

Epistemic Modality in English and Spanish Psychological Texts

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In scientific discourse epistemic modality constitutes an important rhetorical device which allows writers to convey their knowledge claims and to reduce the risk of criticism from their peers by mitigating the degree of commitment to the truth of a proposition. This study examines the frequency of occurrence and distribution of modality expressions used in the different rhetorical units that constitute the macro-structure of English and Spanish research article abstracts. The sample analysed consists of 40 texts in English and 40 in Spanish selected at random from recent publications in leading journals belonging to the field of psychology. The results show that the distribution of modality devices varies similarly in both languages across the different structural units of the abstracts; however, the findings also revealed that the frequency of use of modality devices is significantly higher in the English abstracts. This seems to indicate that the use of epistemic modality in scientific texts is culturally-bound.

1. Introduction

Academic writing involves a social interaction between writers and readers in a specific context. Stubbs (1986) argues that all sentences encode a point of view and that academic texts are no different in containing the author's presence: scientists inevitably indicate their attitude in their writing. Moreover, research from a variety of disciplines has revealed ways in which academic discourse is both socially situated and structured to accomplish rhetorical objectives (Hyland, 1994). In this type of discourse, academics use epistemic modality to modify their knowledge claims in an effort to convince the other members of the research community of the facticity of the results obtained, and to gain community acceptance for their contribution to disciplinary knowledge. The widespread use of modality has been reported, for example, by Gosden (1993), who has pointed out that writers' perception of uncertainty realised through modality markers constitutes 7.6% of grammatical subjects in scientific research.

For Palmer (1986), the term *epistemic* should apply to any modal system that indicates the degree of commitment by the speaker to what he says and should include the speaker's warrant for what he

says and the speaker's judgements of the reliability of his knowledge. Epistemic modality, as defined by Lyons (1977:797), refers to «any utterance in which the speaker explicitly qualifies his commitment to the truth of the proposition expressed by the sentence he utters». Epistemic modality indicate, thus, the speaker's attitudes towards knowledge and the varying degrees of commitment towards the proposition expressed.

This view of modality comes very close to the functional pragmatic definition of the concept of *hedge*. The use of hedge as a linguistic term goes back to Lakoff's (1972) main concern with the logical properties of words and phrases like *rather*, *largely*, *very*, and their ability «to make things fuzzier or less fuzzy» (Lakoff, 1972: 195). This term was used in its origins only for expressions that modify the category membership of a predicate or a noun phrase. However, this concept has been widened since it was adopted by pragmatists and discourse analysts. Thus, for example, Markkanen and Schröder (1989), who discuss the role of hedges in scientific discourse, see them as modifiers of the writer's responsibility for the truth value of the propositions expressed or as modifiers of the weightiness of the information given, or the attitude of the writer to the information. Along the same line, Salager-Meyer (1994) associates hedges to linguistic devices used to convey evasiveness, possibility, tentativeness, mitigation of responsibility and/or mitigation of certainty to the truth value of a proposition. According to this conception, hedging is lexically expressed mainly through the use of modal expressions such as *can*, *may*, *perhaps*, *to suggest*; although other rhetorical devices could also be included as hedges: the use of impersonal expressions, the passive and other agentless constructions. This implies that the concept of modality and hedge overlap to a lesser or greater extent (cf. Markkanen and Schröder, 1997). The

most common assumption in discourse analysis is to consider hedging as a wider concept that includes epistemic modality as a part of it.

Epistemic modality allows academics to tone down their statements in order to reduce the risk of opposition and minimise the face threatening acts. As Myers (1989) states, the making of a claim threatens the general scientific audience because it is a demand for communally granted credit. The claim also threatens the negative face of other researchers because it implies a restriction on what they can do from that moment onwards. Epistemic modality is therefore crucial in academic discourse as it is a central rhetorical means of gaining communal adherence to knowledge claims.

Research on the use of modality in academic writing is particularly relevant for foreign learners of English. In this communicative situation, using modal expressions appropriately may cause problems even in the mother tongue, therefore it is no wonder that it is problematic in a foreign language. As some interlanguage studies have revealed, this is because the rules of appropriateness vary across cultures (Markkanen and Schröder, 1997). However, despite the importance of this linguistic phenomenon for foreign learners of English, most of the studies that have been carried out on epistemic modality in academic discourse have focused on the analysis of English research texts and only a few (see, for example, Ventola and Mauranen, 1991; Clyne, 1991) have dealt with the aspect of how modality is contrastively realised in different languages and in specific academic genres.

The general purpose of this study is to offer an account of the epistemic devices which reflect the rhetorical concerns of academics in English and Spanish by revealing the extent of propositional mitigation that exists in the specific written genre of research article abstracts. To this end, this study has examined the frequency of occurrence and types of modality markers used in the different

rhetorical units that constitute the macro-structure of English and Spanish abstracts, with the ultimate purpose of determining whether there is cross-cultural variation in terms of frequency and distribution of expressions of modality in the English and Spanish texts.

2. Methodology

2.1. Procedure

As several studies on scientific discourse in English have reported the existence of generic variation across academic disciplines, I did not gather my primary sources from a wide range of disciplines, but selected my sample from texts belonging to a single discipline representative of the experimental branch of social sciences: Psychology.

The corpus in English is made up of 40 research paper abstracts selected at random from recent publications in two leading international journals belonging to the field of psychology: *British Journal of Psychology* and *Applied Psycholinguistics*. Similarly, the Spanish corpus is made up of 40 abstracts drawn randomly from two of the most relevant Spanish journals in the discipline of psychology: *Psicológica* and *Análisis y Modificación de la Conducta*.

The total number and types of modality devices used in the English texts was recorded and then compared to those used in the Spanish texts. In order to establish the distribution of modality in relation to the different sections of the abstracts, I first undertook the description of the macro-structure of the abstracts by examining the overall textual organization of each abstract. Once I checked that the abstracts written both in English and Spanish represent, in general terms, the four or most of the basic structural components that typically constitute the accompanying research article (Introduction-Methods-Results-Discussion), I proceeded to delimit these structural units in each

abstract and then I determined the frequency of occurrence and distribution of the modality expressions used in each unit.

2.2. *Classification of modality devices*

In written academic discourse, there are a number of possible linguistic strategies which permit writers to express grammatically varying degrees of commitment to the truth of a proposition by qualifying their claims. In order to analyse the occurrence of modality devices consistently, these were classified according to the following categories:

— Modal auxiliary verbs, such as *may, might, can/poder*, which are used to express the writer's assessment as to the certainty, probability or possibility that the assertion is true.

— Semi-auxiliaries like *to seem, to appear/parecer*, which are used when the writer dissociates from the reliability of the proposition expressed.

— Epistemic lexical verbs like *to suggest/sugerir, to indicate/indicar, to speculate/especular, to assume/asumir*, that is, verbs which relate to the probability of a proposition or hypothesis being true.

— Verbs of cognition like *to believe, to think/creer, to doubt/dudar*, which convey the writers' attitude to the truth of their statements.

— Modal adverbs (*perhaps, possibly, probably*) also express the same degrees of commitment that we have seen expressed by verbs.

— Modal nouns (*possibility, assumption, suggestion*) which relate to the probability of the proposition being true.

— Modal adjectives (*possible, probable, likely*) which express varying degrees of certainty.

3. Results

In table 1 the quantitative results of my analysis with respect to the frequency of occurrence and category distribution of modality expressions recorded in the English and Spanish abstracts are presented:

Table 1: Frequency of occurrence and distribution of modality devices in the different structural units of the abstracts

| Structural unit | Category | English | Spanish |
|-----------------|----------------------|----------|----------|
| INTRODUCTION | – Modal verbs | 18 (60%) | 7 (64%) |
| | – Semi-auxiliaries | – | 2 (18%) |
| | – Epistemic verbs | 4 (13%) | 1 (9%) |
| | – Verbs of cognition | – | – |
| | – Modal adverbs | –1 (9%) | – |
| | – Modal nouns | 6 (20%) | 2 (18%) |
| | – Modal adjectives | 2 (6.6%) | – |
| | Totals | 30 items | 11 items |
| METHODS | – | – | – |
| RESULTS | – Modal verbs | 2 (18%) | 1 (20%) |
| | – Semiauxiliaries | 3 (27%) | 2 (40%) |
| | – Epistemic verbs | 2 (18%) | 2 (40%) |
| | – Verbs of cognition | – | – |
| | – Modal adverbs | – | – |
| | – Modal nouns | 3 (27%) | – |
| | – Modal adjectives | 1 (9%) | – |
| | Totals | 11 items | 5 items |
| DISCUSSION | – Modal verbs | 2 (33%) | 3 (23%) |
| | – Semiauxiliaries | 2 (5.5%) | 2 (15%) |
| | – Epistemic verbs | 19 (53%) | 4 (31%) |
| | – Verbs of cognition | – | – |
| | – Modal adverbs | 1 (2.7%) | – |
| | – Modal nouns | 1 (2.7%) | 1 (7%) |
| | – Modal adjectives | 1 (2.7%) | 2 (15%) |
| | Totals | 36 items | 13 items |
| | Totals | 77 items | 29 items |

The results in table 1 show that there is a statistically significant difference in the frequency of use of epistemic modality between the abstracts written in English and Spanish in the field of psychology: The total number of modal markers used in the English texts was 77 in contrast to the total number of 29 found in the Spanish abstracts. Whereas this rhetorical strategy with the function of mitigating claims was favoured by the majority of academics who wrote in English for international publications (there were examples of modality in 33 out of the 40 English abstracts that constitutes our sample), this practice of using modal devices was only found in 18 out of the 40 abstracts analysed in Spanish.

The results in table 1 also show that in both languages the frequency of occurrence and distribution of modality devices varies similarly across the different structural units of the abstracts: the most heavily-hedged unit both in English and Spanish is the Discussion unit. This is probably due to the fact that it is in this final section that writers make the highest level of claims and tentatively explore implications not directly tied to their findings. The modal markers most frequently used in this unit in both languages are epistemic verbs (*to suggest, to indicate, to tend, to propose; sugerir, indicar, sefialar*) and modal verbs (*may, can, might; poder*).

It is in the Discussion unit, especially in the English abstracts, that most instances of groups of modality devices in the same sentence were found, reinforcing in this way their epistemic strength:

«It is *tentatively suggested* that the congenitally blind *may* show different learning strategies from the sighted as a result of allocating more attention to sensory information processing».

«The discussion considers *possible* explanations for the findings and the *possibility* that different subgroups of these samples *might* show differential effects».

«*Sugerimos* por tanto, que si bien los factores en solitario no *parecen*

ejercer ningún efecto, en futuras investigaciones se delimite la relevancia del status del investigador».

The second most-heavily hedged unit, again in both languages, is the Introduction, where the level of generability is also fairly high. Likewise, in this unit, the modality devices most frequently used in both languages are modal verbs (*can, would, may, might; poder*) followed by modal nouns (*assumption, possibility, indication; posibilidad*). Typical of most of the English and Spanish abstract introductions is the presence of a subunit in which writers indicate the main purpose of their studies or describe the main features of their research. For the realisation of this *move*, in Swales' (1990) terms, writers occasionally made use of modality expressions in order to reduce their commitment to the claims expressed:

«This study explores the *possibility* that beginning writers do not revise because they do not read their own writing».

«Para profundizar en este objeto de conocimiento, este trabajo se plantea la *posibilidad* de potenciar el efecto específico del tratamiento psicológico del dolor...».

Another frequent subunit or *move* in the abstract introductions of both languages is that in which writers establish the relevance of their work for the research community, mainly by showing their knowledge of their research topic. For the realisation of this *move*, the writers also used on some occasions modality devices as a way of mitigating their claims:

«There is wide agreement that current psycholinguistic techniques *may* help us understand (...). This application *would seem* particularly worthwhile in the domain of schizophrenic speech».

«En términos generales, se *puede* decir que para algunas personas resulta fácil llevar a cabo una intención frente a otras fuerzas competidoras».

A third subunit, less frequently found in the Spanish abstract introductions than in the introductions in English, is that in which writers try to justify their work in their research field by indicating a gap, that is, pointing out possible topics or areas that still need research, or by showing disagreement with the results of previous studies. In this move, epistemic modality constitutes an important rhetorical device which allows writers to diminish their discursive argumentative degree of disagreement with the ideas sustained by other authors, as a way of protecting themselves against criticism and, at the same time, creating a research space:

«Phonological awareness is thought to be related to children's success in learning to read. However, morphological awareness *may* offer a more comprehensive measure of linguistic sensitivity...».

An interesting aspect that was found in our sample was that, as a way of justifying their contribution in their research field, some writers in both languages use modality markers to diminish the validity of the results obtained by other authors in previous studies:

«An earlier experiment by Byrne (1981) found that young, poor readers *tend* to act out sentences containing adjectives with object control (...). However, the *possibility* that a processing limitation *could* have contributed to the poor readers' difficulties with object-control adjectives has not been fully explored».

«A pesar de la importancia que estas variables *parecen* tener para obtener efectos de facilitación bajo el paradigma de facilitación semántica, no existe actualmente un listado de estímulos con esta información».

Regarding the Results unit, as shown in table 1, the frequency of occurrence of epistemic modality is not as high as in the previous structural units. On the few occasions that writers used modality to present the results obtained in a tentative way, the modality markers most frequently used by the writers in English are semi-auxiliaries and modal nouns, followed by epistemic and modal verbs:

«There was a *tendency* for those subjects who had shown good correspondence between their ranks and their ratings to show a greater spread in their rating».

On the other hand, the Spanish writers equally favoured the use of semi-auxiliaries and epistemic verbs; however, no instances of modal nouns were recorded in this unit.

As regards the Methods unit of the English and Spanish abstracts, no examples of modality devices were found in any of the texts. It is also worth pointing out that the only category of which no examples were provided in the English and Spanish abstracts that constitutes our sample was that of verbs of cognition, such as *believe*, *think*, which indicates that although the use of these verbs may be included in research articles as a rhetorical strategy to convey epistemic modality, it seems not to be favoured by writers in abstracts.

4. Discussion

The findings obtained in this study have revealed that abstract writing in the discipline of psychology presents some degree of cross-cultural variation, especially as regards the frequency of use of epistemic modality. As the results suggest, most academics who write abstracts in English for international publications consider the use of modality devices as an important rhetorical tool in their attempt to gain reader acceptance of knowledge claims and to avoid potential criticism, probably due to the high level of competition that exists among the members of the international discourse community to see their research published. On the other hand, our findings point to the fact that a statistically less significant number of academics in Spanish use modality as a linguistic strategy to mitigate the scientific claims that they make in their abstracts. The reasons might be that Spanish writers may consider the use of modality a rhetorical practice which

has not been conventionalised as part of the Spanish academic style, or simply that they may consider it unnecessary, as the number of members belonging to the Spanish scientific community in the field of psychology is very small and, consequently, the risk of criticism from their peers is very reduced.

Due to the importance that modulating claims has for the international scientific community, Spanish novice writers who wish to obtain international recognition through their publications must be aware of the relevant function of epistemic modality in the production of research texts. Consequently, teaching the appropriate use of modal expressions in English academic discourse should be an essential component of English language classes. In this sense, several types of teaching exercises related to the identification of the purposes, distribution and major forms of modality devices could be used with those postgraduate students who have to read scholarly papers written in English and eventually write articles in this language.

WORKS CITED

- Clyne, M.** 1991. «The socio-cultural dimension: The dilemma of the German-speaking scholar», in H. Schröder, ed. *Subject-oriented Texts*. Berlin: Walter de Gruyter, 49-67.
- Gosden, H.** 1993. «Discourse functions of subject in scientific research articles». *Applied Linguistics*, 14, 56-75.
- Hyland, K.** 1994. «Hedging in academic textbooks and EAP». *English for Specific Purposes*, 13, 239-256.
- Hyland, K.** 1996. «Talking to the academy: Forms of hedging in science research articles». *Written Communication*. 13: 251-281.
- Lakoff, G.** 1972. «Hedges: a study in meaning criteria and the logic of fuzzy concepts». *Journal of Philosophical Logic*. 2: 458-508.
- Lyons, J.** 1977. *Semantics* (Vol 1-2). Cambridge: Cambridge University Press.
- Markkanen, R.** and **H. Schröder.** 1989. «Hedging as a translation problem in scientific texts», in C. Lauren and M. Nordman, eds. *Special Languages: From*

- Human Thinking to Thinking Machines*. London: Multilingual Matters, 171-175.
- Markkanen, R.** and **H. Schröder**. 1997. *Hedging and Discourse. Approaches to the Analysis of a Pragmatic Phenomenon in Academic texts*. Berlin: Walter de Gruyter.
- Palmer, F.R.** 1986. *Mood and Modality*. Cambridge: Cambridge University Press.
- Myers, G.** 1989. «The pragmatic of politeness in scientific articles». *Applied Linguistics*, 10:1-35.
- Salager-Meyer, F.** 1994. «Hedges and textual communicative function in medical English written discourse». *English for Specific Purposes*. 13: 149-170.
- Stubbs, M.** 1986. «A matter of prolonged field work: notes toward a modal grammar of English». *Applied Linguistics*. 7: 1-25.
- Swales, J.** 1990. *Genre Analysis*. Cambridge: Cambridge University Press.
- Ventola, E.** and **A. Mauranen**. 1991. «Non-native writing and native revising of scientific articles», in E. Ventola, ed. *Functional and Systemic Linguistics: Approaches and Uses*. Mouton de Gruyter, 457-492.