Abstract

English academic writing has some specific characteristics that have been broadly defined by researchers. Nevertheless, English is undergoing constant modification as a result of being used as a lingua franca by international speakers. In this paper, my main objective is to determine whether language variation may be identified in cross-cultural communication when modal verbs of ability and possibility are used by speakers with different linguistic backgrounds. Furthermore, I would like to establish whether English writers tend to be more explicit than Spanish writers when both groups use English to communicate. The two corpora used in this study consisted of a set of fifty academic papers written in English by Spanish researchers and a set of fifty academic papers written in English by native English-speaking researchers. Both corpora were analysed to identify synchronic language variation in academic English when used by writers of different linguistic and cultural backgrounds. The results showed that there are disparities in the use of possibility and ability modal verbs and the conclusion reached is that writers with dissimilar mother tongues express volition through modal verbs differently in international journals.

1. Introduction

The processes of second language writing are influenced by the writers’ mother tongue, by linguistic conventions, and by genres, as researchers such as Charles (2007), Ozturk (2007), Samraj and Monk (2008), Durrant (2009), Hinkel (2002), Schleef (2009), Carrió-Pastor (2009, 2013), Carrió-
Pastor and Muñiz (2010), Carrió-Pastor and Candel Mora (2013) and Mauranen (2012, 2013a) have shown in their research. The aim of these analyses, which examine the use of a language by speakers with different mother tongues, is to demonstrate, through contrastive rhetoric, such as that which Kaplan (1966) and Connor (1996, 2002) have performed previously, that languages and writing traditions exhibit considerable synchronic variation.

Linguistic variation represents the different ways speakers of a language codify reality. In this vein, I believe human beings do not perceive concepts or express thoughts in the same manner. Consequently, their communication could vary according to their linguistic, cognitive, cultural and social background, following a functionalist approach. Thus, the rules for how language functions are not as general, as fixed or as evident as they are supposed to be when we study linguistic norms. Furthermore, if writers use an international language to communicate and it is not their mother tongue, their linguistic output may present variation due to the influence of their mother tongue.

In this study, I also consider the view that, although writers share the specialised knowledge of their field and are able to express their thoughts in a manner appropriate to an academic setting, they tend to use some processes from their mother tongues. As Duszak (1997: 9) points out, “Recent insights into academic writing have shown considerable variation in text characteristics across fields, languages and cultures. […] Among the most notable differences are field- and culture-bound disparities in global organization schemata of texts.” Since English is the predominant language for such communication, linguists have studied the challenges faced by non-native English speakers when writing academic English (Salager-Meyer 2011; Carrió-Pastor & Muñiz 2010; Huang 2010; Carrió-Pastor 2013; Mauranen 2012, 2013a, 2013b, 2013c). At the same time, language use reflects social, linguistic, cultural, educational and professional conventions. One example of these conventions can be seen in academic English, the specific area of research of this paper.

Academic English is nowadays considered the international language for communicating with researchers all around the world and this means that the mode of expression employed by researchers should possess shared linguistic features, including short sentences, domain specific vocabulary and simple and direct language structures (Carrió-Pastor 2005, 2008, 2013; Wright 2008). In fact, writers tend to employ some of the cultural conventions of their own culture, with this conclusion having been reached
by researchers such as Hinds (1987, 1990), Connor and Mauranen (1999), Hyland (2005, 2008, 2010, 2011), Qi and Liu (2007) and Salager-Meyer (2011). These authors make use of the notion of reader responsibility and writer responsibility, with the allocation of this responsibility varying according to the culture of the writer. They maintain that, in some languages, writers are accountable for effective communication, whereas there are languages in which readers are the ones responsible for understanding a text. These researchers consider that writers may be liable for providing landmarks or transition statements in the text. These transition devices can be explicit and so it is the writer who must lead the way for the reader; or they can be implicit and may require an active role from the reader, who must use his or her intuition to follow the text. Modal verbs can act as such landmarks, transmitting information to the readers and also the opinion of the writer. The existence of these landmarks could have implications for the teaching of academic writing, as well as for cross-cultural understanding between academics.

In addition, here I presume that the fact that the globalization of information and the Internet have changed cross-cultural communication. Intercultural communicative competence can vary depending on the cultures of the speakers involved and, as a result, speakers with different cultural backgrounds may not conceive the relationship that exists between concepts and words in the same way, as researchers such as Canagarajah (2002, 2007a, 2007b), Arasaratnam and Doerfel (2005), Zhou (2008), Pennycook (2010) and Louhiala-Salminen and Kankaanranta (2012) have explained. This is one of the main reasons why there can be different ways in which to transmit the same reality in a language used in cross-cultural communication; a strict standard production or interpretation of language is not advisable in an era in which change and development are key features of it. This era also sees increased interaction between people from different cultures and languages: a monocultural perspective on language use is no longer acceptable.

In this sense, Kramsch (1998: 3) states that “Speakers identify themselves and others through their use of language; they view their language as a symbol of their social identity […] Thus we can say that language symbolizes cultural reality.” Through language, speakers transmit their own perception of reality and they use it to persuade, influence or manipulate their audience, as considered by Mauranen, Hynninen and Ranta (2010) in the ELFA project. Speakers’ choices of linguistic elements
and their use of specific rhetorical items may reflect how they perceive the world and how they wish to transmit information and ideas.

In this study, I decided to focus on the collection of examples and analysis of the modal verbs can, could, may, might, and be able to, as they have a range of pragmatic functions and serve to mark evidentiality, possibility and likelihood, strategic vagueness, and politeness in discourse (Channell 1994; Markkanen & Schroeder 1997; Alonso Almeida 2012). As they express modality, their use is greatly influenced by the mother tongue of the writer, as researchers such as Hinkel (2009), for example, have shown. The writer transmits cultural and social conventions through modal verbs and yet Hinkel (2009: 672), when discussing the pragmatic properties of modals in academic writing, has noted the following: “Comparatively fewer studies have addressed the uses of these modals specifically in student L1 and L2 writing, with a likely exception of their uses as hedges, qualifiers, or markers of (un)certainty”. This is the reason why I believe modal verbs need to be analysed, while also taking into account the implications of their use by speakers with different mother tongues.

In order to explore all the aspects mentioned above, the main objective of this paper is to determine the way in which possibility and ability modal verbs are used by native speakers of English and non-native speakers of English in an academic context. More specifically, my intention is to identify whether language variation may be identified in cross-cultural communication when modal verbs of ability and possibility are used by speakers with different linguistic backgrounds. Finally, an attempt is made to establish whether native English-speaking writers tend to be more explicit than Spanish writers who use English as a foreign language to communicate internationally.

2. Methodology

The two corpora used in this study consisted of, on the one hand, a set of fifty academic papers written in English by researchers from Spain and which were published in international journals from 2010 to 2012 (referred to as the NNES corpus hereinafter). On the other hand, I also compiled a second corpus composed of fifty papers written by native English-speaking researchers and published in international journals from 2010 to 2012 (referred to as the NES corpus hereinafter). The total number of words included in the NNES corpus was 184,357 (47.11% of the total corpus) and
the total number of words included in the NES corpus was 206,907 (52.89% of the total corpus).

The papers included in both corpora were selected from the subject domain of engineering and, afterwards, classified by considering the name and affiliation of the author or, in case of multiple authorships, the name and affiliation of at least two or three authors, depending on the number of authors involved in the research. The criteria on which the articles comprising each corpus were selected included authorship, length, the nature of the texts (academic English) and the likely audience (international academic community).

Once the papers were compiled, all the tables, direct citations, graphs, charts, bibliography and references were removed and the corpora were analysed using the Wordsmith Tools suite of computer programs, version 5.0 (Scott 2009). The modal verbs to be analysed were those that indicated possibility and ability and can, could, may, might and be able to were chosen because they are identified as verbal modality markers and they have a range of textual and pragmatic functions. Later, these modal verbs were identified in the corpora. In this study, I carried out a quantitative analysis of the corpora in order to analyse the variation in the use of modal verbs, but a qualitative analysis of the cases found was also performed in order to determine in context whether the English writers tended to be more explicit than the Spanish writers.

One program from the Wordsmith Tools suite, the Concordancer, proved particularly useful in the identification of modal verb variations in the corpora. Nevertheless, manual checking and identification was also necessary in order to confirm the use of some patterns in the academic papers. I identified the occurrences found in the corpora and classified them into the different modal verbs, calculating the percentages and the statistical data. The chi-squared value was calculated, with it being necessary for the p-value to be lower than 0.05 for the results to be statistically significant. The relative risk was also calculated in order to establish the probability of this value appearing in similar analyses, establishing 1 as the minimum value.

After compiling the results for the modal verbs of possibility and ability, comparisons were drawn between the corpus of non-native English speakers (NNES) and the corpus of native English speakers (NES) in order to observe whether variation could be detected in the use of these verbs. I also analysed and described some examples of the modals found in both corpora in order to observe the degree of judgment and vagueness
associated with their use. Finally, the results were analysed, the most interesting data were identified, and the conclusions of the study were drawn.

3. Results and discussion

The results showed that there is some variation in the use of possibility and ability modals by writers with different linguistic and cultural backgrounds, namely between Spanish and English writers in this case. Although these writers share the specialised knowledge and express their thoughts in an academically appropriate way, these verbs qualify the meaning of the utterance made by the writer. The possibility and ability modals may express the judgement of the writer in a nuanced way and express different gradients of possibility and may be used with another meaning in different parts of the sentence, depending also on the intention and the cultural tradition of the speaker.

The occurrences found in the corpora of the use of possibility and ability modal verbs can be observed in Table 1. The second and fourth columns show the results expressed in percentages taking into account the total occurrences of each modal verb. The data of the third and fifth columns are calculated taking into consideration the total amount of words of the NNES corpus and the NES corpus.

Table 1. Frequencies of modal verbs used by NNES and NES

<table>
<thead>
<tr>
<th>Modal verbs</th>
<th>NNES corpus percentage</th>
<th>NNES per 1,000 words</th>
<th>NES corpus percentage</th>
<th>NES per 1,000 words</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN</td>
<td>59.82</td>
<td>4.75</td>
<td>40.18</td>
<td>2.84</td>
</tr>
<tr>
<td>COULD</td>
<td>48.82</td>
<td>0.90</td>
<td>51.18</td>
<td>0.84</td>
</tr>
<tr>
<td>MAY</td>
<td>39.69</td>
<td>0.98</td>
<td>60.31</td>
<td>1.32</td>
</tr>
<tr>
<td>MIGHT</td>
<td>24.07</td>
<td>0.07</td>
<td>75.93</td>
<td>0.19</td>
</tr>
<tr>
<td>BE ABLE TO</td>
<td>76.47</td>
<td>0.42</td>
<td>23.53</td>
<td>0.11</td>
</tr>
</tbody>
</table>

The results show that NES used the modal verbs *may* and *might* more frequently (in bold), with almost 61% and 76% of the occurrences respectively; while the NNES tend to rely on the modal verb *can*, with almost 60% of the occurrences. The results presented in Table 1 support the observation that the manner of being imprecise and appearing polite in formal writing is sometimes determined by cultural and social conventions, as there is a difference in the use of modal verbs of possibility and ability. Writers with different linguistic backgrounds may not share the same
cultural norms, and, when this happens, variation appears in modality. I observed in the examples that Spanish writers tended to express possibility with the verb can (poder in Spanish) and could (podría in Spanish) was used to express weak possibility, not politeness as happened in the corpus of NES. This could be due to the linguistic reference to the mother tongue of the Spanish writers. We can see some examples of the use of can by NNES and NES in (1) and (2):

(1) “For a metallic electrode, the attenuation can be calculated using its conductivity and the values of no and Z in an analytical formula”. “It is found that a substantial improvement in bandwidth can be obtained, provided that the velocity of the optical and electrical signals is matched”. (NNES)

(2) “As can be appreciated in Fig. 1, the XRD of the YBCO/YSZ/LNO heterostructure reveals that, after the YBCO growth, the YSZ layer suffers a significant crystalline deterioration, and crystals with orientation are observed”. (NES)

In (1), the modal verb can could be substituted by a non-assertive modal such as may or might, but the NNES preferred to use can, instead. This may mean that Spanish writers prefer to be precise and transmit a judgement, not considering the possibility that the reader may interpret possibility as assertion. The translation into Spanish of this part of the sentence is: “Se ha visto que una mejora substancial en el ancho se banda se puede obtener…”, with puede being the only possible verb in this context in Spanish as the conditional podría (may; might) should not be used, as it may transmit the idea of conditionality or improbability to the reader. In (2), on the other hand, the modal verb can cannot be substituted by another modal verb, as the writer expresses what the reader can see in a table, so the writer is expressing an objective reality and ability.

The statistical analysis of the results can be observed in Table 2. The second column shows the calculation of the relative risk of the results obtained in both the NNES and NES corpora. As the minimum value established is 1, the results obtained in this analysis can be extrapolated to similar research. The third column illustrates the results of the p-value, which significance level is 0.05. As all the values are below 0.05, it was obtained a very strong presumption against the neutral hypothesis, i.e. the results obtained are significant.
Table 2. Statistical analysis of data obtained

<table>
<thead>
<tr>
<th>Modal verbs</th>
<th>Relative risk</th>
<th>Chi-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN</td>
<td>1.26 (1.16–1.36)</td>
<td>p= 0.00</td>
</tr>
<tr>
<td>COULD</td>
<td>0.81 (0.66–0.99)</td>
<td>p= 0.03</td>
</tr>
<tr>
<td>MAY</td>
<td>0.56 (0.47–0.66)</td>
<td>p= 0.00</td>
</tr>
<tr>
<td>MIGHT</td>
<td>0.27 (0.14–0.50)</td>
<td>p= 0.00</td>
</tr>
<tr>
<td>BE ABLE TO</td>
<td>2.75 (1.75–4.32)</td>
<td>p= 0.00</td>
</tr>
</tbody>
</table>

After this analysis, an overall comparison of the results obtained from the corpora was undertaken. Figure 1 shows that NNES used more possibility and ability modals, and it should also be noted that most of the difference found in the occurrences was related to the use of *can* by NNES.

**Figure 1.** Comparison of the use of possibility and ability modals in the corpora.

We can also see that NNES and NES used *be able to* and *might* quite similarly, but that there was divergence in the use of *may* and *can*. As observed, in formal academic writing, the concept of vagueness can be expressed in a different way by writers, depending on the cultural background of the authors. Although the meaning of an academic text should be appropriately qualified and reflect the opinion of the writer, sometimes writers make some changes in the way they express emotions or volition. A research paper should communicate its results and conclusions in an impartial manner, so as not to manipulate the reader, but objectivity is not easily maintained when writing about ideas and perceptions in another language than the mother tongue. As pointed out in the Introduction section, languages can be either reader or writer-responsible, with English being the latter. Academic English readers expect landmarks of modality as
they read, and writers need to provide them. Writers with different linguistic backgrounds communicate in English as a lingua franca transmitting their cultural conventions, which may enrich language production.

Although English-speaking readers expect writers of English to be explicit and direct, it is not always the case that they are. English is a global language and is used by speakers with different linguistic and cultural backgrounds. The need for imprecision or precision is determined by the specific context and writers must make their choice on which modal verb to use by taking the context into account, but it is also the case (as seen in the results of this research) that the level of precision expected in formal writing is sometimes governed by cultural conventions. As a consequence, readers and writers do not employ modal verbs of possibility and ability in the same way, as demonstrated by the results displayed in Table 1 and Graph 1.

4. Conclusions

My purpose has been to demonstrate that linguistic and cultural backgrounds may influence the way in which non-native English writers express their ideas in a lingua franca and that this leads to variation in the use of the language that most international writers employ in order to explain scientific findings correctly, i.e. English. I consider that the difference between the linguistic and the cultural background is that a language expresses shared conventions among the speakers of the same language, but our cultural background is the factor that differentiates the way we express ourselves in a language and leads to the formulation of different ways of expressing the same reality. I believe that different cultural backgrounds cause variation in choice of expressions in a given language.

In addition, variations in the transmission of possibility and ability modals in international papers are not a weird phenomenon as speakers transmit more than words when they communicate their ideas fully in an environment of cross-cultural communication. Furthermore, I also believe that English as an international language may also reflect different ways of expressing the same reality and readers should be conscious of this fact. As an example, the data seen in Table 1 and Figure 1 show that NES express possibility mainly with can, may and might, meanwhile NNES prefer the use of can, as, in some contexts in Spanish, the equivalent of may and
might expresses a weaker possibility (e.g. podría ser could be interpreted as not being real, as it expresses improbability).

I think that due consideration should be given to language variation, as the connection between the conventions of culture and language is not as straightforward as we might think. Variation also exists in the use of language among native speakers and so, logically, variation may appear when non-native speakers use an international language. Given that there are as many ways of transmitting information as there are speakers of a language, to think that there is one standard form of that language in an international setting seems too idealistic and unsuited to the needs of international communication.

If we consider that reality can be represented or transmitted in different ways, then it is quite logical to think that second language speakers do not communicate in the same way as native speakers, as demonstrated by the research carried out by Charles (2007), Ozturk (2007), Samraj and Monk (2008), Durrant (2009), Hinkel (2009), Schleef (2009), Carrió-Pastor (2009, 2013), Carrió-Pastor and Muñiz (2010), Carrió-Pastor and Candel (2013) and Mauranen (2012, 2013a, 2013b, 2013c). Although second language writers possess the same level of language proficiency, when these authors communicate in an international context, some differences can be detected which are related to their native cultural and social conventions.

The results of this study of modal verbs of possibility and ability show that NNES made greater use of can, which expresses the possibility of the proposal. In this sense, Spanish writers of English as a second language tend to transmit less vagueness when they express themselves in English than their native-speaking English counterparts. This seems to indicate that the cultural background of the writer influences the style of writing, and, hence, the writer’s standpoint. The style of the writer might sometimes appear to lack objectivity and be a reflection of the writer’s judgement of the likelihood of the truthfulness of a particular proposition; nevertheless, individual ways of communication should be accepted. They enrich the language and reflect the changes it suffers as it is being used by millions of speakers. It is a part of its natural evolution. In the corpus analysed in this study, I have observed that Spanish writers tend to be more assertive and this fact has been noted in previous studies (Carrió-Pastor 2005, 2009). This may impact upon the production of language and the different ways of transmitting ideas.
The variation observed could be attributed to the different rhetorical and educational traditions in academic writing in English and Spanish, but it can also form the basis for an appeal for a better understanding and tolerance of culture-specific features, with a view to preserving cultural identity when using English as the international language of academic communication, as Vold (2006) and Vassileva (2001) have stated in their research. Since language constitutes the vehicle for the transmission of thought, it may be difficult to establish guidelines with which to detect modal variation. In future studies, this aspect should be taken into account. First, it might be necessary to determine which parts of the text are the transmissions of modality and differentiate them from those that derive from the application of language rules. Second, the process followed by the speaker in order to decide on the modal verb to be used should be clearly established and, third, other possible ways to express modality should be taken into account by the writer.

The results of this study lead us to the view that synchronic variation in academic discourse is most probably caused by the influence of the cultural background of the writers. As we have seen, the importance of this topic has recently been reflected in the literature as shown in section 1, and it is my view that the different use and variation of possibility and ability modals as hedges and politeness devices should be included as part of English academic writing courses – this is of interest to international speakers of English. At the same time, it can be stated that academic English is sensitive to change in cross-cultural communication and may show greater variability, given that it is widely used for communication all over the world.

References


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