

An analysis of disagreement-provoking factors in the analysis of epistemic modality and evidentiality: the case of English adverbials

Marta Carretero

Departamento de Filología Inglesa I
Facultad de Filología
Universidad Complutense de Madrid
mcarrete@filol.ucm.es

Juan Rafael Zamorano-Mansilla

Departamento de Filología Inglesa I
Facultad de Filología
Universidad Complutense de Madrid
juanrafaelzm@filol.ucm.es

Abstract

This paper reports on a series of annotation experiments carried out on a number of English adverbials. The experiments, based on occurrences obtained from the British National Corpus, focused on the distinction of epistemic and evidential meanings from other kinds of meanings. The results led to the conclusion that many of the cases of inter-annotator disagreement were due to certain syntactic and semantic factors. Some of these factors will be described in detail, together with the decisions made in each case for prospective annotation.

1 Introduction

The annotation experiments described in this paper are part of the CONTRANOT project, aimed at the creation and validation of English-Spanish contrastive functional descriptions of a number of linguistic categories for corpus analysis and annotation¹. As part of the corpus annotation activities developed in this project, in this paper we present some findings obtained during the process of annotating epistemic modality and evidentiality. More specifically, the paper describes work carried

¹ Data of the project: "Creation and validation of contrastive descriptions (English-Spanish) through corpus analysis and annotation: linguistic, methodological and computational issues". Ref. FFI2008-03384 (Ministry of Science and Innovation). Director: Prof. Julia Lavid, Universidad Complutense de Madrid.

out on the initial stages of the coding system for the annotation of English epistemic and evidential adverbials: it includes an account of the initial coding system, together with an analysis of the most important factors that have given way to disagreement in the annotation of different adverbials. The analysis is mainly qualitative, due to the small number of examples analyzed, but the most relevant quantitative data have been specified.

The term 'adverbial', as it is used in this paper, encompasses adverbs such as *certainly*, *evidently* or *probably*, as well as expressions of other syntactic categories that are similar to them in meaning and function, such as the Noun Phrase *no doubt* or the Prepositional Phrases *in all probability*, *in all likelihood* or *for sure*.

The initial experiments that served to test the reliability of the coding scheme consisted in the annotation of 20 examples for each adverbial selected at random from the Brigham Young University version of the British National Corpus, available online at <http://corpus.byu.edu/bnc/>.

2 The coding system: the concept and scope of epistemic modality and evidentiality

The concept of epistemic modality adopted in this paper is in line with work based on modal logic, in which the different modal categories are treated in terms of possibility and necessity.² Accordingly,

² This approach is, perhaps, the most widely used for describing modal expressions in English. Some references are Hermerén (1978), Palmer (1990), Perkins (1983), Nuyts (2001), Wårnsby (2006) or Collins (2009).

epistemic modality is defined as the estimation of the probability for a proposition to have been, be or become true (cf. Nuyts 2001: 21). This concept of epistemic modality excludes certain expressions included in broader approaches to epistemic modality,³ which qualify the speaker/writer (sp/wr)'s commitment to the reliability of the information in different ways from probability in the strict sense: examples of these expressions are hedges of approximation (*sort of, or something...*) or stance adverbials of degree (*basically, essentially, totally*). These categories could well be the basis of parallel annotation systems in future.

As for evidentiality, it will be defined as the linguistic expression of the kind, source and/or evaluation of the evidence for or against the truth of the proposition that the sp/wr has at his/her disposal. We will consider it as a semantic category, in a similar way to Chafe (1986), not as a grammatical phenomenon as in Mithun (1986) or Anderson (1986), nor will we include cases in which evidentiality is pragmatically inferred (Ifantidou 2001).

The adverbials selected for this research meet the requirements of the scope of epistemic modality and evidentiality described above. The list, which is not exhaustive in the present stage of this research, includes the following items:

- Epistemic adverbials of probability and possibility: *maybe, perhaps, probably, in all likelihood, in all probability, improbably, possibly, conceivably, plausibly and predictably*.⁴
- Epistemic adverbials of certainty: *assuredly, certainly, definitely, positively, surely, undeniably, unquestionably*.
- Evidential adverbials: *apparently, clearly, evidently, obviously, plainly*.

We believe that the evidential adverbials listed here, except for *apparently*, could be considered as epistemic and evidential at the same time, or 'epistentials', since they have an epistemic meaning of high degree of certainty (which is similar to that of the epistemic adverbials of certainty listed above) as well as an evidential meaning of sound evidence. However, we believe

that, in spite of this overlap in the linguistic expression of epistemic modality and evidentiality, both categories should be kept separate in the annotation, in the sense that the consideration of the overlap would complicate matters. Consequently, all the adverbials with a semantic component of evidence will be considered as evidential, independently of whether they also have an epistemic semantic feature or not.

3 The experiments

The adverbials listed above were submitted to a first annotation experiment by two linguists knowledgeable about epistemic modality and evidentiality (concretely, the two authors of this paper), in which the epistemic and evidential meanings were to be distinguished from other meanings. That is to say, the tagging was restricted to a basic level, where the options were 'Epistemic/Non-epistemic' for the epistemic adverbials, and 'Evidential/Non-evidential' for the evidential adverbials. This labelling is not as trivial as it may seem at first sight: the difficulties involved in distinguishing epistemic modality from other categories are widely attested in the literature (Simon-Vandenberghe and Aijmer 2007, Nuyts 2005, Collins 2009, Boye and Harder 2009, Cornillie 2009).

In accordance with the definitions of epistemic modality and evidentiality described above, the criteria for their delimitation in this research have to be semantic. For this reason, a preliminary study of the adverbials was carried out, based on the references mentioned above and others (Byloo, Kastein and Nuyts 2007, Maíz and Arús 2008, Tucker 2001, Hoye 1997, Swan 1988). These references attest the importance of pragmatic and discourse factors in global accounts of the adverbials; however, in order to maintain the status of epistemic modality and evidentiality as semantic categories, the decision was made to ignore these factors at this stage of the work. A more detailed account of these pragmatic factors is provided in Carretero and Zamorano-Mansilla (to appear). For the purposes of this paper, suffice it to say that a common feature of these factors is the bleaching of the epistemic or evidential meaning into a more general meaning of modifying assertiveness. On the one hand, epistemic adverbs of probability and possibility, together with the evidential adverbial

³ Examples of these approaches are Biber et al. (1999) and Kärkkäinen (2003).

⁴ Originally, *impossibly* was also listed, but later it was excluded due to the almost total lack of epistemic meaning.

apparently, are often used as downtoners, with the main purpose of expressing a high degree of tentativeness rather than assessing probability. For example, *maybe* in (1) is used to downtone the strength of a suggestion rather than to express an assessment of weak probability:

- (1) Every day, I always used to stick my head around the office door and say, ‘Anything for me today?’ — and one day they said, ‘Well, we’re looking for dancers for the BBC’s production of *Pistol Shot* (which was a play by Chekhov) — **maybe** you’d like to do it and choreograph it and use some of your students?’ (BNC AB5)

On the other hand, epistemic and evidential adverbials of certainty are frequently used with the main purpose of enhancing assertiveness rather than making an assessment of certainty. For example, the main function of *certainly* in (2) is to lay emphasis on the speaker’s commitment to comply with the request:

- (2) Lord Hulton turned to me. “You’ll let us have some more Propopamide, won’t you, Herriot?”
“**Certainly**,” I replied. “I think I have some in the car.” (BNC G3S)

It is also well-known that epistemic and evidential adverbials often perform certain discourse functions. The most remarkable of all is, perhaps, the signalling of concessive relationships between the clause in which they occur and another clause. We believe that this discourse function is compatible with the epistemic or evidential meaning: for example, the concessive relationships signalled by *maybe* in (3) and by *certainly* in (4) do not interfere with their respective meanings of possibility and certainty. For this reason, the adverbials were considered as epistemic or evidential in this kind of contexts.

- (3) **Maybe** the farmer or his tenant will ask for a percentage of the kill within the agreement, but it makes jolly good sense to ensure that anyone who likes to eat a rabbit and who can influence your sport is well looked after (BNC BNY).
- (4) Orcs are bigger than Goblins, more dangerous, and more brutally ambitious. Grom was to prove the exception, a Goblin who was not only as dangerous and ambitious as the best Orc, but vastly bigger as well! It was not that Grom was especially tall, **certainly** not as tall as an Orc, but he was enormously and infamously fat (BNC CMC).

Once the pragmatic factors of modification of assertiveness and concession were identified as distractors, the authors started the annotation task, with the 20 examples of each of the adverbs selected above. The results of the annotation confirmed that a number of semantic factors clearly provoked disagreement. Some of these factors are explained in Section 4.

4 An account of the disagreement-provoking factors

4.1 Generic statements

The adverbials of possibility *conceivably*, *maybe*, *perhaps*, *possibly* and *improbably often occurred* in statements such as (5), which are characterized by the following two features: a) the modalized sentence refers to a class of entities and can therefore be considered as generic, and b) the modal adverbial is paraphraseable by adverbials of frequency such as *sometimes*:

- (5) ‘Many companies are placing their main focus on the opportunities for intro-European trading after 1992 and rightly so. However, at British Airways Cargo it is the global implications of the Single Market which are receiving most attention,’ says Peter White. He continues: ‘Currently, major manufacturers from the United States and Asia tend to have two or **maybe** three plants in Europe.’ (BNC AMH)

In these cases, the epistemic adverb may be argued to maintain its epistemic meaning, since there is some probability for the state of affairs to occur in each individual case (that is, whenever there is a major manufacturer from the United States and Asia, there is a possibility that s/he has three plants in Europe). However, the modal adverb could also be considered to express dynamic modality. This modality consists of the set of meanings that belong to the possibility-necessity axis and are determined by natural circumstances, which may or may not be inherent to a person or another entity. The main meanings included in dynamic modality are inevitability, tendency, ability and (lack of) potentiality due to internal properties of an entity or else to circumstantial properties (Zamorano-Mansilla and Carretero to appear). *Maybe* in statements such as (5) is close to dynamic modality, since it describes a tendency of the manufacturers described above.

This semantic complexity accounted for the majority of the cases of disagreement of *possibly* and *conceivably* (these cases are, altogether, 5 for *possibly* and 6 for *conceivably*).⁵ Consequently, the decision was made to annotate these occurrences taking into account the overall meanings of the adverbs concerned. The cases of *perhaps* and *maybe* in generic statements were annotated as epistemic, since these adverbs do not display other cases of dynamic modality apart from these; in this way, the adverbs *perhaps* and *maybe* contrast, *possibly* and *conceivably* have a more established dynamic meaning (Zamorano-Mansilla and Carretero, to appear): in certain cases, as in (6), they are not paraphraseable with *perhaps* or *maybe*. For this reason, the decision was made to annotate their occurrences with generic statements, as in (7), as cases of merger between epistemic and dynamic modality.

(6) In 1939, as in the 1920s, any imports that could **conceivably** be replaced by nationally produced goods had to be reduced to a minimum or stopped. (BNC HPV)

(7) When the radio is switched on, this voltage, stored on C1, is temporarily let loose on the circuitry, where it could **conceivably** do some damage. After a moment, of course, the voltage subsides to its on-load value, which is smaller. (BNC C92)

Generic statements also occurred with *improbably*, concretely with the collocation *however improbably*. The decision was also made to annotate them as cases of merger between epistemic and dynamic modality:

(8) Suppose that, however **improbably**, a balanced slate could nevertheless be agreed on in one party. It is a safe bet that the other parties in contention would not make the same mistake. (BNC EW4)

4.2 Impossibility

Another factor that gave rise to disagreement in the annotation of *possibly* and *conceivably*, and of *plausibly* to a lesser extent, was negative polarity, more specifically the combinations of these adverbials with *cannot* or *could not*. It may well be

⁵ For *conceivably*, this result corresponds to a second experiment, which had to take place because the annotators realized that both had overused the label 'epistemic' in the first experiment.

considered that dynamic impossibility entails epistemic impossibility: a statement that nature does not allow the occurrence of a state of affairs entails that the probabilities for it to occur are none, as in (9), about which the sp/wr has no doubts:

(9) Now you can't **possibly** test a medicine on ten thousand people before you start to sell it, so that sort of risk, as rare a risk as that, will only be picked up when the medicine has actually been in use and on the market and been properly prescribed for some years. (BNC KRE)

However, in other cases impossibility may be indirectly inferred from evidence, and the sp/wr may be interpreted to have a slight doubt (10). Since these cases often led to inter-annotator disagreement, the decision was made to consider them as dynamic, together with the others.

(10) His car was found with bloodstains on the steering-wheel. "He couldn't **possibly** do a thing like that," his best friend said. (BNC H7A)

Other cases of disagreement occurred with the collocation of *only* with *can / could* and *possibly / conceivably*. *Only* has a similar effect to negative polarity ("not... but"), so that the modal meaning of the expressions shifts from weak to strong. These occurrences are annotated as dynamic, in a similar way to the treatment of impossibility described above:

(11) However, Przeworski (1980 and 1985) explores two possible consequences of liberal democracy for the proletariat. First, workers as the majority group in the electorate might rationally choose to maintain capitalism, not because they are duped by the dominant ideology but because their individual interests are better met under redistributive capitalism than through a painful transition to socialism, which could only **conceivably** deliver net benefits in the very long run. (BNC CS3)

4.3 Interrogative structures

The occurrences of the modal adverbials of possibility in interrogative structures were also an area of disagreement. The peculiarities of the use of epistemic expressions in interrogative structures, widely reported in the literature (see, for example, Palmer (1990) and Coates (1983), among others) is due to the fact that questions often implicate the

sp/wr's lack of total certainty, which coincides with the meaning of epistemic expressions. In fact, these adverbials tend to occur in speculative questions for which the sp/wr does not really expect to get an answer. For instance, (12) could be interpreted as a question about naturally possible reasons (dynamic), or else as epistemic, in the sense that the sp/wr is thinking (in vain) about the correct answer. There is perhaps very little difference between asking about naturally possible reasons and about possibly real reasons. In order to favour inter-annotator agreement, these cases were considered as dynamic.

(12) 'No. Dad gives us money.' Ashamed, she hung her head and scraped a pattern on the dry ground with her toe. 'Then what do you want to get it published for?' 'I don't know.' She looked at him through her lashes, almost sullenly. What other reason could there **possibly** be? 'I just thought people did get books published', she said lamely (BNC HH9)

4.4 Epistemic qualifications whose scope is not exactly that of the clause in which they occur

Some occurrences of the adverb *plausibly* are clearly epistemic (13) and others are clearly non-epistemic, such as (14), in which this adverb refers to the adequacy of a word or expression as a descriptor of an entity or situation:

(13) The larger troops, **plausibly**, were developed as protection from diurnal predators. (BNC AMG)

(14) The novel can **plausibly** be labelled science fiction by virtue of the fact that it takes place in the future and involves 'alien' life forms. (BNC G1N)

However, this adverbial displayed a large number of cases of disagreement (9 out of 20), most of which concern the reasonability of a statement made by someone else. The verb often expresses a process of saying (*argue, propose, say, suggest, etc.*). In these cases, the use of *plausibly* means epistemic modality on the part of the sp/wr, but this modality does not affect the proposition in which *plausibly* occurs, but the following proposition (i.e. the proposition expressed by the subordinate clause introduced by the verb of saying). For example, *plausibly* in (15) does not qualify the statement that the suggestion had been

made, but the fact that the 'negative' idea was inspired by the custom mentioned there:

(15) The figures are left in the orange colour of the clay, the background painted in round them in the shiny black: a purely decorative variation; and it has been **plausibly** suggested that the strange 'negative' idea was inspired by the custom of washing the background of marble reliefs with a blue or red against which the mainly white figures were left standing out. (BNC FPW)

The decision was made to consider these cases as epistemic, since the modalized proposition is expressed in the same sentence in which *plausibly* occurs.

4.5 Neighbouring epistemic lexical verbs

The occurrence of a modal lexical verb in the clause in which the adverbials occur can bring about additional complexity to the annotation of adverbials of possibility. For example, in (16), *could conceivably* occurs with negative polarity and is therefore to be classified as dynamic; however, the presence of the verb *believe* turned out to be a distractor:

(16) Looking at the matter generally, I can not believe [sic] that that could **conceivably** have been the intention of Parliament when passing the Children Act 1989 (BNC FC0)

Similarly, the occurrence of *believe* seems to have distracted one of the annotators in (17), a case of *plausibly* about the reasonability of a statement made by someone else (see 4.4.) in which the verb expresses a process of thinking and not of saying.

(17) Concurrent with the building of the earliest, a timber grave chamber was constructed beneath its floor to receive the decomposed remains of a middle-aged man. This is **plausibly** believed to be Gorm, Harald's father, originally interred in pagan fashion (BNC HXX)

As a consequence of this distracting effect of verbs such as *believe*, the design of the annotation system could well include specific instructions about the coexistence of the adverbials with *believe* and similar verbs such as *think* or *suppose*, with authentic examples and their correct annotation.

4.6 Gradable adjectives or adverbs

Gradability is a complicating factor that affects the annotation of adverbials of certainty, most of which often occurred with gradable Adjectival Groups or Adverbial Groups under their scope, as in (18-19). In these cases, the adverbials can be roughly paraphrased with intensifiers such as *very*, so that the meanings of certainty and of degree may well be considered to merge. However, a number of dictionaries⁶ did not register a meaning of degree in some of the adverbs, such as *decidedly*, *definitely* and *positively*. Consequently, examples of this kind were annotated as epistemic.

(18) Unfortunately, faced with price increases of up to 25 per cent, many of us decided we could live without champagne. Frankly, it wasn't much of a sacrifice. The sparkling alternatives were getting better and better, thanks largely to the overseas investment of champagne houses, and the basic quality of champagne was **decidedly** dodgy. 1991 levels, but consumers continue to vote with their wallets. (BNC FBL)

(19) They are making a mistake because the Costa Brava has everything anyone could ever want - in large quantities. It is rapidly becoming the playground for some of Europe's most sophisticated and cosmopolitan young people. The French, Italians, Scandinavians, Dutch and Swiss come to play at prices that make some new hot spots look **positively** expensive. (BNC AM0)

4.7 Coexistence of the meanings of certainty and firm decision

The adverbial *definitely* displays clear epistemic cases, roughly paraphraseable with *certainly*, as well as a few non-epistemic cases, which are characterized by the following features: a) paraphraseability of *definitely* by *finally*, while replacement with *certainly* would provoke a semantic change; b) emphasis on the firmness of

voluntary decisions; and c) occurrence with processes of saying (*approve*, *say*, *state*, *decide*). An example is (20):

(20) Very few projects are **definitely** approved, with the Space Telescope the major exception. (BNC B7N)

However, other cases of *definitely* are not so clear: they report a firm decision, but at the same time the adverbial may be replaced by *certainly* with little change of meaning (21). In order to achieve a greater degree of agreement, paraphraseability with *certainly* was considered as the key criterion, so that many doubtful cases were subsequently annotated as epistemic.

(21) So you weren't going out with him? "Oh - no. **Definitely** not. It's never a good idea to get too involved with a colleague. (BNC C8D)

4.8 Evidentiality and epistemicity: the case of *apparently*

In the annotation of *apparently*, all the occurrences were unanimously tagged as evidential except for two, one of which is (22). The reason for the disagreement turned out to be that in all the cases except these there was an epistemic implicature that the sp/wr did not know the truth of the proposition. The difference may be seen if we compare (22) with (23): in (22), the Geordies, against appearances, turned out not to be invincible; in (23), the sp/wr implicates that s/he is not absolutely sure that the king repeatedly climbed the town wall.

(22) Keegan, who ten days ago was boss of an **apparently** invincible Geordie side, said: 'I know what people are thinking, but the only difference between our defeat at Leicester on Saturday and our early season results was that we gave away a silly goal.' (BNC CEP)

(23) The king was the guest of Richard Wolph, a prosperous gentleman farmer, until the evening of May 4th, when he left by the same gate for Southwell. **Apparently** he repeatedly climbed the town wall during his stay to watch for his pursuers. (BNC CBB)

The disagreement was due to the error made by one of the annotators of considering the epistemic status of *apparently* for its annotation. However, it was previously agreed that this adverbial is to be annotated in terms of evidentiality and not of epistemic modality. Consequently, it is to be always annotated as evidential: even in cases such

⁶ The dictionaries consulted were:

- Cambridge Advanced Learner's Dictionary: <http://dictionary.cambridge.org/dictionary/british/>
- Merriam-Webster Dictionary: <http://www.merriam-webster.com/dictionary/>
- Macmillan English Dictionary for Advanced Learners (2002).

as (22), in which it qualifies a proposition that is not true, it still provides evidence in favour of the hypothetical truth of that proposition. That is to say, its evidential value is constant, while its epistemicity is generated by default, thus having the status of a Generalized Conversational Implicature (Levinson 2000; Carretero 2004); that is to say, *apparently* implicates that the sp/wr does not know the truth or the falsehood of the proposition except when there is contrary evidence to this lack of knowledge.

4.9 Coexistence and pragmatic neutralization of the meanings of evidentiality and manner

The evidential adverbials *clearly* and *plainly* display evidential cases as well as non-evidential cases, which indicate ease of perception (as in ‘He spoke clearly’). Only the first kind of cases are paraphraseable by the construction ‘it + BE + clear/plain + that’. However, a few occurrences were not readily classifiable, and could even be considered as cases of pragmatic neutralization between the evidential meaning and the meaning of manner. These occurrences did not provoke much disagreement in the annotation (one case of each of *clearly* and *plainly*); however, they did provoke doubtfulness during the annotation process. One of these cases is (24), for which the interpretations “must be set in a clear way...” (manner) and “it is clear that the actualized instances must be set...” (evidential) are both possible: from the pragmatic point of view, there is not much difference between them, since the sp/wr’s aims to communicate, above all, that it is necessary to set actualized instances of linguistic signs in correspondence with their conventional meanings:

(24) The conventional meaning of linguistic signs, and their combinations in sentences, constitutes types of conceptualization codified as linguistic knowledge and the tokens of particular and actualized instances must **clearly** be set in correspondence with them. (BNC CBR)

Similarly, in (25), the interpretations “the terms state in a clear way...” (manner) and “it is clear that the terms state...” (evidential) are both possible, and their difference is pragmatically of little importance, the main point being that the

terms leave no doubt that the carrier has contractual remedies against a subcontractor.

(25) Therefore, the terms of any subcontract should be very carefully drafted. The terms **plainly** state that the carrier has contractual remedies against a subcontractor (BNC CDP)

In order to annotate examples such as (24) and (25), we have considered that the utterances with *clearly* and *plainly* are roughly paraphraseable by ‘it is clear that...’ and ‘it is plain that...’, respectively, although the paraphrase lays emphasis on the evidential meaning and bleaches the meaning of manner. Nevertheless, the possibility of this paraphrase has motivated our decision to annotate these cases as evidential.

5 Conclusions

This paper has described a number of factors that have provoked inter-annotator disagreement in the initial annotation experiments carried out with a number of epistemic and evidential English adverbials. The nature of these factors is diverse: two of them, interrogative structures and clausal scope, could be classified as syntactic, although they need to be explained in terms of the meanings of the structures involved. Other factors concern the meaning of the adverbials themselves in certain contexts, concretely the meanings of impossibility, manner and firm decision, as well as the relationship between evidential and epistemic meanings. Finally, other factors are related to the meaning of the clause in which the adverbials occur (generic statements) or the meanings of other expressions in the surrounding linguistic contexts, such as epistemic lexical verbs or gradable adjectives or adverbs.

In all the cases described here, solutions have been provided for prospective annotation. The application of these solutions (and others to be provided) should result in a high degree of inter-annotator agreement by experts in the second experiment contemplated in the project. The confirmation of this agreement is to be followed by annotation by non-experts. Before embarking on the annotation tasks, these annotators are to receive instructions, which will include these problematic cases and the respective solutions. This procedure should lead to robust annotation systems of epistemic modality and evidentiality that guarantee

a high degree of inter-annotator agreement not only among experts, but also among non-experts.

References

- Lloyd B. Anderson. 1986. Evidentials, paths of change, and mental maps: Typologically regular asymmetries. In: Wallace Chafe and Johanna Nichols (eds.), *Evidentiality: The Linguistic Coding of Epistemology*. Ablex, Norwood.
- Douglas Biber, Stig Johansson, Geoffrey Leech, Susan Conrad and Edvard Finegan. 1999. *Longman grammar of spoken and written English*. Longman, London.
- Kasper Boye and Peter Harder. 2009. Evidentiality: linguistic categories and grammaticalization. *Functions of Language*, 16.1: 9-43.
- Pieter Byloo, Richard Kastein and Jan Nuyts. 2007. On *certainly* and *zeker*. In: Mike Hannay and Gerard J. Steen (eds.), *Structural-functional Studies in English Grammar*. John Benjamins, Amsterdam/Philadelphia.
- Marta Carretero and Juan Rafael Zamorano-Mansilla. Forthcoming. Disentangling epistemic modality, neighbouring categories and pragmatic uses: The case of English epistemic adverbs. *Collection linguistique Épilogos*.
- Marta Carretero. 2004. Levinson's *Presumptive meanings*: a neo-Gricean approach to pragmatics. In: Marta Carretero, Honesto Herrera-Soler, Gitte Kristiansen and Julia Lavid, (eds.) *Estudios de lingüística aplicada a la comunicación*. Universidad Complutense, Madrid.
- Wallace Chafe. 1986. Evidentiality in English conversation and academic writing. In: Wallace Chafe and Johanna Nichols (eds.), *Evidentiality: The Linguistic Coding of Epistemology*. Ablex, Norwood.
- Jennifer Coates. 1983. *The Semantics of the Modal Auxiliaries*. Croom Helm, London.
- Peter Collins. 2009. *Modals and Quasi-modals in English*. Rodopi, Amsterdam.
- Bert Cornillie. 2009. Evidentiality and epistemic modality: On the close relationship between two different categories. *Functions of Language*, 16.1: 44-62.
- Lars Hermerén. 1978. *On Modality in English: the Study of the Semantics of the Modals*. Gleerup, Lund.
- Leo Francis Hoyer. 1997. *Modals and Adverbs in English*. Longman, London and New York.
- Elly Ifantidou. 2001. *Evidentials and Relevance*. John Benjamins, Amsterdam/Philadelphia.
- Elise Kärrkäinen. 2004. *Epistemic Stance in English Conversation*. John Benjamins, Amsterdam/Philadelphia.
- Julia Lavid, Jorge Arús, Juan Rafael Zamorano-Mansilla. 2010. Designing and exploiting a small online English-Spanish parallel corpus for language teaching purposes. In: Mari Carmen Campoy-Cubillo, Begoña Bellés-Fortuño and María Lluïsa Gea-Valor, (eds.) *Corpus-based approaches to English Language Teaching*. Continuum, London.
- Julia Lavid. 2008. CONTRASTES: An Online English-Spanish Textual Database for Contrastive and Translation Learning. In Barbara Lewandowska-Tomaszczyk, (ed.) *Corpus Linguistics, Computer Tools, and Applications – State of the Art*. Peter Lang, Frankfurt.
- Julia Lavid. 2012. Corpus Annotation in CONTRANOT: Linguistic and Methodological Challenges. In: Isabel Moskowitz and Begoña Crespo, (eds.) *Encoding the Past: Decoding the Future: Corpora in the 21st Century*. Cambridge Scholars Publishing, Newcastle upon Tyne.
- Stephen C. Levinson. 2000 *Presumptive meanings. The theory of Generalized Conversational Implicature*. MIT Press, London, UK and Cambridge, USA.
- Carmen Maíz and Jorge Arús. 2008. Towards a diachronic study of modal adverbs: a case study of *certainly*. *Philologia*, 2008, 27-36.
- Marianne Mithun. 1986. Evidential diachrony in Northern Iroquoian. In: Wallace Chafe and Johanna Nichols (eds.), *Evidentiality: The Linguistic Coding of Epistemology*. Ablex, Norwood.
- Jan Nuyts. 2001. *Epistemic Modality, Language and Conceptualization: A Cognitive-Pragmatic Perspective*. John Benjamins, Amsterdam/Philadelphia.
- Jan Nuyts. 2005. The modal confusion: On terminology and the concepts behind it. In: Alex Klinge and Henrik Høeg Müller (eds.), *Modality: Studies in Form and Function*. Equinox, London.
- Frank R. Palmer. 1990 [1979]. *Modality and the English Modals*. Longman, London and New York.
- Michael R. Perkins. 1983. *Modal Expressions in English*. Frances Pinter, London.
- Anne-Marie Simon-Vandenberg and Karin Aijmer. 2007. *The Semantic Field of Modal Certainty. A Corpus-based Study of English Adverbs*. Mouton de Gruyter, Berlin and New York.
- Toril Swan. 1988. *Sentence Adverbials in English: a Synchronic and Diachronic Investigation*. Novus Forlag, Oslo.
- Gordon Tucker. 2001. Possibly alternative modality. *Functions of Language*, 8.2, 183-216.
- Anna Wärnsby. 2006. (De)coding Modality. The Case of *Must, May, Måste* and *Kan*. *Lund Studies in English* 113. Lund University, Lund.
- Juan Rafael Zamorano-Mansilla and Carretero, Marta. (in press). An annotation scheme for dynamic modality in English and Spanish. In: Maite Taboada, Susana Doval Suárez and Elsa González Álvarez (eds.) *Contrastive discourse analysis: Functional and corpus perspectives*. Equinox, London.