

Interactional Metadiscourse and Author Identity Construction in Academic Theses^{*}

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Abstract—Based on Hyland's (2005) interactional metadiscourse model and the identity construction category proposed by Sun (2015), this study attempts to make a comparative analysis on the characteristics of the frequencies of interactional metadiscourse between Chinese masters' theses and international journal articles, as well as on the similarities and differences of author identity constructed with interactional metadiscourse. The findings are as follows: (1) from the frequencies of interactional metadiscourse, Chinese masters employ significantly fewer hedges, boosters, attitude markers, and self-mentions in their academic writing than international journal authors, while utilizing markedly more engagement markers. Regarding the subcategories of attitude markers, the two author groups possess notable differences in judgment markers, appreciation markers and affective markers, in which the significant difference in judgment markers is relatively low. The results suggest that the frequency of interactional metadiscourse utilized by Chinese masters in academic writing is inferior to that by international journal authors. (2) The identity categories constructed with interactional metadiscourse by the two author groups are in the descending order of researcher, interactor, and evaluator. Compared with international journal authors, significant differences are discovered in the identities of self-initiated interactor, other-initiated interactor, self-evaluator, other-evaluator, cautious originator, and confident researcher constructed by Chinese masters, whereas no difference is found in the careful advisor identity constructed by the two author groups. This study enriches the research of interactional metadiscourse from the perspective of identity construction, and the findings could provide references for improving students' awareness of academic writing.

Index Terms—interactional metadiscourse, author identity construction, academic theses

I. INTRODUCTION

Academic discourse is a vital medium for knowledge dissemination and academic communication. In English academic writing, the author conveys personal viewpoints as well as displays himself through the discourse, which is crucial to construct the author's identity. And successful academic writing requires textual authenticity, objectivity and interactive elements to supplement the textual proposition information and then remind readers of the author's standpoints, which is precisely the function of metadiscourse. It could be considered that how to construct appropriate identity through metadiscourse in English academic writing is also a vital manifestation of the author's academic pragmatic ability.

Due to the function of interactional metadiscourse in academic writing, such as reflecting the author's attitude, introducing the findings, and interacting with readers, interactional metadiscourse has gradually received more attention. For example, studies on interactional metadiscourse mainly concentrated on comparing disciplinary differences of academic discourse (Liu & Yang, 2021), or contrasting the textual differences between first-language authors and second-language authors (Jiang, 2015), or investigating the discourse features of novice and senior scholars (Jiang & Ma, 2018), or analyzing academic texts of different genres (Xin & Huang, 2010), or paying attention to the identity construction of self-mentions (Tang & John, 1999; Wang & Lv, 2017). However, few studies investigate the identity construction of interactional metadiscourse in academic discourse across different author groups. And in-depth discussions are also seldom conducted on other types of interactional metadiscourse for constructing author identity (e.g. Rahimivand & Kuhi, 2014). Therefore, to fill in the research gap, based on Hyland's (2005) classification of interactional metadiscourse and Sun's (2015) category of identity construction, the present study will conduct a comparative analysis on the similarities and differences of interactional metadiscourse and identity construction in research articles written by Chinese masters and international journal authors.

II. LITERATURE REVIEW

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A. Interactional Metadiscourse

Interactional metadiscourse refers to the means adopted by the author to evaluate and intervene in the propositional information. Thompson and Thetela (1995) reckoned that the term “interactional” tended to occur between writers and readers, with the writer attempting to affect readers’ reactions and behaviors. In terms of the classification of interactional metadiscourse, Hyland (2005) advanced that interactional metadiscourse contained five sub-categories, namely, hedges, boosters, attitude markers, engagement markers, and self-mentions. Specifically, hedges express the author’s cautious and incomplete commitment attitude, that is, it manifests that the author determines to acknowledge different statements and perspectives, thus retaining a full promise to the proposition (Hyland, 2005, p. 52), such as “*may, perhaps, possible*”. Unlike caution and self-deprecation implied by hedges, boosters permit authors to abandon other substitutes, eliminate conflicting views, and convey their confidence and certainty about their own views in the text (Hyland, 2005, p. 52), such as “*in fact, definitely*”. Attitude markers, which are mainly represented by adjectives, attitude verbs and adverbs, could evince the author’s affective attitudes towards propositions, such as consent, surprise, agreement, importance and so forth. However, no clear standard is stipulated for the definition and connotation of attitude markers. To cover the shortage, according to the classification of attitude system in appraisal system proposed by Martin and White (2005), attitude markers in this study are further subdivided into affective markers representing emotional reaction (e.g. *surprisingly, confident*), judgment markers showing judgment of humans’ behavior (e.g. *reasonable, fair*), and appreciation markers expressing evaluation of things (e.g. *important, worthwhile*). Engagement markers allude to the author instructing readers to participate in the discourse, interacting with readers, and forecasting their potential criticisms (Hyland, 2005, p. 151). Common markers contain “*consider, see ...*” and so on. In addition, Hyland and Jiang (2017) pinpointed that self-mentions (first-person pronouns) were powerful devices for authors to establish their identity and win discourse authority, such as first-person pronouns and possessive adjectives (such as *I, me, exclusive we*), and some indirect and implicit expressions (such as *the author, the researcher*). In the present study, Hyland’s classification of interactional metadiscourse is deemed as the analytical framework.

Through reviewing previous studies, it is found that three main categories of interactional metadiscourse study have been conducted in academic papers. (1) Comparative studies of interactional metadiscourse cross-language and cross-native language background. For example, Mu et. al (2015) produced a contrastive analysis on metadiscourse in English and Chinese applied linguistics journals. Lee and Deakin (2016) built three corpora to probe into the features of interactional metadiscourse in successful and unsuccessful English argumentative essays written by Chinese English learners, and then compared the discrepancies in the employment of interactional metadiscourse in the second language and first language argumentative essays. Yoon (2021) analyzed the utilization of interactional metadiscourse in papers written by Chinese, Japanese and Korean students from three aspects, including theme, L1 background and L2 proficiency. (2) Comparative studies of interactional metadiscourse among different disciplines. For instance, Hu and Cao (2015) analyzed the influence of disciplines and paradigms on interactional metadiscourse, intending to discover the differences in the employment of specific interactional metadiscourse between interdisciplinary and cross-paradigms. From the interpersonal perspective, Jiang and Hyland (2020) investigated the diachronic changes of interactional metadiscourse in academic papers of different disciplines. Similarly, Liu and Yang (2021) also conducted a diachronic study of metadiscourse in research papers across soft and hard disciplines. (3) Comparative studies of interactional metadiscourse in academic discourse. For example, Hyland and Tse (2004) probed into the metadiscourse applied in masters’ and doctoral English dissertations, who testified that both of them employed more interactive metadiscourse than interactional one. Xu (2015) made a comparative analysis on stance markers in English major dissertations and international journal articles, whose result was that language features employed by learners to express the author’s stance were significantly fewer. Wu and Paltridge (2021) delved into the differences in stance resources between Chinese masters’ and doctoral dissertations in applied linguistics.

B. Identity Construction in Academic Theses

Academic writing is regarded as an act of identity (Hyland, 2002), in which the identity could be reflected through metadiscourse (Tas, 2010). Ivanič (1998) pointed out that the author negotiated self-hood in the academic community through different discourse strategies in his writing. He argued that the writer’s identity was represented by rhetorical resources, who advanced three categories of identity in academic writing, including autobiographical self, discursive self, and authorial self. Furthermore, Sun (2015) proposed that the identity constructed by metadiscourse could be divided into three types from the pragmatic aspect, namely, interactor, evaluator, and organizer. The three types had their own specific pragmatic functions. This framework also provides conducive references for the identity framework of this study. However, what should be mentioned is that since the present study pays emphasis on the identity constructed by interactional metadiscourse, the identity of organizer will not be contained in the analytical framework. In this study, the role of researcher has been proposed by the author on the ground of research purposes. Therefore, the identity constructed by interactional metadiscourse could be further divided into three categories, namely, interactor, evaluator, and researcher.

As for the previous studies on identity in academic papers, two characteristics are presented. Firstly, it mainly concentrates on the discussion of self-mentions such as first-person pronouns, among which first-person pronouns (such as “*I*” and “*we*”) are the most widely investigated. For instance, Kuo (1999) counted the usage of personal pronouns in

scientific papers, who reckoned that the selection of personal pronouns reflected how authors considered themselves and their relationship with readers. Tang and John (1999) analyzed first-person pronouns exploited in Singapore college students' thesis writing, and further classified their functions into six categories, including representative, guide, architect, recounter of the research process, opinion-holder, and originator. Hyland (2002) figured out that students excessively hid their authorship in academic papers and seldom employed the first person singular. Furthermore, Li and Xiao (2018) made a comparative analysis of the similarities and differences in the utilization of first-person pronouns and their constructed identity in academic papers between Chinese scholars and native English speakers. Lou and Wang (2020) investigated the textual functions and author identity construction features of learners' self-mentions through the comparison between masters' theses of English learners and international journal papers, and discovered that learners failed to completely grasp how to utilize self-mentions to build author identity. Secondly, it pays insufficient attention to the identity construction of other interactional metadiscourse. For instance, Rahimivand and Kuhi (2014) probed into the constructive role of evidential markers, hedges, boosters, attitude markers and self-mentions in the abstract, introduction, methodology, results and discussion sections of academic papers in international journals of applied linguistics. Sun (2020) examined metadiscourse and the identity construction employed by Chinese masters in comparison with international journal authors, who found that Chinese masters constructed less identity through metadiscourse than international authors.

The previous study suggests that studies on interactional metadiscourse are increasingly deepened and the research objects more refined. However, interactional metadiscourse studies mainly concentrate on Chinese masters' or doctoral theses, with less attention paid to the differences with journal articles. Furthermore, the studies on the construction of author identity by self-mentions are richer, but the research on the construction of identity of other interactional metadiscourse resources is relatively inadequate. On the ground of this, this study will center more on the differences in the use of interactional metadiscourse and their identity construction between Chinese masters' theses and international journal articles, to systematically grasp the use of interactional metadiscourse among Chinese masters.

III. RESEARCH DESIGN

A. Research Questions

This study intends to answer two questions:

- (1) What are the characteristics of the frequencies of interactional metadiscourse utilized by Chinese masters and international journal authors in academic theses?
- (2) What are the similarities and differences in the author identity types constructed with the above interactional metadiscourse by the two author groups?

B. Corpora

Two corpora are self-built in this research, including Master Theses Corpus (MTC) and International Journal Articles Corpus (IJAC). The corpora are selected randomly from empirical theses in applied linguistics published from 2016 to 2020. MTC is composed of Chinese masters' theses in CNKI. The international journal articles are chosen from the top six international journals regarding Impact Factor released by Web of Science, including *Applied Linguistics*, *The Modern Language Journal*, *Language Learning*, *Language Teaching Research*, *English for Specific Purposes*, and *TESOL Quarterly*. To ensure the comparability of the two corpora, 20 masters' theses and 40 journal articles are selected respectively. And all selected papers are written by a single author. The final size of the two corpora is 319,782 and 316,417, respectively.

C. Research Procedures

The present study is carried out through three main steps, including (1) considering sentences as the analysis unit, mark interactional metadiscourse in MTC and IJAC by using UAM Corpus Tool. (2) Based on the first step, annotate identity types constructed by interactional metadiscourse marked above. And it is worth noting that each type of identity is counted and annotated merely once in a sentence. To ensure the reliability and accuracy of corpus annotation, the cross-validation method will be adopted in this study, and the final results are highly consistent. (3) Count the frequencies of interactional metadiscourse subcategories and those of their identity subtypes in MTC and IJAC. Results are reported in raw and normalized frequency (per 100,000 words). (4) Conduct data verification and compare similarities and differences in the application of interactional metadiscourse and their identity construction between the two author groups combined with the concrete examples.

IV. RESULTS AND DISCUSSION

A. Interactional Metadiscourse in IJAC and MTC

Table 1 displays the overall frequency of interactional metadiscourse in IJAC and MTC. It could be observed that 6949 cases of interactional metadiscourse are totally identified from the two corpora through manual analysis and annotation, with 4053 samples (1267.4 cases per 100,000 words, a proportion of 58.3%) in the IJAC and 2896 samples (915.2 cases per 100,000 words, a proportion of 41.7%) in the MTC respectively. It is apparent that interactional

metadiscourse presents a higher frequency in international journal articles than in Chinese masters' theses, and there is a significant difference in the use of interactional metadiscourse in the two corpora (Loglikelihood = 181.5, $p = 0.000 < 0.001$). The result demonstrates that international journal authors utilize more interactional metadiscourse than Chinese masters in academic writing, which could be interpreted that international journal writers are more conscious of using linguistic and rhetorical devices to actively build relationships with their readers (Guo & Ma, 2016).

TABLE 1
OVERALL FREQUENCY OF INTERACTIONAL METADISOURSE IN IJAC AND MTC

Corpora	Raw frequency	Normalized frequency	Percentage
IJAC	4053	1267.4	58.3%
MTC	2896	915.2	41.7%
Total	6949	2182.9	100%

To probe into the specific characteristics of the employment of interactional metadiscourse in masters' theses and international journal articles, the similarities and differences of each interactional metadiscourse resource utilized by the two author groups will be discussed below. The frequencies and descriptive statistics of each subcategory of interactional metadiscourse are exhibited in Table 2. The following enters the detailed discussion and analysis.

(a) *Hedges in IJAC and MTC*

TABLE 2
COMPARISON OF INTERACTIONAL METADISOURSE BETWEEN IJAC AND MTC

Interactional metadiscourse	IJAC		MTC		Loglikelihood	P-value
	Raw frequency	Normalized frequency	Raw frequency	Normalized frequency		
Hedges	1584	495.3	932	294.5	164.1	0.000***
Boosters	935	292.4	653	206.4	47.4	0.000***
Attitude markers	539	168.6	253	80.0	102.7	0.000***
Judgment	38	11.9	20	6.3	5.5	0.019*
Affective	141	44.1	74	23.4	20.5	0.000***
Appreciation	360	112.6	159	50.3	77.8	0.000***
Engagement markers	430	134.5	728	230.1	-80.7	0.000***
Self-mentions	564	176.4	330	104.3	59.5	0.000***

(Note: * $p < 0.05$; *** $p < 0.001$)

Table 2 presents that the frequency of hedges wielded by international journal authors (occurring 1584 times) is much higher than that by Chinese masters (occurring 932 times), which could be also represented as 495.3 times versus 294.5 times per 100,000 words respectively. Loglikelihood test shows that hedges employed by the two author groups own a significant difference (Loglikelihood = 164.1, $p = 0.000 < 0.001$). These results are congruent with that of Qin and Chen (2013), who found that Chinese students had slightly lower hedges than journal article authors (10.2:14.7 per 1000 words) in a comparison between Chinese engineering graduate students' conference papers and high-level academic journal articles. Moreover, it is also discovered that among the five subcategories of interactional metadiscourse, hedges are the most frequently used resource, similar to the results in the study of L2 successful and less-successful argumentative essays (e.g., Lee & Deakin, 2016) and those in published research articles (e.g., Hyland, 2005). These results evince that Chinese masters and international journal writers both prefer to utilize hedges to cautiously express their own standpoints, increase their credibility, and provide an open dialogue for readers. However, Chinese masters' mastery of hedges is still inferior to that of international journal authors. This may be because in English writing teaching, teachers often unknowingly give students the wrong impression that English academic writing should require direct assertions, instead, the employment of hedges could actually weaken these assertions (Wishnoff, 2000). The following is an example contracted from IJAC.

- (1) A **possible** explanation is that PSTM capacity **may** tap into the skills necessary for the establishment of stable, long-term mental representations of novel phonological material.

[IJAC-MLJ02]

In the above example, the juxtaposition of two hedges "*possible*" and "*may*" indicates that the writer attempts to make his explanation more acceptable and avoid being criticized by readers. It is clear from this example that hedges convey the writers' reservations about the truth and definiteness of the proposition and express their unwillingness to make a complete commitment to the proposition.

(b) *Boosters in IJAC and MTC*

Table 2 also demonstrates the frequency of boosters in IJAC and MTC and the values of statistical significance tests. As suggested in this table, boosters appear 935 times in IJAC, i.e. 292.4 cases per 100,000 words, while they occur 653 times in MTC, i.e. 206.4 cases per 100,000 words, revealing that Chinese masters utilize noticeably fewer boosters than international journal authors in their academic papers. The loglikelihood test also testifies this result, demonstrating that

two author groups possess a significant difference in applying boosters (Loglikelihood = 47.4, $p = 0.000 < 0.001$). These differences reside in that international journal writers have a more explicit epistemic attitude towards the propositions than Chinese masters. They seem to prefer to choose boosters to demonstrate their affirmative voice so that the innovativeness of their research findings is fully highlighted. This result is inconsistent with that of Qiu and Ma (2019), whose research found that Chinese masters utilized more hedges and boosters than doctoral and expert authors in applied linguistics. The reason for the differences may be that, in the current academic community, experienced scholars, for purpose of highlighting the certainty of their research and the acceptance of their opinions in the academic community, will resort to boosters to emphasize the accuracy of their research results and attract readers to accept their views. However, novice authors, who have lower status and discourse power in the academic community, will be hesitant and unconfident to emphasize their own claims and avoid the use of boosters in their academic writing to respect the standpoints of their research field (Xu, 2015). There are some instances extracted from the two corpora.

- (2) Differences *found especially* in clause boundary pause durations, with G1 producing longer pauses than G2 in both L1 and L2, could reflect G2's more efficient use of the planning time.

[IJAC-MLJ04]

- (3) In this study, the author *found* that many students would add or delete the verb "be" in their English writings.

[MTC19]

The verb "*found*" and the adverb "*especially*" in example (2) collectively illustrate the differences in clause boundary pause durations, which implies that the author promotes the interaction between readers and himself by attracting readers' or scholars' attention to those differences. In example (3), the booster "*found*" follows the abstract person pronoun "*the author*". It is important to note that boosters, especially when accompanied by first-person pronouns, could assist authors to increase their commitment to the claims of knowledge, assert their authority, and position themselves as privileged researchers within the disciplinary community (Hu & Cao, 2015).

(c) Attitude Markers in IJAC and MTC

As illustrated in Table 2, a significant difference exists in the overall frequency of attitude markers in IJAC and MTC (Loglikelihood = 102.7, $p = 0.000 < 0.001$). Attitude markers in international journal papers occur 539 cases (168.6 per 100,000 words), which are twice as many as those in Chinese masters' theses (totally 253 cases, 80.0 per 100,000 words). This result is consistent with Xu's (2015), who found that Chinese learners (70/million words) utilize attitudinal adverbs significantly less than international scholars (110/million words), indicating that learners are not adept at expressing personal emotions and attitudes directly. Similarly, the present study also manifests that experienced authors are more likely to make objective evaluations of propositions or ideas in academic papers, and more consciously employ language devices to actively construct relationships with readers. In contrast, Chinese authors possess less language awareness and fewer devices, but more implicit personalities, and in most cases do not clearly convey their cognitive and emotional attitudes (Guo & Ma, 2016).

Considering the three categories of attitude markers, the author notices that congruent with international journal authors, Chinese masters employ the most appreciation markers, followed by affective markers, and the least judgment markers. Furthermore, with regard to the frequencies of three subcategories, judgment markers, affective markers, and appreciation markers are utilized 20 times, 74 times, and 159 times respectively by Chinese masters, all of which are less than those by international journal authors. And Loglikelihood tests also signify that Chinese masters have significantly fewer affective markers (Loglikelihood = 20.5, $p = 0.000 < 0.001$) and appreciation markers (Loglikelihood = 77.8, $p = 0.000 < 0.001$) than international journal authors. This implies that Chinese masters may be uncomfortable or nervous when explicitly marking personal attitudes in their writing, so they seldom utilize attitude markers. It is also possible that authors consider explicit emotional positions as the expression of subjectivity rather than objectivity, which conflicts with their academic writing norms (Lee & Deakin, 2016). Furthermore, the frequency of judgment markers are applied less by Chinese masters than by international journal authors, and a significant difference is also discovered in the two author groups (Loglikelihood = 5.5, $p = 0.019 < 0.05$). The results are in accord with Sun's (2020), who found that Chinese masters employed obviously fewer judgment markers than international journal authors. It could be interpreted by the phenomenon that the overuse of judgment markers in academic writing does not meet the requirements of objective and rigorous academic discourse. The objectivity of academic discourse demands authors to evaluate the study itself, including the content, significance, or results of the study, rather than expressing the author's emotion or judging his behavior (Sun, 2020).

In (4)-(6) the author gives some detailed examples of three types of attitude markers.

- (4) *Unfortunately*, there is a dearth of research on second language learning among adult migrants in naturalistic settings. (Judgment marker)

[IJAC-AL03]

- (5) *Interestingly*, Table 3 reveals that there were no significant relationships between verbal GWD characteristics and motivated behavior. (Affective marker)

[IJAC-LTR07]

- (6) The result is *consistent* with studies which found that Asian students showed higher academic anxiety level compared to western students and Chinese students showed more academic anxiety than American students. (Appreciation marker)

[MTC05]

As shown in example (4), the judgment marker “*unfortunately*” is utilized to evaluate the state of the current research, which reveals the insufficient research on second language learning among adult migrants. By highlighting the deficiency, the author emphasizes the importance of his study and guides readers to pay attention to his research results. The expression “*interestingly*” in example (5), deemed as an appreciation marker, manifests the writer’s surprise at the result, and explains the unanticipated findings to readers. In example (6), the adjective “*consistent*” belonging to appreciation markers as well, predominantly compares the writer’s present study with the previous study to figure out the similarities. In the above examples, readers are invited to engage the text and share the writer’s attitude towards the propositions, which could be beneficial to narrow the distance between writers and readers.

(d) *Engagement Markers in IJAC and MTC*

Table 2 explicitly displays a significant difference in engagement markers between the two corpora (Loglikelihood = -80.7, $p = 0.000 < 0.001$). In other words, the frequency of engagement markers is significantly higher in masters’ theses than in journal papers, with 728 occurrences in masters’ theses (230.1 cases per 100,000 words) compared to 430 occurrences in journal papers (134.5 cases per 100,000 words). This result is in line with Sun’s (2020), who found that Chinese masters employed significantly more engagement markers than international journal authors, suggesting that they were likely to interact with readers by referring to others. The obvious high frequency of engagement markers in masters’ theses signifies that more and more Chinese masters are influenced by objective writing styles, and are reluctant to interact with their interlocutors in an explicitly direct or personal way (Hyland & Jiang, 2016). Below are examples of engagement markers in the two corpora.

- (7) As *we* know, Argument Diagramming is a knowledge visual tool of thinking, and it can help students clarify their thoughts, hackle the composition structure, and improve the writing efficiency.

[MTC12]

- (8) *Of course*, socioaffective factors can rise and fall without necessarily changing L2 development.

[IJAC-MLJ01]

The personal pronoun “inclusive *we*” in example (7) is recognized as a reader pronoun. The readers are invited into the text to acknowledge the function of Argument Diagramming proposed by the writer. The expression “*of course*” in example (8) indicates that the writer perhaps shares the knowledge of socio-affective factors with readers. The readers could only agree with the author by building on what has already been tacitly acknowledged. By this explicit reference, the author constructs himself and his readers as members of the same academic community (Hyland & Jiang, 2016).

(e) *Self-Mentions in IJAC and MTC*

Contrary to engagement markers, self-mentions could help authors manifest their status in the discourse, promote themselves, and establish, maintain, and realize the interpersonal function of interaction with readers. From Table 2, it can be summarized that self-mentions employed by Chinese masters are significantly fewer than those by international journal authors (Loglikelihood = 59.5, $p = 0.000 < 0.001$). This result is consistent with that of Mur-Dueñas (2007), who also found that American-based scholars were more likely to present their authorial identity by self-mentions in the academic community. Respective corpora examples are presented in (9)–(10).

- (9) In this section, *I* will first present the two qualitative dimensions of metacognitive judgments’ accuracy that were identified in this study.

[AL05]

- (10) And in her final revision draft, *we* found that she followed her peers’ advice to change “develop” into “advance” and “promote” into “enhance”.

[MTC06]

In example (9), the first-person pronoun “*I*”, referring to the writer of this research, could emphasize the author’s status in the discourse. And the first-person plural pronoun “*we*” in example (10) also indicates the author’s self. Note that masters’ theses are all written by a single author. The analysis of journal articles also indicates that authors usually employ first-person singular pronouns such as “*I/my/me*” to achieve the pragmatic function of self-mentions. Therefore, it could be expounded that the utilization of “*we*” in masters’ theses to reflect their participation in the text belongs to a kind of misuse. Sun (2015) also proposed that since the research results are found by Chinese masters themselves, such self-mentions not only fail to build an equal relationship between the author and readers but also prevent them from constructing a confident researcher identity. Also, this phenomenon indicates that on the one hand, Chinese masters intentionally imitate the academic norms formed by the co-authorship of journal papers, which causes misuse; on the other hand, they deliberately shun authorship and weaken the author’s visibility (Kuo, 1999).

B. *Identity Types Constructed by Interactional Metadiscourse in IJAC and MTC*

Academic writers adopt different linguistic strategies to interact with readers and construct their identity in academic discourse. From Table 3, Table 4, and Table 5, it can be seen that three main identity categories constructed by interactional metadiscourse in the theses of Chinese masters and international journal authors appear in descending order of frequency as researcher, interactor, and evaluator. A detailed analysis will be presented below.

(a) *Interactor Identity Constructed by Interactional Metadiscourse*

Table 3 illustrates the frequencies of subcategories of interactor identity in IJAC and MTC. The total number of interactors constructed by Chinese masters is slightly higher than that by international journal authors, showing 310.0 versus 277.1 per 100,000 words. A significant difference is also found in the two corpora (Loglikelihood = -5.9, $p = 0.015 < 0.05$), which is due to the fact that interactor identity is mainly constructed by engagement markers and self-mentions. Chinese students utilize more engagement markers and relatively fewer self-mentions than journal authors. Overall, the total frequencies of them are approximate, but the statistics show that a small difference occurs in the constructed interactor identity.

TABLE 3
COMPARISON OF INTERACTOR IDENTITY BETWEEN IJAC AND MTC

Interactor	IJAC		MTC		Loglikelihood	P-value
	Raw frequency	Normalized frequency	Raw frequency	Normalized frequency		
Self-initiated interactor	473	148.0	314	99.2	30.7	0.000***
Other-initiated interactor	413	129.2	667	210.8	-63.0	0.000***
Total	886	277.1	981	310.0	-5.9	0.015*

(Note: * $p < 0.05$; *** $p < 0.001$)

However, there are significant differences between self-initiated interactor and other-initiated interactor in both corpora (Loglikelihood = 30.7, $p = 0.000 < 0.001$; Loglikelihood = -63.0, $p = 0.000 < 0.001$). Self-initiated interactor appears 314 times in Chinese masters' theses, amounting to 99.2 cases per 100,000 words, while it occurs more in journal papers, i.e., 473 times (148.0 cases per 100,000 words). Other-initiated interactor appears 667 times (210.8 cases per 100,000 words) in masters' theses, while 413 times (129.2 cases per 100,000 words) in journal papers. This result is in line with Sun's (2020), who discovered that compared to international journal authors, Chinese masters constructed less self-initiated interactors and more other-initiated interactors. As Tang and John (1999) explained, student writers perceived themselves at the bottom of the academic hierarchy, and therefore, felt insecure about their own identity. Moreover, a significant difference is also tested between self-initiated and other-initiated interactors constructed by Chinese masters (Loglikelihood = 129.9, $p = 0.000 < 0.001$), demonstrating that Chinese masters express their interactor identity to interact with readers by referring to others rather than themselves. Conversely, international journal authors prefer first-person singular expressions to highlight the uniqueness and novelty of their study (Li & Xiao, 2018).

This study explicitly illustrates that self-mentions are the most visible marker of reflecting authorial identity, which is crucial in the author's personal promotion. The findings of Harwood (2005) support the utilization of self-mentions as a means of promotion, and therefore, are similar to the findings of this study. Furthermore, this study also finds that the employment of interactional metadiscourse to construct interactor identity by Chinese masters is different from that by journal authors, i.e., there is a deficit in the ability to trigger interaction with readers in Chinese masters. The reason is that Chinese masters have a tendency to express their viewpoints through academic groups or communities in the writing. To make their opinions more acceptable to readers, they avoid embodying self-hood identity (Hyland, 2002) and instead more highlight their collective identity (Li & Xiao, 2018). On the contrary, to emphasize their outstanding achievements in scientific research, international journal authors are more likely to highlight the innovativeness of their research results and individual contributions through self-mentions (Mur-Dueñas, 2007), especially in the international academic community, where highlighting self-hood identity is more conducive to the promotion of research results. Next, let us see some instances in the two corpora.

- (11) *Note that* by comparison, Yeldham (2018) had previously found no advantage for the processing of formula words over nonformula words. (Other-initiated interactor: Engagement marker)

[IJAC-LTR01]

- (12) In order to analyze the changes of students' EALA at the end of the semester, *the author* conducted independent samples t-test to the result of the post-questionnaire (*see* Table 11). (Self-initiated interactor: Self-mention) (Other-initiated interactor: Engagement marker)

[MTC01]

In example (11), the directive "*note that*" constructs the identity of the other-initiated interactor, which could attract the readers' attention to the findings of Yeldham, lead readers to engage the discourse, and facilitate the interaction with them. As shown in (12), "*the author*" constructs the self-initiated interactor, while "*see*" constructs the other-initiated interactor. The writer realizes multiple communicative demands in a single sentence by constructing the identity of self-initiated and other-initiated interactors. The phenomenon that the simultaneous construction of multiple identity types by the author under the particular communicative demands precisely indicates the dynamic selectivity and discourse construction of pragmatic identity (Chen, 2013).

(b) *Evaluator Identity Constructed by Interactional Metadiscourse*

Table 4 presents the differences of frequencies in the evaluator identity constructed by Chinese masters and international journal authors. Overall, Chinese masters construct 250 times evaluator identity compared to 530 times for

journal authors. In addition, the frequency of evaluator identity per 100,000 words appears much lower in Chinese masters' theses than in journal papers, shown in 79.0 cases versus 165.7 cases. The above data bespeaks that Chinese masters construct significantly fewer evaluators than international journal authors (Loglikelihood = 99.9, $p = 0.000 < 0.001$), indicating that Chinese masters are not adept at constructing identity by applying interactional metadiscourse such as attitude markers. Since the identity of the evaluator is constructed by appreciation markers, affective markers, and judgment markers, this result could be said to be accordant with the previously mentioned characteristic that Chinese masters are less likely to utilize attitude markers.

TABLE 4
COMPARISON OF EVALUATOR IDENTITY BETWEEN IJAC AND MTC

Evaluator	IJAC		MTC		Loglikelihood	P-value
	Raw frequency	Normalized frequency	Raw frequency	Normalized frequency		
Self-evaluator	446	139.5	209	66.1	85.2	0.000***
Other-evaluator	84	26.3	41	13.0	14.7	0.000***
Total	530	165.7	250	79.0	99.9	0.000***

(Note: *** $p < 0.001$)

In respect of subcategories of evaluator identity, a significant difference is discovered in the construction of self-evaluators between Chinese masters and international journal authors (Loglikelihood = 85.2, $p = 0.000 < 0.001$). This identity in Chinese masters' theses is 209 times, obviously fewer than in journal papers at 446 times, which could also be expressed as 66.1 versus 139.5 per 100,000 words. Similarly, Chinese masters construct significantly fewer other-evaluator identities than journal authors (Loglikelihood = 14.7, $p = 0.000 < 0.001$), which is shown as 13.0 versus 26.3 per 100,000 words. These results suggest that Chinese masters are loath to express their own emotions and attitudes in their theses, which are straightforwardly influenced by the norms of Chinese academic writing. In addition, congruous to the study of Sun (2020), a significant difference between self-evaluator and other-evaluator is also tested in Chinese masters' theses (Loglikelihood = 123.5, $p = 0.000 < 0.001$), revealing that when employing interactional metadiscourse to express evaluation, they chiefly evaluate their own research.

The analysis above enunciates that compared to international journal authors, Chinese masters construct fewer evaluators, where the self-evaluator identity is more frequent. These differences could be elucidated by the fact that Chinese masters are unlikely to express their own attitudes in their academic writing, but concentrate on presenting their opinions through data or facts. Based on the genre characteristics of academic writing, the author will employ fewer attitude words to avoid excessive subjective evaluation (Xu, 2015). Meanwhile, the avoidance of employing expressions with personal emotions and attitudes would be conducive to presenting a rigorous academic style and be more acceptable to readers. However, when establishing an equal communication relationship with readers, international journal authors are more prone to express their emotional attitudes to resonate with readers, promote readers' identification with the opinions, and guide the promotion of academic voices and achievements.

To differentiate the self-evaluator and other-evaluator in concrete contexts, the following are examples extracted from IJAC and MTC.

(13) It's *reasonable* to believe that motivation is the psychological basis for students' WTC. (Self-evaluator: Judgment marker)

[MTC17]

(14) It is *clear* that constructs like CAF cannot be observed on the basis of a single measure. (Self-evaluator: Appreciation marker)

[IJAC-MLJ01]

(15) *Surprisingly*, given the recent promotion by theorists of an interactive approach over instruction that focuses on strategies, no research has compared the two methods. (Other-evaluator: Affective marker)

[IJAC- TESOL06]

The adjective "*reasonable*" in (13) is deemed as constructing a self-evaluator, by which the writer appraises the function of motivation in his study without referring to others' research. The adjective "*clear*" in (14), an appreciation marker, could report the research result explicitly, and further arouse readers' attention to the research. This word evaluates the author's research results, therefore, it constructs the identity of the self-evaluator. The adverb "*surprisingly*" in (15) denotes the writer's surprise at the situation, explaining the disagreement between other researchers' previous approaches and the writer's present method to the readers. By referring to others' research, the writer makes an evaluation of this situation, so this kind of affective marker constructs the other-evaluator identity.

(c). Researcher Identity Constructed by Interactional Metadiscourse

As displayed in Table 5, similarities and differences are found in the researcher identity constructed by Chinese masters and international journal authors. Regarding the main category, the researcher identity constructed by Chinese masters is significantly less than that by international journal authors (Loglikelihood = 165.8, $p = 0.000 < 0.001$). Statistics also demonstrate that the number of the researcher identity constructed by journal authors is significantly high (2297 times, 718.3 per 100,000 words), followed by Chinese masters (1488 times, 470.3 per 100,000 words). This

testifies that journal authors are more adept at utilizing hedges and boosters to construct a researcher's identity than Chinese masters. With this identity, the author seems to cautiously propose his or her own propositions, provide readers with space for dialogue, or affirmatively express propositions and persuade readers to accept their propositions. This result is congruous with that of Rahimivand and Kuhi (2014), who found that hedges in applied linguistics journal papers were the most preferred stance markers, which provided a guarantee for the author's identity security; while boosters were the third most popular metadiscourse, which could strengthen the construction of the author identity.

TABLE 5
COMPARISON OF RESEARCHER IDENTITY BETWEEN IJAC AND MTC

Researcher	IJAC		MTC		Loglikelihood	P-value
	Raw frequency	Normalized frequency	Raw frequency	Normalized frequency		
Cautious originator	1225	383.1	687	217.1	147.8	0.000***
Careful advisor	174	54.4	171	54.0	0.0	0.950
Confident researcher	898	280.8	630	199.1	44.5	0.000***
Total	2297	718.3	1488	470.3	165.8	0.000***

(Note: *** $p < 0.001$; $p > 0.05$ shows no difference)

Specifically, the author finds that cautious originator constructed by hedges is significantly different in the two corpora (Loglikelihood = 147.8, $p = 0.000 < 0.001$), but the careful advisor identity constructed in the two corpora is similar in frequencies and has no significant difference (Loglikelihood = 0.000, $p = 0.950 > 0.05$). The reason is that to emphasize the rigor and rationality of the research results, journal authors seem to pay more attention to explaining the results carefully, while Chinese masters are not sufficient in the awareness of utilizing hedges. Hedges, the most vital type of interactional metadiscourse, play a decisive part in the construction of identity. Authors need to strike a difficult balance between claiming their propositions and respecting the dialogue with readers (Rahimivand & Kuhi, 2014). Therefore, Chinese masters and journal authors are both prone to construct the cautious originator identity. Moreover, it is found that the identity of confident researcher constructed by boosters also has a significant difference in the two corpora (Loglikelihood = 44.5, $p = 0.000 < 0.001$). This is in accord with the results discussed above that journal authors utilize more boosters than Chinese masters. It manifests that boosters are conducive to strengthening the construction of authorial identity under the influence of arguments and evaluation of the author's academic ability by academic community members (Rahimivand & Kuhi, 2014). It is important to note that cautious originator constructed by hedges in masters' theses is more obvious than careful advisor (Loglikelihood = 332.4, $p = 0.000 < 0.001$). This suggests that Chinese masters exploit hedges to mainly construct the identity of the cautious originator, and further expounds that hedges could express the author's commitment or uncertainty to the propositions (Hyland, 2005), leaving some space for readers to engage the text to some degree. For instance,

(16) One *might* expect nonnative English speakers to be reluctant to provide their own nonnative model. (Cautious originator: Hedge)

[IJAC-TESOL05]

(17) Teachers *should* combine multimodal teaching method with traditional teaching method in their teaching practice. (Careful advisor: Hedge)

[MTC08]

(18) The present study *shows* that words with on-screen imagery are almost three times more likely to be picked up incidentally than words without imagery. (Confident researcher: Booster)

[IJAC-TESOL03]

In example (16), "*might*" is a modal verb for speculation. It is recognized as a hedge in this sentence, applied to put forward the writer's opinion cautiously, and anticipate the readers' potential oppositions. The hedge "*might*" in this example indicates that the writer attempts to speculate the possible objections and avoid constructing an irresponsible image, so we classify it into the cautious originator. The modal verb "*should*" in (17) is also considered as a hedge in this context, but different from the function of the hedge "*might*" in (16). The writer frequently exploits hedges like "*would*" and "*should*" to construct the careful advisor identity. The hedge in (17) usually occurs more frequently in the conclusion part aiming to prudently and tentatively provide suggestions for English teachers in future teaching. As manifested in example (18), "*show*" is an assertive expression utilized by the writer to confidently present the research results of the current study, and persuade readers to agree with his findings, so the confident researcher identity is constructed.

V. CONCLUSION

By comparing with international journal authors, this study describes and interprets the similarities and differences in the application of interactional metadiscourse and their identity construction in English academic writing by Chinese masters. The findings are that Chinese masters' use of hedges, boosters, attitude markers and self-mentions in academic

writing are significantly less than international journal authors, but engagement markers employ significantly. In addition, the frequencies of identity types constructed by two author groups with interactional metadiscourse in academic papers are in the descending order of researcher, interactor and evaluator. In terms of the identity subcategories, significant differences are tested between Chinese masters and journal authors in terms of the identities of self-initiated interactors, other-initiated interactors, self-evaluator, other-evaluator, cautious originator and confident researcher, however, no significant difference is found in the cautious adviser identity. These differences seem to be related to the writing guidance that Chinese students receive or to the writing patterns inherent in Chinese academia. The research results could be of great significance for enhancing students' English academic writing awareness and guiding teachers' English academic writing teaching.

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