Nominal Stance in Cross-disciplinary Academic Writing of L1 and L2 Speakers in Noun + that Constructions

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Background: Literature indicates that in academic writing, authors are expected to demonstrate a noticeable stance so that they can make their meaning clear. Therefore, differences between native and non-native writers along with cross-disciplinary academic writing assume great significance.

Purpose: The interactional, dialogic, and reflective nature of academic writing requires writers to utilize stance-establishing tools in their writing, the most prominent ones being stance nouns. In addition, the that-clause construction plays a vital role in conveying the author's stance. Studies that compare L1 Turkish writers of English and L1 English writers regarding academic writing are rather scarce. As such, the present paper aims to analyze L1 Turkish writers of English and L1 English writers in eight disciplines from natural and social sciences in terms of the use of stance nouns in that-clause constructions.

Methods: The study employs Jiang and Hyland's (2016) functional classification model in exploring the nominal stance in cross-disciplinary writing of L1 Turkish writers of English and L1 English writers. To this end, journals with high impact in eight disciplines from social and natural sciences were scanned and a total of 320 articles were included in the corpus. The social sciences included in the present study cover applied linguistics, history, psychology, and sociology while the natural sciences cover medicine, engineering, astronomy, and biology. In total, a corpus of 2.232.164 words was formed.

Results and Implications: The study found significant differences not only in terms of natural and social sciences but also in terms of L1/L2 distinction. In addition, a secondary purpose of the study was to see whether writers in social and natural sciences differed in terms of empiricist and interpretive rationality. The results indicated that writers in social sciences tended to use more status and cognition nouns, indicating that they tend to be more interpretive. With significant differences between Turkish and English writers from a cross-disciplinary perspective, the present study offers important insights into how writers weave their stance in academic writing. Moreover, the present study also confirmed that writers in social sciences, whether L1 or L2, tend to use more stance nouns compared with writers in natural sciences.

Keywords: corpus, L2 disciplinary writing, native speaker, non-native speaker, nominal stance, discourse markers

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INTRODUCTION

Linguists have long been nurturing a keen interest in what kind of linguistic tools writers employ to reveal their attitudes and judgments. A huge body of research indicates that the capacity to display ability in the use of appropriate stance in academic writing is viewed as essential (Charles, 2007; Hyland & Guinda, 2012; Gross & Chesley, 2012). Acquiring the ability to use stance elements in academic writing is understandably a difficult aspect for L2 writers (Tang, 2012). Literature seems to have paid due attention to stance expressions in terms of *hedges and boosters* (Wingate, 2012, Cao & Hu, 2014; Li & Wharton, 2012), *appraisal* (Lancaster, 2014), *engagement* (Jin, 2015; Liao, 2020) and *metadiscourse* (Hyland & Tse, 2005; Adel, 2006; Aull & Lancaster, 2014; Akbas & Hatipoğlu, 2018; Bal-Gezegin & Bas, 2020). Such studies produced sufficient data on the use of adverbs, adjectives, reporting verbs, or lexical bundles among markers of stance (Cobb, 2003). Nevertheless, as was pointed out by Jiang (2015), nominal stance constructions have received relatively little attention.

Literature offers evidence as to the influence of *discipline* (Hyland, 2005; Khedri, et al., 2013), *language/culture* (Loi & Lim, 2013; Mur Dueñas, 2011), and *genre* (Kuhi & Behnam, 2011, Alinasab et al., 2021) on metadiscourse. In addition, plenty of studies have been conducted on stance constructions devices such as adverbs, adjectives, modal verbs (Gabrielatos & McEnery, 2005; Gross & Chesley, 2012), and first-person pronouns (Işık-Tas, 2018; Lores-Sanz, 2011). What is more, stance has been studied concerning *theses* (Baratta, 2010; Charles, 2007; Jalali, 2017; Akbaş & Hardman, 2018), *university students' essays* (Jiang, 2015; Gardner & Han, 2018), and *research articles* (Jiang & Hyland, 2015; Yağız & Demir, 2015). Even though the epistemological and methodological assumptions about both paradigms are well-known by researchers, little attention has been paid to a comparison of the two paradigms in terms of metadiscourse use. By analyzing "noun + that" constructions, the present study aims to explore how L1 and L2 writers in different disciplines from social and natural sciences put their message across. The implementation of *that*-clause structure is frequent in academic writing, used to express stance or attitude (Biber, 2006; Jiang & Hyland, 2015; Man & Chau, 2019; Parkinson, 2013). It is hoped that the study will provide insights as to the use of existing knowledge in the use of nominal stance in cross-disciplinary writing from L1 and L2 perspective. Existing literature indicates that the use of stance elements is more common in social sciences, or soft sciences, compared to natural sciences, or hard sciences (see Çakır, 2016). Studies on academic discourse have also shown that writers tend to use different interaction patterns in social sciences (soft science) and natural sciences (hard science) (Hyland, 2001).

The "noun + that" structure is highly common in academic writing; nevertheless, it has not been studied extensively. This construction enables writers to express their stance by selecting a head noun. Even though specific registers and academic discourse receive considerable attention, comprehensive studies are rather scarce in this regard (Zhang, 2016). The role of disciplinary influences on stance and evaluation has been reported in the literature (see, Hyland & Tse, 2005). Therefore, the present study, with a corpus of 320 research articles (RAs) comprising both L1 and L2 writers, attempts to shed light on the differential use of stance nouns in "noun + that" constructions.

Stance in academic writing

Biber (2006, p. 99) defines stance as a way of displaying "personal feelings and assessments" that writers use for "... certain information, how certain they are about its veracity, how they obtained access to the information, and what perspective they are taking". According to Conrad and Biber (2000), the term stance is a generic term denoting personal feelings and assessments. Terms like *modality* (Halliday, 1985) or *evidentiality* (Chafe & Nichols, 1986), *voice* (Hirvela & Belcher, 2001), *authorial identity* (Ivanic, 1991), and *appraisal* (Martin & White, 2005) are also used in literature. Nevertheless, according to Jiang and Hyland (2015), writers, as they are establishing their stance, benefit from culturally available sources and tend to fit their choices within a particular community or discipline. Therefore, "any stance represents the writer's position, but it is also a position which reflects the epistemological beliefs and values of a community" (Jiang and Hyland, 2015, p. 2).Therefore, by revealing stance, writers both express their epistemic and affective viewpoints concerning knowledge and establish ties with their readers (Aull & Lancaster, 2014, Hyland, 2005a; Lee & Deakin, 2016). Stance is also a tool for writers to bridge the dialogic void for conveying their messages (Martin & White, 2005). Various studies indicate that the capacity to establish a particular stance is an indispensable element of effective writing in L2 (Aull & Lancaster, 2014; Lancaster, 2016; Lee & Deakin, 2016). All in all, as was pointed out by Hyland (2017), the ability to establish a stance is paramount in conveying meaning and making rhetorical decisions. As such, the study of stance and voice has been popular, in particular from the viewpoint of constructivism where social interaction is important (Hyland 2005b).Thus, in a sense, stance is a means for writers to demonstrate their perspectives, authoritativeness, or authorial presence. The underlying reason behind this is that to sound academic writers need not only the linguistic ability but also an awareness of rhetorical features like metadiscourse elements. What is more, academic discourse is also viewed as a socio-political process. The use of stance nouns also indicates how authors view their readers' needs or expectations. Therefore, as is pointed out by Hyland (2012), stance nouns are both for how authors position themselves and how close they feel to the community being addressed. In short, it can be said that any instance of stance involves proximity or the relationship between the writer and the community (Hyland, 2012).

"Noun + that" construction

"Noun + that" construction is one component of the noun complement construction, which includes structures like "noun + that clause", "noun + to-infinitive", "noun + of-prepositional/preposition" or noun + wh-clause". In the present study, "noun + that" construction was utilized as they are important markers of writers' stance. The importance of that + clause structures, especially "noun + that", was pointed out by prominent figures in the field (Jiang & Hyland, 2015; Hyland & Jiang, 2018). Specifically, Hyland and Jiang (2018) stated that these structures "… represent important rhetorical choices at the interface of lexis and grammar, revealing not only the authorial perspectives of writers … but also the material they comment on and the voice they adopt to do so." (p. 143).In "noun + that" constructions, there is a head noun followed by a *that*-clause. This construction is highly common in academic writing. The "noun + that" construction determines how authors evaluate and indicate their attitudes given in the *that*-clause (Hyland & Tse 2005). According to Halliday & Matthiessen (2014), the "noun + that" construction is an embedded postmodifying clause. This construction makes it possible for authors to reflect their rhetorical choices by adding pre-modification as well. Head nouns like *point, assumption, approach, theories,* or *method* do not only organize discourse but are also remarkable indicators of the writer's stance. As can be seen, the meanings of these nouns are not clear by themselves; rather, they are explained in the "that clauses" that follow. Thus, they are called "stance nouns", implying the writer's point of view on the topic (Jiang & Hyland, 2015). Therefore, they are powerful tools since they reveal the stance of a writer (Jiang, 2015).

Functions of stance nouns

The most commonly cited classification of stance nouns based on their function is that of Jiang and Hyland (2016). In the present study, this classification was preferred as it revolves around the functional aspects of stance nouns. In some previous classifications, for example, the word "advantage" is given as a "factual" noun. However, Jiang and Hyland (2016, p. 534) argue that the word "advantage" tends to express "quality", implying its function as an expression of the writer's positive evaluation of the following content (*cataphoric reference).*Jiang and Hyland (2016) categorized stance nouns into three broad categories: (1) entity, (2) attribute, and (3) relation. In general, *entities* refers to "metatext, or concrete instances of text". There are four types of stance nouns in the *entities* category, which are *text, event, discourse,* and *cognition*. In this category, *text* nouns refer to "metatext, or concrete instances of text" like *report*, *paper*, and *extract*. Nouns representing *events* are "occurrences of actions and processes or mention of real-world evidential cases", like change or process (p. 9). *Discourse* nouns are concerned with "verbal propositions and speech acts", like an argument or claim (p. 9). *Cognition* nouns are concerned with "beliefs, attitudes, and elements of reasoning", like a decision or idea (p. 9). Examples are as follows:Nouns in *object* category: report, paper, extract.

1. Nouns in *event* category: change, process, observation.
2. Nouns in *discourse* category: argument, claim, conclusion.
3. Nouns in *cognition* category: decision, idea, belief, doubt.

The second broad category of stance nouns is *attributes,* where nouns are thought to function as lexical units which include "writers' evaluations of the quality, status, and formation of entities" (p. 9). There are three groups of nouns in this category, namely (1) quality, (2) manner, and (3) status. The *Quality* nouns are about "whether something is admired or criticized, valued or depreciated, with assessments falling on a scale of plus or minus (p.9). Examples of such words include *advantage*, *difficulty*, and *danger*. The *manner* nouns refer to "the circumstances and formation of actions and states of affairs." (p.9). Examples include time, method, way, and extent. The *status* nouns are about "the author's judgments of epistemic, deontic, and dynamic modality (Palmer, 2001). Regarding this category, epistemic modality is about possibility and certainty with examples of likelihood and truth; deontic modality concerns obligation and necessity such as need and obligation, and dynamic modality denotes ability, opportunity, and tendencies such as ability, capacity, potential, and tendency.Thirdly, the last category is related to relations, involving nouns about relations like cause and effect. These nouns describe how writers conceptualize connections and relationships in conveying meaning (Jiang & Hyland, 2016).

LITERATURE REVIEW

Several studies have been conducted by Biber (e.g. Biber & Gray 2010, 2016; Biber, et al, 2011) which figured out that academic writing abounds in the use of nouns and phrasal modifiers such as attributive adjectives, nouns as nominal premodifiers, and prepositional phrases as postmodifiers.In terms of cross-disciplinary comparisons, Çakır (2016) conducted a study comparing the use of stance adverbs in the abstracts of various disciplines such as sociology, psychology, linguistics, physics, chemistry, and biology. The findings of Çakır's (2016) study show that native writers of English use stance adverbs more commonly than non-native writers. Çakır's study (2016) also found that writers in social sciences use more stance adverbs than natural sciences. Jiang and Hyland (2018), in their corpus-based study, found that metadiscursive nouns like *fact*, *analysis*, and *beliefs* and the "metadiscursive noun + post-nominal" clause patterns were significant methods in manifesting the writer's claim and establishing a "disciplinary stance" (p. 1)

Cross-disciplinary differences have been studied by several researchers. Cao and Hu (2014), for example, in their comprehensive study found that there are significant cross-disciplinary differences in the use of interactional and inter-

active metadiscourse elements, which, according to them, stem from contrasting epistemologies. Like many other studies, Cao and Hu (2014) also used Hyland's (2005) interactional and interactive framework.In a similar study, Jiang (2015) focused on a corpus-based comparative analysis of 366 Chinese university students with 82 American students. The results of this study showed that L2 students used noticeably fewer stance nouns, in particular in the event, discourse, and cognition categories. On the other hand, their (L2 writers) dexterity in using personal effect and pre-modifying stance through attitudinal adjectives and first-person possessives was remarkable. Similarly, the inability of L2 students in constructing stance was also reported by other studies (Lancaster, 2014; Wingate, 2012).Moreover, several significant studies conducted by Hyland involved stance features and metadiscourse in various disciplines. In one of them, for example, Hyland (2008) worked on 240 RAs from eight disciplines, including medical engineering, electrical engineering, marketing, philosophy, sociology, applied linguistics, physics, and microbiology. His findings indicated a huge use of hedges as a component of stance and engagement features. His findings also indicated that the use of stance and engagement markers abound in social fields compared to natural sciences. Applied linguistics, marketing, and philosophy were the fields found to include the highest frequency of hedges and boosters.

As such, the present study attempts to answer the following research questions:

1. What stance options are available in the academic discourse in social and natural sciences?
2. Do L1 and L2 writers differ in terms of nominal stance in social sciences?
3. Do L1 and L2 writers differ in terms of nominal stance in natural sciences?
4. Do L1 and L2 writers differ in terms of empiricist and interpretive rationality in both social and natural sciences?
5. Do L1 and L2 writers differ in terms of objectivity?

METHOD

Corpus and Databases

The total number of academic articles examined is 320 (160 social sciences and 160 natural sciences). Table 1 shows the data about the corpus used in the present study. The total number of words in the corpus is 2.232.164. The total number of words used by L1 writers is 1.230.491 and by L2 writers 1.001.673. The total number of words in social sciences is 1.285.627. The total number of words in the corpus of the natural sciences is 946.537. The numbers are presented in Table 1.

Inclusion and Exclusion Criteria

The present study is based on an academic corpus that was collected by the researchers by meticulous analysis of the literature. The corpus includes RAs from both social and natural sciences written by native and non-native speakers. The social sciences included in the study are sociology, applied linguistics, history, and media/communication. The natural sciences are biology, engineering, medicine, and astronomy. To facilitate comparison, a similar number of articles were selected from both native and non-native speakers, 10 native and 10 non-native authored articles. Articles were selected randomly. Care was taken to select single-authored articles to see the language use coherently. Researchers collect corpora based on the purposes of their focus, ranging from particular genres to registers of language (McEnery & Hardie, 2012). Therefore, the sizes of corpora may vary depending on the purpose. As for inclusion criteria, we have two guidelines. The first is that we included both research and review articles. Secondly, we selected one article from one author to provide variability. As for exclusion criteria, we did not include case reports, or letters to editors.

Data Analyses

In order to analyze, the concordance software *AntConc* [1](Anthony, 2011) was used. Further manual reading of concordance lines was also conducted so that we could improve the accuracy of the parsing. To ensure the reliability of the re-

Table 1
The corpus used in the present study

	Social sciences				Natural sciences			
	App. Ling.	**Soc.**	**Hist.**	**Psyc.**	**Bio.**	**Med.**	**Ast.**	**Eng.**
L1 writers	142.481	158.061	202.143	162.378	138.487	134.386	146.167	146.388
L2 writers	128.203	198.748	182.856	110.757	74.545	68.570	109.402	128.592
Total	270.684	356.809	384.999	273.135	213.032	202.956	255.788	274.980

[1] Anthony, L. (2011). *AntConc (Version 3.2.2)* [Computer Software]. Tokyo, Japan: Waseda University.

sults, both the authors conducted the coding process at a monthly interval. The inter-rater reliability was found to be 0.89.

Procedure

For each discipline, peer-reviewed high-quality international journals were scanned. Along with the suggestions provided by disciplinary experts, care was also taken to include journals that are indexed by major indexes in each field (*SSCI, SCI-expanded, AHCI, ESCI, SCOPUS* for social sciences). In the selection of journals, experts from each field were consulted, and based on the opinions of experts a list of journals was prepared for each field. Later, further analysis was conducted for the suitability of each journal. The descriptions of journals on journals' websites were examined to see whether they are clear representatives of each field. After identifying as many journals as possible, the next step was to determine the articles. Only research articles were included in the corpus. Both general and specific journals were included. For example, in applied linguistics general journals like *Applied Linguistics* or *Annual Review of Applied Linguistics* as well as specialized journals such as *International Journal of Language and Communicating Disorders* and *Language Planning* were included in the analysis.

RESULTS AND DISCUSSION

Stance Nouns as Head Nouns

This part strives to answer the first research question, namely which stance nouns are prevalent in the academic discourse in social and natural sciences. The total number of "noun + that" constructions in the corpus of the present study is 2540, nearly 8 stance nouns per article. The results are given in Table 2, with the total number of items and items per 10.000 words. The total number of stance nouns under the category of *entity* is 1.371 (53.97% of total stance nouns) and under the category of *attribute*, it is 957 (37.6% of total stance nouns). The total number of stance nouns for the category of *relation* is 212 (8% of total stance nouns)

For the *entity* category, the most commonly used stance nouns were under the *cognition* category (n=403,) followed by the *discourse* category (n=338). The least used stance nouns were stance nouns about *event* (n=305). As for the *attribute* category, the most commonly used nouns were under the category of *status* (n=487) followed by *manner* (n=283). Table 4 also indicates that the most frequently used stance nouns by both L1 and L2 writers are status (n=487, 19,17% of total stance nouns) and *cognition* nouns (n=403, 15,86 of total stance nouns). The frequent use of stance nouns in *status* and *cognition* categories indicates that both L1 and L2 writers tend to make interpretive comments in the process of establishing their stance (Schmid, 2000). This endorses Halliday and Martin's (1993) argument that nominalization is common in academic writing.

When it comes to the distribution of stance nouns in social sciences in terms of L1 and L2 writers, the findings can be seen in Table 3. This section tries to answer the second research question, specifically whether L1 and L2 writers in social sciences differ in nominal stance. Table 3 indicates that there are remarkable differences between L1 and L2 writers in terms of stance noun use in social sciences. The total number of stance nouns in *entity* for L1 writers is 666 (26,6% of total stance nouns) and for L2 writers 334 (13% of total stance nouns). Log-likelihood values (90,55, $p < 0.001$) indicate that L1 writers tend to use stance nouns in *entity* much more than L2 writers. In the category of *entity*, the number of stance nouns in cognition used by L1 writers is 221 and L2 writers are 80, overwhelmingly high for native speakers (Log-likelihood = +59.30 $p < 0.001$). As for the *discourse* category here, the number of stance nouns used by

Table 2

"Noun+that" constructions across disciplines

	Total No of items	Items per 10.000 words	% of total stance words
Entity	1.371	6.14	53.97
Objects	325	1.45	12.79
Event	305	1.36	12.00
Discourse	338	1.51	13.30
Cognition	403	1.80	15.86
Attribute	957	4.28	37.67
Quality	187	0.83	7.36
Status	487	2.18	19.17
Manner	283	1.26	11.14
Relation	212	0.94	8.34
Total	2540	11.37	100

L1 writers is 171, and for L2 writers is 94 (Log-Likelihood = +17.68, p < 0.001). L1 writers also used more stance nouns in *event* (Log-Likelihood=+16.77, p < 0.001) and the *objects* categories (Log-Likelihood=+7.77, p < 0.001). Examples (6)-(8) exemplify *cognition*, *event*, and *discourse* categories.

(6) Indeed, the idea that societal multilingualism is a hindrance to development can still be encountered today. (N, Applied Linguistics)

(7) It was this rather serendipitous observation that led to Cannon's interest in the emotional effects of stimuli on internal functions. (N, Psychology)

(8) At the same time, the argument that there is no longer a clear distinction between families, friends, and kin is frequently made, apparently reflecting changed practices of solidarity or connectedness (N, Sociology)

When the *attribute* category is taken into consideration, it is seen that the total number of stance nouns used by L1 writers is 463 and by L2 writers is 302. L1 writers use stance nouns significantly more than L2 writers (Log-Likelihood=+23,91, p < 0.001). Mainly, the difference is in the category of *manner* as exemplified in (9). The number of stance nouns used by L1 writers in the *manner* category is 144 and by L2 writers 60 (Log-Likelihood=+30.07, p < 0.001). For the *status* and *quality* categories, however, L2 writers used slightly more stance nouns (Log-Likelihood=-0.25, p < 0.001, Log-Likelihood=-1.81, p < 0.001, respectively).

(9) In the same way that film can create its own reflective account of history, its own historiography or 'historiophoty', so artworks can be a valuable way to analyse (not just describe) the past. (N, History)

This section tries to answer the question of whether L1 and L2 writers in natural sciences differ in the use of nominal stance nouns. Table 4 presents the results regarding stance noun use in natural sciences in terms of L1 and L2 writers. L1 writers use more stance nouns both in the *entity* category (n=294) and the *attribute* category (n=208) than L2 writers (Log-Likelihood=+30,79, p < 0.001, Log-Likelihood=+23.51, p < 0.001, respectively). The biggest difference in the category of *entity* was observed in stance nouns in cognition as can be seen in (10). The number of stance nouns in the *cognition* category used by L1 writers is 83 and L2 writers 19 (Log-Likelihood=+22,02, p < 0.001). The next category where L1 writers use more stance nouns is the objects category as exemplified in (11). The number of total stance nouns used by L1 writers in this category is 61 and L2 writers 18 (Log-Likelihood=+10.82, p < 0.001).

(10) The article gives a detailed account of Geoffroy's transformist theories and supports his belief that changes in the composition of the atmosphere drove the transmutation of species. (N, Biology)

(11) This interconnectedness must also, as a consequence, produce data that can be evaluated continuously.(N, Engineering)

Under the *attribute* category, L1 learners use more stance nouns for all the sub-categories. For quality, for example, the number of stance nouns used by L1 writers is 43 while this number is only 1 for L2 writers (Log-Likelihood=+36.58, p < 0.001) as exemplified in (12). Finally, as for the *relation* category, L1 writers also exceed L2 learners in terms of stance nouns use (Log-Likelihood=+19.24, p < 0.001). In total, the total number of stance nouns used by L1 writers is 560, and by L2 writers 195. L1 writers tend to far exceed L2 writers in stance noun use (Log-Likelihood=+69,26, p < 0.001).

Table 3

"Noun+that" frequencies in social sciences per 10,000 words (%of total)

	N	NN	LL
Entity	10 (666)	5.36 (334)	+90.55
Objects	2.24(149)	1.56(97)	+7.77
Event	1.87 (125)	1.01(63)	+16.77
Discourse	2.57(171)	1.51 (94)	+17.68
Cognition	3.32(221)	1.28 (80)	+59.30
Attribute	5.58 (463)	4.85 (302)	+23.91
Quality	1.06 (71)	1.16 (72)	-0.25
Status	2.36 (157)	2.73 (170)	-1.81
Manner	2.16 (144)	0.96 (60)	+30.07
Relation	1.36 (91)	0.83 (52)	+8.24
Total	16.94 (1220)	11.04 (688)	+115.76

Table 4
"Noun+that" frequencies in natural sciences per 10,000 words (% of total)

	N	NN	LL
Entity	5.17 (294)	2.78 (109)	+30,79
Objects	1.07 (61)	0.47 (18)	+10.82
Event	1.69 (96)	1.33 (51)	+1.93
Discourse	0.95 (54)	0.49 (19)	+6.51
Cognition	1.46 (83)	0.49 (19)	+22.02
Attribute	3.67 (208)	1.95 (75)	+23.51
Quality	0.76 (43)	0.02 (1)	+36.58
Status	1.92 (109)	1.33 (51)	+4.82
Manner	0.99(56)	0.60 (23)	+4.25
Relation	1.02 (58)	0.28 (11)	+19.24
Total	9.86 (560)	5.01 (195)	+69,26

In sentence 13, the use of metadiscursive noun of a related category can be seen.

(12) The solid line fits and all the data for each camera are normalized to the value that makes each fit equal to unity at 2002.16. (N, Astronomy, attribute quality)

(13) It was perhaps for this very reason that in these and his later writings he felt the need to distinguish the grounds of his practice so strongly from such 'empirics' (or indeed from practicing apothecaries). (N, medicine) relation)

These findings indicate that in social sciences L1 writers seem to use more stances nouns than L2 writers compared to natural sciences. For example, the total number of stance nouns used by L1 writers in social sciences is 1220 and by L2 writers 688 (Log-Likelihood=+115,76, $p < 0.001$). In natural sciences, however, although L1 writers exceed L2 writers in terms of stance noun use (Log-Likelihood=+69,26, $p < 0.001$), the rate is not as high as in social sciences. To be more particular, a huge difference was observed in the *objects* category. For social sciences, the total number of stance nouns used by L1 writers in the *objects* category is 666 whereas this number is 334 for L2 writers (Log-Likelihood=+90,55, $p < 0.001$). L1 writers seem to have almost doubled L2 writers in this category. For natural sciences, this rate is not that high.

Empiricist and Interpretive Rationality

This section aims to answer the question of whether L1 and L2 writers differ in terms of empiricist and interpretive reasoning. As is known, empiricism refers to the view that the only way to attain knowledge is through our experiences, observations, or senses. Chafe and Nichols (1986) indicated that event, cognition, and status nouns reflect empiricism and interpretivism. The present study found that there are differences between social sciences and natural sciences in terms of status and cognition nouns. The total number of *status* nouns in social sciences is 327, and the total number of cognition nouns in social sciences is 301. The total number of status nouns in natural sciences is 102 and cognition nouns is 160. For comparison, the numbers were converted into items per 10.000 words. From this perspective, the rate of status nouns in social sciences is 2.54, and cognition nouns are 2.34. These rates are comparatively low in natural sciences. In natural sciences, the rate for status nouns is 1.07 and for the *cognition* nouns it is 1.69. These findings are presented in Table 5. This finding lends support to Schmid's (2000) proposition that "noun + that" construction is not only about objects category. Rather, the higher rates of status and cognition nouns in social sciences indicate that writers in social sciences tend to make more interpretive comments as they construct their arguments.In a similar vein, Chafe and Nichols (1986) put forward that stance nouns like *event* and *cognition* nouns are significantly related to empiricism and interpretive rationality, respectively. *Cognition* nouns were found to be more commonly used in social sciences by both L1 and L2 speakers. However, for the *events* category, it was found that in natural sciences they are used more frequently than social sciences. This finding is endorsed in the literature. In literature, some studies suggest that natural sciences or hard sciences depend more on empirical evidence in presenting their arguments (Jiang & Hyland, 2015). In the present study, the total number of event nouns in social sciences was 188 (1.46 per 10.000 words) and for natural sciences 147 (1.55 per 10.000 words).

Objectivity in Disciplines and Writers

This section tries to answer the question of whether there are differences between L1 and L2 writers in terms of objectivity. The nouns in the *attribute* category represent objectiv-

ity and impersonal evaluations. Hyland (2002) puts forward that in natural sciences writers avoid using personal evaluations in strengthening their points. In a similar vein, it is generally hypothesized that in social sciences writers tend to stick to personal interpretations and intellectual reasoning (Charles 2007, Hyland 2005a). The results related to objectivity are given in Table 6. The table shows that the number of *attitude* nouns used by L1 writers in social sciences is 463 and by L2 writers 302, amounting to 765 attribute nouns for social sciences. The number of attribute nouns used by L1 writers in natural sciences is 208 and L2 writers 75. The total number is 283. The use of *attribute* nouns by writers in social sciences far exceeds the ones used in natural sciences (Log-Likelihood= +107.13, $p < 0.001$). This lends support to the idea that in social sciences writers employ more personal interpretations.

Within the scope of the study, L1 and L2 writers were compared in terms of their use of the *attribute* nouns. The results are presented in Table 7. As we can understand from the table, the number of *attribute* nouns by L1 writers is 463 and by L2 writers is 208. In total, the number of the *attribute* nouns used by L1 writers is 671. As for L2 writers, the number of the *attribute* nouns in social sciences is 302 and in natural sciences 95. In total, the number of attribute nouns used by L2 writers is 377. The log-likelihood was calculated as +35.07, indicating that L1 writers use more attribute nouns compared to L2 writers. This can be interpreted as L1 writers being more objective in academic writing.

DISCUSSION

The discussion above indicates that academic writing is an arena where writers' intentions, claims, and assumptions come along in the form of stance and voice. To get heard, writers do their best to take "ownership of their work" (Jiang & Hyland, 2015, p. 20) in the accompaniment of epistemic and evaluative judgments about entities, attributes, and the relations between phenomena. The "noun + that" construction, as a noun complement structure, serves the function of stance by enabling writers to choose head nouns. The present study has examined the use of "noun + that" construction in cross-disciplinary L1 and L2 writing. "Noun + that" construction is particularly found to be noteworthy in marking the writer's stance on beliefs, attitudes, reasoning, or judgments of epistemic status (Jiang and Hyland, 2015, 2018).In the first place, looking at the general picture, the study found that the most commonly used stance nouns in the *entity* category were cognition nouns, followed by discourse nouns. In the attribute category, the most widely used stance nouns were status nouns. In general, writers preferred more entity nouns than attribute ones. To be particular, in social sciences the most common stance nouns were also under the entity category. In the

Table 5

The distribution of status and cognition for social and natural sciences

	Social sciences				Natural sciences			
	L1	**L2**	**Total**	**Items per 10.000 words**	**L1**	**L2**	**Total**	**Items per 10.000 words**
Event	125	63	188	1.46	96	51	147	1.55
Status	157	170	327	2.54	83	19	102	1.07
Cognition	221	80	301	2.34	109	51	160	1.69

Table 6

The use of attribute nouns in social and natural sciences

	Social sciences				Natural sciences			
	L1	**L2**	**Total**	**Items per 10.000 words**	**L1**	**L2**	**Total**	**Items per 10.000 words**
Attribute	463	302	765	5.95	208	75	283	2.98

Table 7

The objectivity of L1 and L2 writers

	L1 writers				L2 writers			
	Social	**Natural**	**Total**	**Items per 10.000 words**	**Social**	**Natural**	**Total**	**Items per 10.000 words**
Attribute	463	208	671	5.45	302	95	377	3.75

entity category, the most common ones were object nouns and discourse nouns. Under the attribute category, the most common stance nouns were status nouns and manner nouns. Such findings were reported in the literature. Çakır (2016), for example, found that L1 writers use more stance nouns than L2 writers. Furthermore, Çakır's (2016) study also found that stance noun use is more common in social sciences.Similar views were voiced by Akbaş (2012), who reported that English-speaking writers tend to produce more navigable and coherent texts through the use of more sentence connectors. Akbaş (2012) also showed that Turkish writers employed far less interactional metadiscourse in an attempt to evade revealing their authorial identity. Hyland (2005) endorses this idea suggesting that Anglo-American writers tend to use more organizational patterns to put across their messages.The present study found that L1 writers tend to use more stance nouns than L2 writers. What is more, it was found that writers in social sciences use more stance nouns than the ones in natural sciences, an insight which is reflected in the literature (Durrant, 2017; Gardner et al., 2018). The most frequently used stance nouns, both by L1 and L2 writers, were *status* and *cognition* nouns. This implies that both L1 and L2 writers depend on interpretive comments as they are establishing their stance (Schmid, 2000). The discussion above lays bare the relative inefficiency of L2 writers in adopting or efficiently maintaining a particular stance. With regard to this, noun complement structure as a stance construction in L2 writing must be underlined by the writing instructor (Jiang, 2015). Along with this, writing instructors are warned to integrate genre and register analysis because some registers like spoken may not be so dependent on noun complement structures.Another aim of the present study was to see whether there are differences in social and natural sciences in terms of empiricist and interpretive rationality. To do this, we checked specifically event, cognition, and status nouns as these are assumed to reflect empiricist and interpretive rationality (Chafe & Nichols, 1986). The results indicated that these stance nouns were more frequently used in social sciences by both L1 and L2 speakers. On the other hand, *event* nouns were found to be more commonly used in natural sciences. Similar findings were reported by other researchers in the literature (Jiang & Hyland, 2015). One prominent finding of the present study was that in social sciences writers, both L1 and L2, tend to use status and cognition nouns more than in natural sciences. As was indicated by Schmid (2000), the use of status and cognition nouns can be associated with more interpretive comments in building arguments. Therefore, we can say that writers in social sciences depend more on interpretation when building their arguments. This finding was also voiced by Jiang (2017). Similarly, Chafe and Nichols (1986) put forward that the use of event and cognition nouns signal empiricism and interpretive rationality, respectively. Moreover, Jiang and Hyland (2015) suggested that writers in natural sciences resort to event nouns more than social sciences as humanities and social sciences as "…empirical evidence is the primary mode of knowledge construction" (p. 20) in natural sciences. The present study found support for this proposition, indicating that the number of *event* nouns was more frequently used by both L1 and L2 writers in natural sciences. Hence, instruction in academic writing should focus on the elaboration of how to sound more empirical or interpretive. Additional practice should be done to help learners or writers on how to foreground empiricism.As for objectivity, the seminal work conducted by Jiang and Hyland (2018) sheds important light on the use of stance and evaluation in the form of the "that+clause" structure. Their study diachronically compared social (applied linguistics and sociology) and natural sciences (biology and electronic engineering) in terms of stance markers. Their findings are remarkable. In the first place, they indicated that there has been a less authorial voice in academic argumentation in most of the disciplines they studied, the biggest fall being in applied linguistics, where objectivity became prominent. The reason for the authors' partial or academic disguise can be attributed to the desire to sound more empiricist, increase objectivity, reduce personal interest, or get rid of faulty reasoning. In particular, their findings indicated that writers in applied linguistics mainly prefer to evade evaluations. This point also merits attention. Writers should be made aware of how to establish their stance in academic writing.

One point to mention in the comparison of L1 and L2 writers is that there is controversy regarding the use of L1 writers as ultimate reference points for English learning. However, there being no other possible reference point, L2 writers, not only students but also academicians, set their priority on native speaker competence (Adel, 2006). In the present study, we compared L1 and L2 writers, yet we did not set L1 writers as reference points to qualify L2 writers' RAs as adequate or sufficient. The comparison in the present study aimed to present a general picture of stance noun use. The results indicated that L1 writers tend to be more objective and use more stance nouns compared to L2 writers.One limitation of the study can be to include "noun + that" construction only. Some studies integrate "noun + to-infinitive" and "noun + preposition" structures (see Jiang & Hyland, 2015). The reason why we stuck to the "noun + that" structure is partly since "noun + that" construction is a common construction in academic writing and partly because it is viewed as an efficient way for writers to evaluate and indicate their attitudes to the information at hand (Hyland &Tse 2005). Another reason was the fact that we worked with a large corpus. Further studies can include "noun + to-infinitive" and "noun + preposition" to provide a larger picture of stance in cross-disciplinary writing of L1 and L2 writers.

CONCLUSION

The significance of authorial stance is increasing and receiving substantial attention from scholars as it allows writers to negotiate the acceptance of arguments and embrace

stances. The present study focused on the analysis of RAs, a significant component of academic discourse. RAs assume significance not only because they involve the objectives of authors but also institutions and maybe communities. The present study has found that there are differences between RAs written in different disciplines. Therefore, the study of RAs merits attention and it is likely to produce more insights not only from linguistic perspectives but also from a pedagogical perspective. Hence, the study of academic discourse is in its infancy despite the recent increasing attention. Therefore, more studies are needed on RAs to get a better understanding of academic discourse.

The significance of focusing on cross-disciplinary differences has long been on the agenda of researchers. Recent research has also underscored the significance of cross-disciplinary influences. As for objectivity, there has been a shift to being more objective in social sciences like sociology and applied linguistics, which is an interesting finding. To enlarge this point, future studies can specifically focus on how and why social sciences are becoming more objective.To conclude, it can be seen that "noun + that" construction as a stance marker enables writers to establish their perspective, communicate explicitly or implicitly with their readers, create a particular stance, or do their best to persuade their readers. It is hoped that the present study provided some insights into the cross-disciplinary academic writing of L1 and L2 writers. At least, it supported two important claims. The first one was related to the pursuit of objectivity in natural sciences. In the present study, this was endorsed. Moreover, the study also supported the claim that social sciences use more stance nouns and depend more on interpretive reasoning or evaluative judgments of writers compared to social sciences. Such findings indicate that stance is a fundamental and powerful component of academic writing. As such, it would be critical to suggest that nominal stance construction should be included in academic writing courses, with explicit instruction likely to offer affordances in equipped academic writers to set their stance. Studies such as the present one make it clear that metadiscourse elements like stance nouns are instances whereby writers reveal their interaction with the text, how they related to their readers, and how the text relates to itself. Therefore, although there are some controversial findings such as methodological flaws, ambiguities relating to borders of metadiscourse, or conceptual fuzziness, studies on metadiscourse provide insights into how writers construct their discourse. In addition, longitudinal studies must be conducted to see the dynamic development of stance noun use in academic writing.

DECLARATION OF COMPETING INTEREST

None declared. ■

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