Confucian and Socratic approaches. *American Psychologist*, 57(2), 89. <https://doi.org/10.1037/0003-066X.57.2.89>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).