

Modal Verbs in Research Article Abstracts in Applied Linguistics: Juxtaposing Discursive Practices of the Inner and Outer Circles of English

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Abstract

The article introduces and discusses a computer-assisted study that seeks to shed light on the frequency and use of the central modal verbs (*can, could, may, might, must, shall, should, will, would*) in research article (further: RA) abstracts in applied linguistics published in the Inner and Outer Circles of English, respectively. The study is informed by the construal of the Circles of English that are comprised of the Inner Circle, where English is spoken as the mother tongue (for example, the United Kingdom), the Outer Circle, where it is used as a second language in the former British colonies (for instance, Hong Kong, Malaysia, etc.), and the Expanding Circle (e.g., Japan), where English is spoken and taught as a foreign language (Kachru 48). In the construal of the Circles of English, the Outer Circle is regarded as a heterogeneous sociolinguistic space with fluid boundaries (Higgins 615) that affects the frequency and use of the central modal verbs in a variety of textual genres (Lee and Collins 501). Against this background, the study aims at identifying and analysing the frequency of the central modal verbs in a corpus of RA abstracts in applied linguistics published by international peer reviewed journals associated with the Outer Circle (one journal published in Hong Kong and one in Malaysia, respectively) and the Inner Circle of English (one journal published in the United Kingdom). The results

of the quantitative analysis of the corpus indicate that the most frequent modal verbs in the entire corpus are *can* and *may*, which function as hedging devices in the journals that are associated with the Outer and Inner Circles of English, respectively. These findings are discussed in the article through the prism of the construal of the Circles of English.

Keywords: modal verbs, research article abstracts, the Inner Circle of English, the Outer Circle of English

Introduction

The present article is inspired by *East-West Cultural Passage*'s emphasis on the cross-cultural perspectives in humanities that are associated with culturally and geographically diverse parts of the world (*East-West Cultural Passage*). In harmony with the journal's focus, the article introduces and discusses a study that seeks to explore potential differences and, perhaps, similarities in the frequency and use of modal verbs (for instance, *can*, *could*, *may*, *might*, *must*, *shall*, *should*, *will*, *would*) in research article (further – RA) abstracts in applied linguistics that are published in Hong Kong and Malaysia, which, as former British colonies, are associated with the so-called Outer Circle of the English language on the one hand, and in the UK that is considered to form the Inner Circle of English, on the other hand. The study is informed by the construal of the English language as a concentric structure that is comprised of the inner core, or the Inner Circle, with the countries where English is spoken as the mother tongue, for example, the UK (Kachru 48). It is posited that outside the Inner Circle of English there is the Outer Circle, which consists of the former British colonies (for instance, Hong Kong, Malaysia, etc.) that retain the use of English as an official language parallel to other languages (Seoane 2). In addition to the Inner and Outer Circles, Braj Kachru (49) discerns the Expanding Circle, which includes the countries

where English is taught and spoken as a foreign language without any official status, e.g., China (Xiao 421).

In the wake of Kachru's construal of the Circles of English, it is hypothesised in the present study that the Outer Circle with its heterogeneous sociolinguistic space and fluid boundaries (Higgins 615) affects the frequency and use of the central modal verbs in the genre of academic writing (Lee and Collins 501), in particular, RA abstracts. It should be noted that in line with the previous literature (Chen and Zhou 103387; Lorés 280), RA abstracts are treated in the study as a separate genre in its own right. Furthermore, the study is based upon a contention that RA abstracts constitute a critical gateway that provides an overview of the RA at hand and facilitates the readers' decisions concerning the relevance of an RA to their interests (Busa 4; Friginal and Mustafa 45; Swales and Feak 169). In other words, RA abstracts emblematises "the first port of call in search for relevant literature and readers' first encounter with a text" (Golebiowski 753). Consequently, RA abstracts should be written in an informative and neutral manner that not only summarises the article but also captures the reader's attention (Breeze 11).

Whereas RA abstracts should be written in a neutral and scientific style (Stotesbury 327), they, nevertheless, could be reflective of the linguo-cultural peculiarities of the respective Circle of English that they are written in (Ädel 147). The contention is in agreement with prior literature which argues that researchers, and academic writers in general, tend to "leave traces of themselves in their writing which may be linked to national as well as disciplinary culture" (Dahl 1807). The literature (Hu and Cao 2797) indicates that RA abstracts are thought to be indicative of the national and disciplinary cultures in the sense postulated by Trine Dahl (1807), as well as the culture associated with the use of English in accordance with the standard that is prevalent in the particular Circle of English at hand (Vassileva 83).

Whilst there is an abundance of previous studies that focus on cross-cultural and cross-linguistic variation in RA abstracts (Cao and Xiao 209; Escudero and Swales 49; Friginal and Mustafa 45; Lorés-Sanz 53), there is still insufficient research that examines

their variation, which is ascribed to the Circles of English and, in particular, the dissimilarities between the Inner and Outer Circles of English (Kohn 1). Moreover, there is a scantiness of recent research publications that focus on the juxtaposition of the central modal verbs in RA abstracts written in the Inner and Outer Circles of English (Salles-Bernal 87; Zhou, Wen, and Deng 87). Hence, the study aims to provide a deeper insight into the comparison of the frequency and use of the central modal verbs in English in the RA abstracts in applied linguistics published in the Inner (the UK) and Outer (Hong Kong and Malaysia, respectively) Circles. The study seeks to answer the following research questions (RQs):

RQ 1. What are the frequencies of the occurrence of the central modal verbs in the corpus of RA abstracts in applied linguistics published in the Inner (the UK) and Outer Circles (Hong Kong and Malaysia, respectively) of English?

RQ 2. Would there be potential differences in the frequency and use of the central modal verbs in the corpus of RA abstracts in RA that eventuate due to the discrepancies between the Inner and Outer Circles of English?

The article is organised as follows. Firstly, the peculiarities of the central modal verbs in Hong Kong English and Malaysian English as the representatives of the Outer Circle are outlined. Secondly, the variation in discourse of RA abstracts due to linguistic considerations is discussed. Thirdly, the present study is introduced in conjunction with the corpus, methods, results and their discussion. Finally, the article concludes with the summary of the findings and their implications to academic writing in English.

The Outer Circle of English: The Peculiarities of the Central Modal Verbs in Hong Kong English and Malaysian English

As previously mentioned, the study is based upon the construal of the Circles of English that are reflective of the relationship of the

inner core, first of all, the UK, to the other two Circles in terms of the colonial (i.e., the Outer Circle) vs. non-colonial (i.e., the Expanding Circle) dichotomy (Bolton 265; Kachru 48). Given that the British colonial power was comprised of a miscellaneous array of colonies, protectorates and dependencies, the Outer Circle of English is problematised as a mosaic linguo-cultural space that involves a diverse membership stretching from Beliz in Central America to Hong Kong in South-East Asia (Rajagopalan 60). The geographical spread of English coupled with the socio-cultural variables in the Outer Circle (Lee and Li 605) are thought to define its complex character (Li 2), which can be described in terms of several within-the-Outer-Circle groupings (Xiao 445). For instance, the literature points to the similarities between Hong Kong English and Singapore English on the one hand and Indian and Sri Lankan Englishes on the other hand (Wee 481). Furthermore, it is posited that the Outer Circle is composed of the varieties of English (Salles-Bernal 87) that have adapted themselves to the local realia by developing their own distinctive linguistic features (Kortmann and Szmrecsanyi 1142).

The distinctive linguistic features of the Outer Circle of English are marked by the lexico-grammatical input from the local languages that contribute to the nativisation of a local variety of English (Imm 451; Porto 73-74; Schneider 8-9). The literature posits that any variety of the Outer Circle of English is characterised by the series of lexical, semantic, and/or syntactic innovations and peculiarities (Ki 2; Villalibre 186) that, in particular, are associated with the frequency and distribution of the central modal verbs (Hashim 45; Lee and Jun 345). For instance, it has been established that the modal verbs *may* and *can* are used less frequently in the Outer Circle, especially in Indian English, compared to the Inner Circle of English (Lee and Jun 345). However, in Malaysian English (MalE), which belongs to the Outer Circle, usually only *can* and *must* are used (Hashim 64). It is posited that in MalE, sentences often begin with the modal *can*, since the subject pronouns are often dropped (Hashim 64).

Presumably, the impoverished repertoire of the modal verbs in MalE (Hashim 65) is accounted by the fact that *could* and *would* are not taught in Malaysian primary and secondary educational contexts (Mukundan and Khojasteh 84). Similarly, *might* and *shall* are hardly mentioned in the English textbooks used in Malaysian schools (Khojasteh and Kafipour 68). Consequently, it is, perhaps, not surprising that *can* and *may* appear to be among the most frequent modals that are used in academic writing in English by Malay university students (Kader, Begi, and Vaseghi 151).

In contrast to MalE, the frequency of the central modals in Hong Kong English (HKE) converges on that of British English (Ki 22). For instance, the use of *must* in HKE is reported to be mostly epistemic, just like in British English (Ki 22). Moreover, the literature indicates that Hong Kong university students employ the central modals in a native-like manner, at least as far as their academic writing is concerned (Qian and Pan 33). Similarly, Jackie Lee and Peter Collins (501) have found that the use of the central modals in HKE is reflective of that in the British English due to its continuing influence on HKE. In particular, John Milton (94) demonstrates that *should* is similarly distributed in academic writing by university students in Hong Kong and the UK. However, Hong Kong university students tend to overuse *can*, *will*, and *must* both in oral and in written modes of communication (101).

It follows from the prior literature that whereas both HKE and MalE belong to the Outer Circle of English, they are characterised by the differences in the distribution and use of the central modal verbs. Presumably, the differences are likely to occur in academic writing, in particular, in RA abstracts in applied linguistics, which are published in academic journals that are located in Hong Kong and Malaysia, respectively. Prior to exploring this assumption further, it seems relevant to dwell upon a possible source of variation in RA abstracts due to linguistic-cultural variables.

Discourse of RA Abstracts: Linguo-Cultural Differences

So far, we have established that the use and distribution of the central modal verbs differ between the Inner and Outer Circles of English, as well as within the varieties of the Outer Circle itself. In addition to the differences caused by the varieties of English and disciplinary variation (Dahl 1807), the literature reports that the frequency and use of the central modal verbs in RA abstracts is indirectly affected by variation in academic writing in English that arises due to a host of linguo-cultural differences (Escudero and Swales 51). The presence of the linguo-cultural differences in RA abstracts is manifested by the following two dimensions: i) culture in its broad sense, which is conceptualised as intellectual, emotional, creative, and worldview characteristics of an academic writer's milieu (Romanovska et al. 118), and ii) linguistic repertoire, which is reflective of an academic writer's mastery of the conventions associated with academic writing, proficiency in English, and writing style (Behnam and Zamanian 41). Obviously, the academic writer's culture and linguistic repertoire seem to exert influence not only on the frequency and use of the central modals, but on other aspects of academic writing (for instance, directness and explicitness) associated with RAs in general and RA abstracts in particular (Hu and Cao 2795).

Cultural dimensions are argued to account for such linguo-cultural differences that involve directness and argumentation in RA abstracts produced by the academic writers who are non-native speakers (NNS) of English and English L1 academic writers (Al-Ali and Sahawneh 7; Escudero and Swales 66; Frigal and Mustafa 50; Hu and Cao 2795). Specifically, Arabic L1, Chinese L1, and Spanish L1 academic writers have been found to write more direct RA abstracts, which are characterised by the presence of a stronger epistemic commitment in contrast to their English L1 counterparts (Escudero and Swales 66; Hu and Cao 2795). In other words, whereas academic writers, who hail from the Inner Circle of English, would normally employ hedging in RA abstracts in order to offset a strong scientific claim, their NNS colleagues would

hedge less and express their findings discursively in a more direct way, which contributes to the effect on the authorial certainty and confidence (Hu and Cao 2795). Concurrently with that, however, RA abstracts written by NNS academic writers can be marked by a lower level of explicitness, which is attributed to the typical culture-related conventions of academic writing in the Middle East and Turkey (Çandarlı 12). Additionally, NNS writers' RA abstracts are thought to be typified by unsupported promotional claims (Al-Ali and Sahawneh 34) and boosters (Hu and Cao 2795), which are not usually used by English L1 academic writers in RA abstracts, even though there could be a substantial number of boosters in other parts of the RA, for instance, in the discussion section (Hyland "Hedges, Boosters and Lexical Invisibility" 180). Another substantial linguo-cultural difference rests with little reference to previous research in RA abstracts written by the NNS academic writers (Al-Ali and Sahawneh 34), whilst English L1 writers seem to do the opposite.

The linguistic repertoire of an academic writer is theorised to shed light on the linguo-cultural differences in RA abstracts written by NNS and English L1 academic writers (Buckingham 3; Çandarlı 14; Cao and Xiao 256; Rowley-Jolivet and Carter-Thomas 43). For instance, Spanish L1 NNS academic writers do not seem to employ such micro-linguistic means as the *inclusive we* in RA abstracts, whereas academic writers, who originate from the Inner Circle of English, use it abundantly (Martín 1). As far as the linguistic repertoire is concerned, NNS academic writers have been reported to over-use passive constructions in RA abstracts (Buckingham 2; Zhou, Wen, and Deng 87) in contrast to the writers whose L1 is English. One of the reasons that explains the over-use of the passive voice by Chinese L1 academic writers is associated with the excessive focus on this grammatical form in the EFL teaching and learning in China (Cao and Xiao 256). In addition to the over-use of passives (Zhou, Wen, and Deng 87), NNS academic writers' linguistic repertoire is characterised by syntactically complex sentences with multiple subordinate clauses (Buckingham 4). For example, Turkish L1 NNS academic writers, unlike their English

L1 colleagues, use long, syntactically complex sentences in their RAs and RA abstracts (Buckingham 3).

It is inferred from the previous literature that linguo-cultural differences are present in RA abstracts, either explicitly by virtue of following the academic writer's cultural patterns (Çandarlı 12), or implicitly by means of using the lexical and syntactic devices that are found in the academic writer's linguistic repertoire (Zhou, Wen, and Deng 87). However, the prior studies do not seem to pay sufficient attention to whether or not there would be linguo-cultural differences in terms of the central modal verbs in RA abstracts written by the NNS academic writers in Outer Circle of English and those of the Inner Circle. In the subsequent sections of the article, the study is presented and discussed, which seeks to provide further insight into how the central modal verbs in English are used in RA abstracts in applied linguistics by academic writers in the Outer and Inner Circles of English.

The Present Study

As previously mentioned, there is a scarcity of studies that examine the frequency and use of the central modal verbs, i.e. *can*, *could*, *may*, *might*, *must*, *shall*, *should*, *will*, *would*, in RA abstracts written in the Outer Circle of English. The present research aims at shedding light on this under-researched issue by means of investigating the frequency of the occurrence of the central modals in RA abstracts in applied linguistics that are published by several international peer-reviewed scientific journals associated with the Outer Circle of English, namely, *The Asian Journal of Applied Linguistics* in Hong Kong and *The International Journal of Language Education and Applied Linguistics* in Malaysia, and juxtaposing them with the respective frequencies that are found in the journal *Applied Linguistics* that is published in the UK (i.e., in the Inner Circle of English).

The study is informed by the prior literature (Higgins 615), which posits that Englishes in the Outer Circle constitute a heterogeneous sociolinguistic space with fluid boundaries that, in

turn, may exert influence on the frequency and use of the central modal verbs in a variety of textual genres (Lee and Collins 501), inclusive of academic writing. Following the literature (Hashim 64; Qian and Pan 33), it is hypothesised in the study that the frequency of the central modal verbs in RA abstracts in applied linguistics would differ within the Outer Circle due to its heterogeneity. Additionally, it is assumed that the frequency and use of the central modal verbs would be different between the sub-corpus of RA articles in applied linguistics published in the Outer Circle and the sub-corpus of the respective RA abstracts published in the Inner Circle of English. Following these assumptions, two RQs have been formulated in the study (see Introduction). To reiterate, the RQs aim at establishing and comparing the frequency of the occurrence of the central modal verbs in the corpus of RA abstracts in applied linguistics published in the Inner and Outer Circles of English.

Corpus

The corpus is comprised of the RA abstracts published in 2014 – 2021 by such scientific peer-reviewed outlets in applied linguistics, as *The Asian Journal of Applied Linguistics* (Hong Kong), *The International Journal of Language Education and Applied Linguistics* (Malaysia), and *Applied Linguistics* (the UK). The reason for choosing 2014 as the cut-off is explained by the fact that both *The Asian Journal of Applied Linguistics* (further – *AJAL*) and *The International Journal of Language Education and Applied Linguistics* (henceforth – *IJLEAL*) were established in 2014. Whilst *Applied Linguistics* (thereafter – *AL*) has a substantially longer publication history in contrast to *AJAL* and *IJLEA*, the procedure of the corpus collection factored in 2014 as the *AL*'s cut-off in order to synchronise the data garnered from all three journals. It should be emphasised that the journals' focus on applied linguistics render them compatible for the purposes of the present investigation. It should be noted that whereas *AL*, *AJAL* and *IJLEAL*, respectively, position themselves as international journals with global authorship and readership, the majority (51.1%), of *AL*'s authors hail from the

countries associated with the Inner Circle of English, whilst the predominant part of *AJAL*'s (48.3%) and *IJLEAL*'s (83.0%) authors originate from the countries of the Outer Circles of English. The descriptive statistics of the corpus, analysed in the statistical program Statistical Package for Social Sciences (SPSS) version 20.0 (IBM), are summarised in Table 1 below.

Table 1. The Descriptive Statistics of the Corpus

N	Descriptive Statistics	<i>AL</i>	<i>AJAL</i>	<i>IJLEAL</i>
1	Total N of abstracts	299	112	68
2	M abstracts	37.4	14	8.5
3	SD abstracts	4.9	4.4	2.9
4	Minimum abstracts	27	5	3
5	Maximum abstracts	43	20	12
6	Total N of words	47 751	18 477	12 997
7	M words	5 968.8	2 309.6	1 624.6
8	SD words	1 029.6	729.3	635.3
9	Minimum words	4 073	777	562
10	Maximum words	6 974	3 250	2 602

Methodology

The study employs the following methodology. First, the RA abstracts are accessed and downloaded from the journals' websites <https://caes.hku.hk/ajal/index.php/ajal/issue/archive> (*AJAL*), <https://journal.ump.edu.my/ijleal/issue/archive> (*IJLEAL*), and <https://academic.oup.com/applij/issue> (*AL*). Second, the RA abstracts from each respective journal are merged into respective files that are comprised of the RA abstracts on a yearly basis, i.e., per year, starting from 2014. For example, all RA abstracts from *AL* that are published in 2014 are merged into one single file, then all RA abstracts published by *AL* in 2015, 2016, . . . , 2021 are organised in one common file per year of publication. The same procedure is applied to all three journals published between 2014 and 2021, so that there are eight files with RA abstracts per journal. Third, the files are analysed in SPSS, version 20.0 (IBM) that

computes the descriptive statistics of the corpus, such as, for instance, means and standard deviations of RA abstracts (see Table 1).

Thereafter, the corpus that is comprised of the RA abstracts of all three journals (i.e., *AL*, *AJAL*, and *IJLEAL*) is analysed in the computer program AntConc version 4.0.11 (Anthony). The program calculates the frequency of the occurrence of the central modal verbs *can*, *could*, *may*, *might*, *must*, *shall*, *should*, *will*, *would* per journal per year as the so-called raw data, i.e. non-normalised data. Then, the raw frequencies per journal per year are entered in SPSS (IBM) in order to compute the respective means and standard deviations of the frequency of the occurrence of the central modal verbs per journal within the time frame 2014 – 2021. Finally, the raw frequencies of the modal verbs in the corpus are normalised in SPSS (IBM) per 10 000 words (see Table 6). The results of the corpus analysis are presented in the subsequent section of the article.

Results and Discussion

The analysis of the corpus in AntConc version 4.0.11 (Anthony) has yielded the frequencies of the central modal verbs in raw values (i.e., non-normalised data) per journal per year that are presented in Tables 2 – 4. In particular, Table 2 illustrates the frequencies of the central modals that have been identified in *AL*.

Table 2. The Central Modal Verbs in *AL*

N	Modal Verbs	2014	2015	2016	2017	2018	2019	2020	2021
1	<i>Can</i>	9	3	11	11	9	8	15	15
2	<i>Could</i>	0	1	0	0	4	2	3	3
3	<i>May</i>	8	4	13	6	7	5	4	4
4	<i>Might</i>	0	0	1	3	1	5	1	1
5	<i>Must</i>	1	0	1	0	0	1	1	1
6	<i>Shall</i>	0	0	0	0	0	0	0	0
7	<i>Should</i>	0	2	3	0	1	1	1	1
8	<i>Will</i>	1	1	4	1	2	3	5	5
9	<i>Would</i>	1	1	3	1	0	2	1	1

Table 3 below summarises the frequency of the occurrence of the central modal verbs in *AJAL* in 2014 – 2021.

Table 3. The Central Modal Verbs in *AJAL*

N	Modal Verbs	2014	2015	2016	2017	2018	2019	2020	2021
1	<i>Can</i>	5	3	1	7	11	6	2	3
2	<i>Could</i>	1	2	1	1	3	1	0	0
3	<i>May</i>	3	4	1	1	2	0	2	0
4	<i>Might</i>	0	0	2	0	2	1	2	0
5	<i>Must</i>	0	0	0	0	0	0	1	0
6	<i>Shall</i>	2	0	0	0	0	0	0	0
7	<i>Should</i>	1	2	0	2	1	1	2	0
8	<i>Will</i>	3	0	0	0	3	1	0	0
9	<i>Would</i>	0	3	0	2	1	0	2	0

Table 4 presents the frequency of the occurrence of the central modal verbs in *IJLEAL* in 2014 – 2021.

Table 4. The Central Modal Verbs in *IJLEAL*

N	Modal Verbs	2014	2015	2016	2017	2018	2019	2020	2021
1	<i>Can</i>	3	3	2	0	5	6	2	5
2	<i>Could</i>	2	2	0	0	2	3	1	0
3	<i>May</i>	0	0	4	0	0	1	1	0
4	<i>Might</i>	0	1	0	0	0	0	1	0
5	<i>Must</i>	0	0	0	0	0	0	0	2
6	<i>Shall</i>	0	0	0	0	0	0	0	0
7	<i>Should</i>	2	0	0	0	1	1	5	3
8	<i>Will</i>	0	1	2	0	0	1	4	0
9	<i>Would</i>	0	0	0	0	0	1	1	0

Table 5 provides the descriptive statistics that involve means (M) and standard deviations (SD) of the frequencies of the central modal verbs per journal within the time frame 2014-2021.

Table 5. Means and Standard Deviations of the Central Modal Verbs in the Corpus

N	Modal Verbs	AL	AJAL	IJLEAL
1	<i>Can</i>	M 10.12 SD 3.65	M 4.75 SD 3.03	M 3.7 SD 1.48
2	<i>Could</i>	M 2.6 SD 1.01	M 1.5 SD 0.76	M 2.0 SD 0.63
3	<i>May</i>	M 6.38 SD 2.87	M 2.16 SD 1.06	M 2.0 SD 1.14
4	<i>Might</i>	M 2.0 SD 1.52	M 1.75 SD 0.43	M 1.0 SD 0
5	<i>Must</i>	M 1 SD 0	M 0 SD 0	M 0 SD 0
6	<i>Shall</i>	M 0 SD 0	M 0 SD 0	M 0 SD 0
7	<i>Should</i>	M 1.5 SD 0.76	M 1.5 SD 0.5	M 2.4 SD 1.5
8	<i>Will</i>	M 2.75 SD 1.64	M 2.33 SD 0.94	M 2.0 SD 1.22
9	<i>Would</i>	M 1.43 SD 0.73	M 2.0 SD 0.7	M 1.0 SD 0

In what follows, the findings summarised in Tables 2 – 5 are discussed from the vantage point of the RQs in the study.

The Discussion of RQ1

RQ1 seeks to establish the frequencies of the central modal verbs in the corpus of RA abstracts in applied linguistics published by *AJAL* and *IJLEAL*, that are associated with the Outer Circle, and *AL*, which is representative of the Inner Circle of English. It is evident from Tables 2 – 5 that irrespective of the location of the journals in the Outer or Inner Circles of English, the most frequent modal verbs in all three journals, i.e. *AJAL* (Hong Kong), *IJLEAL* (Malaysia), and *AL* (the UK) are *can* and *may*. However, their distribution differs in the period from 2014 to 2021, as illustrated by Figure 1 below.

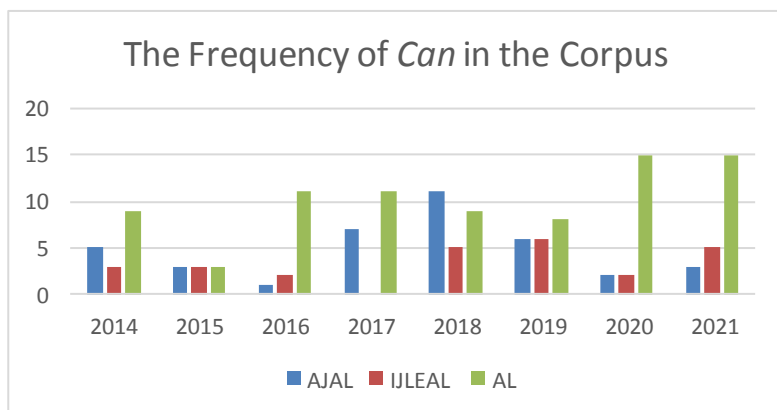


Figure 1. The Frequency of the Modal Verb *Can* in the Corpus

It follows from Figure 1 and Tables 2 – 5 that the distribution of *can* in *AJAL* and *IJLEAL* converges on that of *AL* in the journals' 2015 issues, whilst it differs substantially in other issues, especially in the years 2020-2021 (see Figure 1). We will address the differences associated with the discrepancies in the distribution of *can* in the subsequent section of the article, when we discuss RQ2, i.e. the second research question in the study. For now, however, it should be noted that the modal verb *can* seems to function in *AJAL* (see excerpt 1), *IJLEAL* (illustrated by excerpt 2), and *AL* (given in excerpt 3) in a similar manner, namely as a hedging device.

(1) Based on these findings, pedagogical implications are drawn suggesting how better instructional materials **can** be designed to enable learners to use additive connectives appropriately. (Kwan 161)

(2) The main aim of this paper is to explain how Cummins' 1981) model **can** be used in designing L2 tasks, and how the tasks affect learners' language use in the classroom. (Darmi 1)

(3) A CA-based sequential analysis reveals the embedding of the narrative in its local interactional setting while also displaying that

the act of narration **can** be a site for the enactment of resistance to societal discourses. (Sandhu 29)

As exemplified by excerpts (1) – (3), *can* represents a “mild” hedging device (Hyland “Talking to the Academy” 276) that is used by academic writers in order to express a fuzzy possibility (Lakoff 221), which is combined in (1) with tentativeness due to the co-occurrence with the present participle *suggesting* in the same sentence. Typically, in 100% of its occurrences, *can* appears to be associated with an uncertain possibility in the RA abstracts in *AJAL* and *IJLEAL*, where it is usually manifested by the verb phrase *can + be*, e.g. “. . . an online vocabulary game namely OnVac, which **can be** used to learn engineering and technology vocabulary” (Ali et al. 33). However, in contrast to *AJAL* and *IJLEAL*, the pragmatic use of *can* as a hedger in *AL* encompasses i) a fuzzy possibility that is similar to that of *AJAL* and *IJLEAL*, and ii) in the majority of cases (54.3%), a fuzzy possibility combined with tentativeness, as in excerpt (3). Notably, in RA abstracts in *AL*, *can* tends to co-occur in the same sentences with the lexical verb *to suggest*, which serves as an unequivocal index of hedging. This finding is exemplified by the following quote: “These findings **suggest** that the affordances of home and abroad contexts **can** shape learners’ linguistic development and use differently” (McManus, Mitchell, and Tracy-Ventura 136).

The second most frequent modal verb in the corpus is *may*. A relatively high frequency of *may* in the corpus provides support to the prior literature, which posits that *may*, as well as *can*, are used abundantly in the Outer Circle of English (Hashim 64). Whilst *may* occurs rather frequently relative to other modals (see Table 5), the analysis of the data reveals that its distribution is more consistent in *AL*. In contrast to *AL* and *AJAL*, however, *may* is less frequent and less evenly distributed in *IJLEAL*, as emblematised by Figure 2.

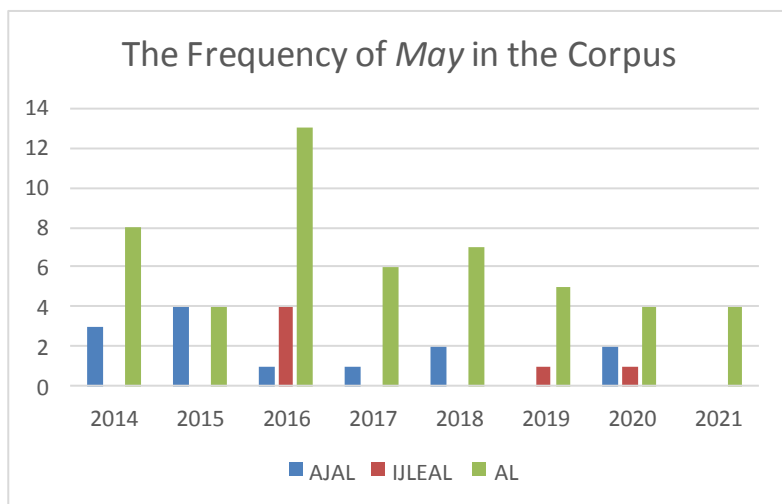


Figure 2. The Frequency of *May* in the Corpus

Despite the differences in the distribution of *may* that are presented in Figure 2, the central modal verb *may* fulfils the role of a hedging device in RA abstracts published by *AJAL* (excerpt 4), *IJLEAL* (excerpt 5), and *AL* (excerpt 6), as illustrated below.

(4) A solution ***may*** be for English teachers and science teachers ***can*** work together to develop school-based learning materials, using the language that suits their students' English proficiency. (Hu and Gao 170)

(5) The results show that incorporating literature teaching to assist students to acquire and internalize the use of language proficiency for creative writing ***may*** not be fully achieved under the national curriculum development. (Ling and Eng 1)

(6) This article provides a selective overview of recent event-related brain potential (ERP) studies in L2 morpho-syntax, demonstrating that the ERP evidence supporting the critical period hypothesis (CPH) ***may*** be less compelling than previously thought. (Steinhauer 393)

Recurrently in the corpus, *may* is employed in combination with *be*, i.e. in the verb phrase *may + be* as seen in (4) and (6), or *may + not be* as illustrated by excerpt (5). These findings lend support to the prior research (Hyland 183), which indicates that *may*, as well as *can*, are considered to be the most frequent linguistic forms of hedging that are favoured in English-medium scientific texts (Vassileva 83). So far, we can summarise that *can* and *may* as the most frequent modals in the corpus fulfil similar pragmatic roles of hedging in the RA abstracts in applied linguistics in *AJAL* and *IJLEAL* that are published in the Outer Circle, and in *AL*, which is associated with the Inner Circle of English. Concurrently with these findings, however, we observe in Tables 2 – 5 that there are differences in the frequencies of the other central modal verbs in the corpus. The differences are further discussed in the article in conjunction with another research question in the study, namely RQ2.

The Discussion of RQ2

As previously mentioned in the introduction, RQ2 aims at illuminating potential differences in the frequency and use of the central modal verbs in the corpus that could be attributed to the peculiarities of Outer Circle of English that are contrasted with those of the Inner Circle. It seems pertinent to address RQ2 by normalising the frequency of the occurrence of the central modal verbs in the corpus per 10 000 words, given that the total number of words in all three journals differ (*AL* = 47 751, *AJAL* = 18 477, and *IJLEAL* = 12 997). The data, which have been normalised in SPSS (IBM), are summarised in Table 6.

Table 6. The Frequency of the Occurrence of the Central Modal Verbs in the Corpus Normalised per 10,000 Words

N	Central Modal Verbs	<i>AL</i>	<i>AJAL</i>	<i>IJLEAL</i>
1	<i>Can</i>	17,0	20,6	20
2	<i>Could</i>	2,7	4,9	7,7
3	<i>May</i>	10,7	7,0	4,6
4	<i>Might</i>	2,5	3,8	1,5
5	<i>Must</i>	1,0	0,5	1,5
6	<i>Shall</i>	0	1,0	0

7	<i>Should</i>	1,9	4,87	9,2
8	<i>Will</i>	4,6	3,8	6,1
9	<i>Would</i>	2,0	4,3	1,5

The normalised frequencies of the central modal verbs in the corpus provide an additional insight into the interpretation of the data. As we have previously established, *can* and *may* are the most frequently used modals in the entire corpus, with *can* being similarly distributed among *AL*, *AJAL*, and *IJLEAL* (see Table 6). However, the frequency of the occurrence of *may* normalised per 10 000 words indicates that this modal verb is less eagerly employed in RA abstracts published by *IJLEAL*, whose authorship is associated, predominantly, with the academic writers who hail from the Outer Circle of English. Instead of being used as the second most frequent modal verb, as in the sub-corpus of RA abstracts published by *AL* and *AJAL*, *may* appears to be the fifth frequent modal in *IJLEAL* in terms of the normalised frequencies per 10,000 words, as illustrated by Figure 3.

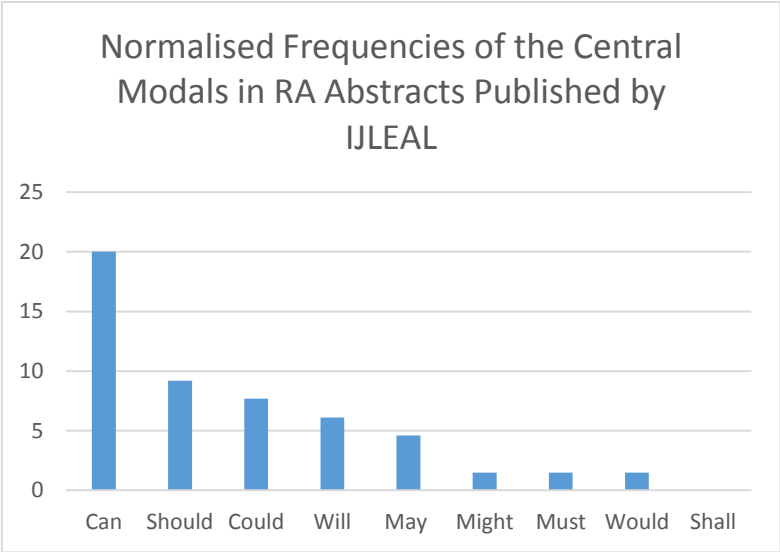


Figure 3. The Normalised Frequencies of the Occurrence of the Central Modal Verbs in RA Abstracts Published by *IJLEAL*

It is seen in Figure 3 that *may* is preceded by *will*, *could*, *should*, and *can*. Notably, the normalised frequencies of *should* and *could* in *IJLEAL* (see Table 6 and Figure 3) appear to be higher than the respective frequencies found in the RA abstracts in *AL* and *AJAL*. Given that *should* and *could* are typically associated with a strong manifestation of hedging (Hyland 179; Martín 12), the high frequency of these two modals is indicative of the *IJLEAL* academic writers' commitment to present their research in a more tentative manner. This finding is in contrast to the prior literature (Escudero and Swales 66; Hu and Cao 2795), which reports that academic writers, who hail from the Outer and Expanding Circles of English, produce RA abstracts that are marked by a strong epistemic stance. Judging from the data, it is not the case in the sub-corpus of the journals associated with the Outer Circle of English, i.e. *AJAL* and *IJLEAL*, which are characterised by a substantial presence of hedging that is represented by such modals, as *should*, *could*, *may*, and *can*. This finding is further supported by the statistical analysis of the raw data that seeks to juxtapose the frequencies of the central modals in *AJAL* and *IJLEAL* on the one hand, with *AL* on the other hand. Specifically, a paired samples t-test has been performed in SPSS (IBM) in order to compare means in *AL* and *IJLEAL*. The results indicate that the difference in the frequency of the central modal verbs between *AL* (Mean = 11.3, SD = 20.9) and *IJLEAL* (Mean = 1.4, SD = 1.9) is not statistically significant at $p \leq 0.05$, 95% confidence interval, [$t(16) = 1.967$, $p = .07$]. Similarly, the paired samples t-test has been applied to the modal verb means in *AL* (Mean = 11.3, SD = 20.9) and *AJAL* (Mean = 8.7, SD = 18.9). The results of the t-test indicate that the difference between *AL* and *AJAL* is not significant as far as the frequency of the central modal verbs is concerned at $p \leq 0.05$, 95% confidence interval, [$t(16) = .438$, $p = .0667$]. In light of the absence of statistically significant differences, we can argue that the frequencies of the occurrence of the central modal verbs in the scientific journals in applied linguistics published in the Outer

Circle (i.e., *AJAL* and *IJLEAL*, respectively) and the Inner Circle of English (e.g., *AL*) are similar.

Conclusions

Informed by the construal of the Circles of English (Kachru 48), the study, which is presented and described in the article, identifies the frequencies of the occurrence of the central modal verbs in the corpus of RA abstracts in applied linguistics published in the Outer Circle (Hong Kong and Malaysia, respectively) and juxtaposes them with the respective frequencies in RA abstracts published in the Inner Circle of English (the UK). Whilst the previous literature points to substantial linguo-cultural differences in RA abstracts written in the Inner and Expanding Circles of English (Al-Ali and Sahawneh 7; Escudero and Swales 66; Friginal and Mustafa 50; Hu and Cao 2795), the findings in the present study demonstrate that there are no statistically significant differences associated with the frequencies of the central modal verbs in the RA abstracts in applied linguistics that are published in scientific peer-reviewed journals in the Outer and Inner Circles of English.

Furthermore, it has been found that irrespective of the journals' relation to the Circles of English, the corpus in the study is characterised by the presence of the two most frequent modal verbs, namely *can* and *may*, which are used as hedging devices in the RA abstracts in applied linguistics that are published in the countries that belong to the Outer Circles, i.e. Hong Kong (*AJAL*) and Malaysia (*IJLEAL*), and in the UK (*AL*), which emblematises the Inner Circle of English. As far as the use of the central modal verbs as hedging devices is concerned, it should be noted that the modals as hedgers are amply employed in the journals whose authorship hails from the Outer Circle of English (*AJAL* and *IJLEAL*). Moreover, there is a tendency on the part of both *AJAL*'s and *IJLEAL*'s academic writers to use modal verbs as hedgers more frequently than, for instance, by *AL*'s academic writers, whose L1 is English. We can conclude that these findings are indicative of the similarities rather than differences in RA abstracts in applied

linguistics between the Outer and Inner Circles of English in terms of the frequency and use of the central modal verbs.

A possible explanation of the aforementioned similarities might be offered by the following contention. Arguably, the linguo-cultural peculiarities of the respective Circles of English are overridden by the disciplinary considerations related to stylistic and genre conventions of academic writing in applied linguistics. Specifically, hedging in applied linguistics is not only a typical genre-related feature, but it is also expected by the research community as a sign of belonging to the community, which an academic writer should follow and subscribe to (Hyland “Hedges, Boosters and Lexical Invisibility” 180). In harmony with this contention, it is, then, not actually surprising that academic writers from the Outer Circle of English emulate, or according to Ken Hyland (180), subscribe to the genre and register conventions that are adopted and widely spread in the Inner Circle of English. Given that one of the research community’s typical conventions is hedging that is manifested, among other linguistic means, by the use of modal verbs, it seems pertinent to conclude that academic writers in the Outer and Inner Circles of English converge in terms of the frequency and use of the central modal verbs that are employed in RA abstracts in applied linguistics.

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