A Corpus-Based Analysis of the Meaning and Function of *Although*

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ABSTRACT

The extent to which semantic and pragmatic descriptions of linguistic phenomena should be based on naturally occurring language is subject to debate. In the case of discourse markers and connective expressions, most research remains at a theoretical level, despite the increasing interest in the use of corpora for linguistic analysis in the last decades. We undertake a corpus-based analysis of the meaning and function of *although*, drawing on previous descriptions of this unit formulated from different theoretical perspectives (discourse analysis, pragmatics, semantics). We aim to contribute empirical evidence for certain claims made in the literature, and to complement such descriptions with our findings. The study focuses on the type of contrast expressed by *although*, the elements of the contrast relation and the structure of the information. First, the theoretical background for the particular issues we study is presented. Then, the objectives and methodology are explained, and results discussed.

KEYWORDS: corpus analysis, although, discourse markers, conjunction, semantic analysis, pragmatic analysis

RESUMEN

La medida en que las descripciones semánticas y pragmáticas de fenómenos lingüísticos deberían basarse en el lenguaje natural está abierta a debate. En el caso de los marcadores discursivos y expresiones conectivas, la mayor parte de la investigación se realiza en el plano teórico, a pesar del creciente interés por la utilización de córpora para el análisis lingüístico. Presentamos un análisis del significado y la función de *although* basado en un corpus, partiendo de las descripciones de esta unidad formuladas desde distintas perspectivas teóricas (análisis del discurso, pragmática, semántica). Pretendemos contrastar empíricamente algunas afirmaciones realizadas en la bibliografía, y complementar tales descripciones con nuestros resultados. Analizamos el tipo de contraste expresado por *although*, los elementos de la relación de contraste y la estructura de la información. En

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primer lugar, se presenta el marco teórico de las cuestiones estudiadas. Seguidamente, se explican los objetivos y metodología del trabajo y se discuten los resultados.

PALABRAS CLAVE: estudio de corpus, although, marcador discursivo, conjunción, análisis semántico, análisis pragmático

I. INTRODUCTION

The debate on how pragmatic theory should consider language in use to reach advances in the description of linguistic phenomena is today an alive one. The deductive approach maintains that theory is attained without necessarily taking into account language samples, while the inductive approach relies on language samples to construct knowledge (Pons, 2008: 1353-54). The empirical approach to the study of discourse markers using corpora of naturally-occurring instances complements former, more formal descriptions of these units (cf. the special issue on empirical data and pragmatic theory by *Journal of Pragmatics*, 2008). It is in this trend that our study on the meaning and function of *although* is set out. We undertake a corpus-based analysis of several features of this conjunction that have been formulated from different analytic approaches, for which empirical evidence has not been provided. We aim to check the applicability of theoretical descriptions of *although* (notably Iten, 1998; Iten, 2000; Fraser, 1998) against naturally-occurring examples, so as to complete them with a quantitative and qualitative corpus analysis. First, the theoretical background for the particular issues we study is presented. Then, the objectives and methodology are explained, and results discussed.

II. DESCRIPTIONS OF *ALTHOUGH*

Descriptions of *although* in the literature from traditional grammar to pragmatics provide a range of approaches to explain its function in language and discourse. In general, theoretical descriptions are based on created examples (cf. Iten, 2000; König, 1985; Quirk *et al*., 1985). Syntactically, Quirk *et al.* (1985: 998) describe *although* as a simple subordinator which introduces a concessive clause. In the sentence-final position, it can imply "some claim of the speaker" (Quirk *et al*., 1985: 642 footnote), and it is, together with *though*, the most versatile among concessive subordinators: it can relate clauses in which the situations are similar (*Although Sam had told the children a bedtime story, June told them one too (anyway)*). Also, "concessive clauses indicate that the situation in the matrix clause is contrary to expectation in the light of what is said in the concessive clause" (Quirk *et al*., 1985: 1098). Such characterization remains too simple: the semantic description of the clauses related is too general, and the distinction between 'subordination' and 'coordination' has since long been questioned (cf. Haiman & Thompson, 1984, but Iten, 2000), also with respect to concessives (cf. Harris, 1988: 91).

Semantically, Harris (1988: 76-77) describes *although* as a conjunction that in contemporary English has a narrowly limited semantic range, being limited to the

concessive value. Diachronically, however, *although* results from a conditional conjunction which developed a conditional concessive value, from which a more narrowly concessive value developed. König (1985) describes *although* by contrast with *but*. These connectives typically express concessivity ('Q although P'/'although P, Q') and adversativeness ('P but Q'), respectively. The main difference between them is that their non-logic implications are different: in 'although P, Q', the non-logic implication is that 'normally if P, then no-Q', while in the 'P but Q' structure Q carries more weight (König, 1985: 6). To him, concessives are a special kind of adversatives, and *but* and *although* can express both relations. However, he does not elaborate on their differences.

From a synchronic perspective, the distinction between adversative and concessive values is an issue addressed in numerous studies but seldom clearly resolved. Sidiropoulou (1992: 204-206) explains that *although* can be analyzed according to two interpretations: in 'Although P, Q' we may interpret a "Shared implicature Concession" or a "Speaker's Attitude Concession". The first interpretation is equivalent to König's concession (Q although P/Although P, Q) and the second one corresponds to the adversative "P but Q". The second interpretation signals a change in the speaker's attitude with respect to what follows or precedes the *although* conjunct. That is, *although* can signal what attitude (positive or negative) the speaker has on what he/she says. However, although this distinction explains cases like "Your job is well paid although it's exhausting" (negative attitude) vs. "Although your job is exhausting, it is well paid" (positive attitude), it does not satisfactorily explain other cases: "This way is longer although it's nicer" conveys a positive attitude (I'll take it). Rather, it seems that the speaker's attitude may depend on the contents of the propositions. Similarly, Winter and Rimon (1994) also consider the issue of adversative vs. concessive *although*, but they do not carry out a detailed analysis of its meaning.

The discourse-pragmatic perspective has not provided a detailed description of *although* either. Fraser (1998: 313-314) considers it to be a discourse marker, that is, a pragmatic marker: a linguistically encoded cue which signals the speaker's potential communicative intentions. More specifically, discourse markers signal how the speaker intends the basic message that follows to relate to the prior discourse, and their meaning does not contribute to the representative sentence meaning (Fraser, 1990: 387); it is procedural, not conceptual (Fraser, 1998: 302). Fraser (1998) describes *although* by comparing it with *however*: he affirms that "*although* is equivalent to *however*", and in 'S1. However S2' and 'S1, although S2' *however* signals that the first segment is being emphasized, whereas *although* places priority on the second segment (Fraser, 1998: 313-314). The features distinguishing them in other positions such as sentence-initial *although* are not specified. From a textual approach an interesting study is Noordman's (2001), which focuses on the types of semantic and textual relations expressed by *although*.

The most comprehensive account of *although* comes from the Relevance Theory framework. Iten (1997, 1998, 2000) maintains that this concessive connective has a meaning which is difficult to capture, as it lacks a reference and it does not contribute to the truth conditions of the utterances in which it occurs (that is, its suppression does not affect the truth of the utterances that contain it, nor alters the meaning of the sentence where it appears). Iten examines the syntactic and semantic differences between *although* and *but*. First, in order to achieve the same interpretation for *Q although/Although P, Q* and *P but Q*, *but* must introduce Q, while *although* introduces P (Iten, 2000: 2-3). Second, *but* is a coordinating conjunction and *although* a subordinating conjunction, so their syntactic restrictions are different. This explains that *although* can replace *but* only in a relatively restricted subset of examples: those in which the intended interpretation is one of denial of expectation, that is cases where the *but* clause (direct denial) or an implication of the *but* clause (indirect denial) is the negation of an implication derived from the first clause (Iten, 2000: 4-5). Her main contribution is a definition of the meaning of *although* in terms of procedure (it does not encode conceptual information): "*although*, in utterances of the form *Q although P/Although P, Q*, encodes a procedure along the lines [...] Suspend an inference from what follows (i.e. *P*) which would result in an unresolvable contradiction" (Iten, 2000: 25). Iten explains this in the following example (2000: 25-26):

(1a) Peter went out *although* it was raining.   Q although P
(1b) *Although* it was raining, Peter went out.   Although P, Q

In (1a) the hearer processes Q (*Peter went out*) and then *although* indicates that there is an inference from P that s/he has to suspend because it would result in a contradiction. When reading P (*it was raining*) the assumption that people do not usually go out if it's raining becomes immediately accessible. This assumption licenses an inference from *it was raining* to *Peter didn't go out*, which would contradict the proposition expressed by Q (i.e. *Peter went out*). One last interesting observation in this account is the difference in acceptability or ease of processing between utterances of the form *Q although P* and *Although P, Q.* According to Iten (2000: 29-30), there is a tendency to prefer utterances of the form *Although P, Q*, which is explained in processing terms. The same processing effort is required to process these structures with concessive *although* (in the sense described by König earlier in this section; (1a) and (1b)) and there is no difference in acceptability. However, when *although* has an 'adversative' meaning (as used by König; illustrated by Iten (2000) in (2a) and (2b)), where the suspended inference is from P to the negation of an implicature of Q (*He is a good runner*), more processing effort is required. The different implications in concessiveness and adversativeness are illustrated in figure 1.

(2a) He has long legs *although* he is a bit short of breath.   Q although P
(2b) *Although* he is a bit short of breath, he has long legs.   Although P, Q

(the implicature of Q: He is a good runner)

(the assumption that combines with P to license the suspended inference: If X is short of breath, X is not a good runner).

Concessiveness

Typical form:	although P, Q
Entailments:	P, Q
(non-logical) implication:	Normally (if *P*, then not-*Q*)

1.a. Peter went out although it was raining.
1.b. Although it was raining, Peter went out.

Normally If "rain", not "go out"   Q = "go out"

Adversativeness

Typical form:	*P* but *Q*
Entailments:	*P, Q*
(non-logical) implication:	*P*→ *R*, *Q* → not-*R*, *Q* carries more weight

Q → not-R he is a good runner   *If X is a bit short of breath, then X doesn't have long legs*

P → he is not a good runner

2.a. He has long legs **although** he is a bit short of breath.   Q although P
2.b. **Although** he is a bit short of breath, he has long legs. Although P, Q

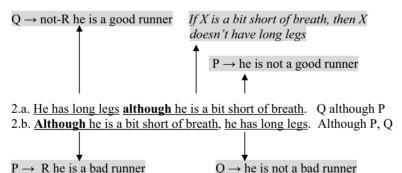P → R he is a bad runner   Q → he is not a bad runner

Figure 1. A representation of concessiveness and adversativeness according to König (1985) with examples by Iten (2000: 29-30).

Apart from these formal syntactic and semantic-pragmatic descriptions of *although*, other aspects of its meaning have been dealt with in the literature. Iten (1997), König and Siemund (2000) and Noordman (2001) focus on the link between concessivity and causality, which means, broadly speaking, that the concessive relation contains an underlying causal relation. Noordman's study (2001) considers the order of the underlying causal relation (default: cause-consequence, vs. reversed: consequence-cause) and its effects in the processing effort involved in reasoning.

These descriptions of *although* constitute the main framework for our study. Some other theoretical distinctions and formalizations we use are presented in the next section.

III. THE STUDY

The point of departure of our analysis of *although* is the study of the type of contrast it expresses in our corpus. The expression "type of contrast" that we use reflects the elements involved in the CR. The first type of contrast we consider is called "denial of expectation". It applies to those cases in which an underlying expectation from the first element of the CR (an inference derived from it, an implicature) is negated in the second element. This type of contrast includes the types of relation with *although* that Noordman (2001) names semantic, pragmatic and speech act relations, following Sweetser's (1990) three domains of interpretation for *although.* We distinguish, however, between the cases in which the second element of the CR is the exact negation of the C implicature of the first element (contrast type 1), and those cases where the element that negates the C implicature is an implicature of the second element (contrast type 2). Thus, we use the distinction between the two ways the implicature is negated pointed out by Blakemore (direct denial and indirect denial, 1989), and also mentioned by Iten (2000). Type 3 is equivalent to Noordman's (2001: 159) "concessive opposition": there is no negated expectation but the elements connected by *although* express opposed arguments (cf. example (3))

(3) Although that fiscal regulation yields much money, it is not fair (context: a discussion on whether to maintain or not a fiscal regulation) (example from Noordman, 2001: 159).

Even if it can be claimed that in this type of CR (contrast type 3) it is always possible to find an implicit expectation (*I am for the regulation*) negated by the second element (the implicit proposition *I am not for the regulation*), some cases in the corpus seem to be more adequately described in terms of two opposed arguments. Type of contrast 4 in our analysis refers to "mere contrast": the speaker only expresses the difference between the facts or events described in the propositions. Although this type of contrast is more typical of other connectives, like *while*, we find that in some cases the writer does not seem to say "more" than merely stating the contrast (without any contrasting inferences). Ford (2000: 282) describes the meaning of *while* as "neutral contrast" in the following example:

(4) In our recordings, men produced 10 instances of irony, while women produced 11.

The analysis of naturally-occurring sentences reveals difficulties in assigning a single interpretation of type of contrast in a considerable number of cases. We have then used the notation 1/4, 2/3, etc. to mark the cases where two types of contrast could be interpreted.

We borrow Grote *et al.*'s (1997: 95) formalization of the concessive relation to study its elements in our corpus, namely some aspects of their occurrence:

On the one hand, A holds, implying the expectation of C. On the other hand, B holds, which implies Not-C, contrary to the expectation induced by A.

To be more illustrative, one can think of A as the "although"-part, B as the "because"-part, and Not-C as the "nevertheless"-part. The situation corresponds to what Lakoff (1971) described as "denial of expectation".
[…]
A => C ('default rule')
B -> Not-C

This formulation is adequate to describe the types of contrast 1 and 2 (expectation negated by a proposition or by an implicature). However, we have adapted this formulation to describe those cases where *although* introduces the second element of the CR. With the ordering main-subordinate, we call the first element (initial main clause) "Fact" instead of "Not C", as C has not been derived yet (A is stated last). "Fact" generates the expectation C, and A, the *although*-part, negates this expectation (it is equivalent to the Not C element in the subordinate-main ordering). With the type of contrast "two opposed arguments", with no negated expectation, Grote *et al*.'s formulation is not suitable. We then call the elements of the CR "argument 1" and "argument 2". The elements of the "mere contrast" cases are referred to as "main" and "subordinate".

In studying the type of information introduced by the marker, we use the known vs. new information distinction, equivalent to Dik's (1997: 311-312) "given/new distinction", as well as the cognitive distinction background vs. foreground (cf. Chen, 1991).

To explore the structure of the underlying causal relation in our *although* sentences we follow Noordman (2001). We consider the link between the kind of information *although* introduces (new vs. known/given) and the structure of the underlying cause-consequence relation.

IV. OBJECTIVES

This study seeks to identify the most salient features of the expression of contrast with *although* in a corpus of research articles. We aim to assess the degree of implicitness/explicitness of contrast relations (CRs) signalled by this connective, and to understand its meaning and function in the corpus, for which purpose we apply a suppression test. Also, we aim to determine the types of contrast (the type of opposition) expressed by this connective in the corpus articles, and their frequency. The second major objective is to characterize the way in which this connective contributes to the organization/presentation of information, and its role in the creation of meaning. To this end, we study the ordering of the concession parts, and observe which of the basic elements of the CR appear explicitly expressed and in what position; we analyse the type of information *although* introduces along the distinction new/known information and we try to recognise contents or types of information that tend to appear as new information and as known

information. Finally, we seek to identify the causal relation underlying the contrast relation, to assess how the causal order (cause–consequence vs. consequence–cause) interacts with the expression of contrast in the CR and how it affects its comprehension.

V. METHOD

The corpus contains approximately 250,000 words, from which 100 instances of *although* are collected. It is drawn from 22 linguistics articles from *Journal of Pragmatics* (from January 2000 to January 2003), all presumably written by native speakers of English. The instances were introduced in a database (Microsoft Access) and analyzed according to the aspects mentioned in previous sections. The data of the analysis were also introduced in the database. This tool enabled us to consult and manipulate data quickly and efficiently, especially as it allowed for the combination of fields or parameters of the analysis to extract complex results. The automatic treatment of data seemed suitable for the amount of information used, and allowed us to obtain results from a different perspective than that found on the literature on *although*.

VI. RESULTS AND DISCUSSION
VI.1. Meaning of *although*
VI.1.1. Types of contrast expressed by although

Although expresses in the corpus the four types of contrast that we have distinguished. Predominantly *although* expresses a contrast involving denial of expectation: an expectation generated from the first element of the CR is negated in the second element (69 instances, discounting the cases with overlapping types of contrast, or 73,4% of the occurrences of *although*). The denial of expectation is carried out in a similar number of cases through an explicit proposition (the second element of the CR negates the C implicature) and through an implicature derived from the second element. *Although* indicates a contrast between two opposed arguments (argumentative contrast) in 22 occurrences, but another type of contrast can also be interpreted in all of these cases. It seems that these two types of contrast are not exclusive, but rather that the denial of expectation is possible when two arguments are opposed. Mere contrast is rarely expressed (3 cases), and it is in every instance compatible with another type of contrast. Mere contrast seems rather exceptional for *although*.

VI.1.2. Meaning

The procedural meaning encoded by *although* defined by Iten (2000) adequately describes all the instances in our corpus. We find that this marker can always express a contrast with a denied expectation, even in those cases where mere contrast and an argumentative interpretation seemed clear. In conclusion, if *although* can express in every case in our corpus a contrast with a denied expectation, it is because the procedure that it codifies refers to an inference that leads to an unresolvable contradiction.

VI.1.3. Suppression of the marker and procedural meaning

By suppressing *although* we seek to better understand its function as a device used to cancel other possible semantic or discourse relations that may hold between statements or text segments, and thus to determine its contribution to the interpretation of the CR. We may also assess the degree of difficulty in the interpretation of the statements without the marker. In the majority of cases its suppression yields a syntactically incorrect structure, as was expected from a subordinator. The marker facilitates the processing of the CR, even though the CR could be identified without the marker (for example semantic opposition or a comparative structure may indicate contrast). In a minority of cases among those syntactically incorrect, the CR would be difficult to process without *although*. The cases where the marker is necessary to signal the CR because it excludes other possible relations constitute a minority. We conclude that *although* tends to be syntactically required but it is often semantically unnecessary. Nevertheless, its instructions for the interpretation of the preceding or the following proposition clearly guide the reader towards the correct interpretation by reducing his/her cognitive effort to process the intended discourse relation.

The suppression of *although* must also be considered in the wider textual context. This marker often appears in a context where multiple markers signal different discourse relations (other CRs, causal relations, reformulations, etc.), reflecting the informative density and argumentative complexity of the RA in linguistics. The omission of the marker entails increased cognitive difficulty when interpreting the meaning of the fragment, which again points to its function as guide to the reader mentioned by Fraser (1998) and Iten (2000).

We now observe whether there exists a connection between the marker suppression and the order of the elements in the CR. Table 1 shows the results of the suppression test (90 cases considered):

Effect of suppression on CR	*Although* + 1st element (number of cases)	*Although* + 2nd element (number of cases)
The marker is necessary to indicate contrast: other (unintended) discourse relations are possible	2	6
Syntactically correct and easy to process	3	9
Correct but difficult to process	3	3
Incorrect but easy to process	32	12
Incorrect and difficult to process	12	8

Table 1. Suppression test

Without the marker the CR is still easy to process in 67% of the cases (35 out of 52) where *although* introduces the first element, and in 59% of the cases (22 out of 38) in which it introduces the second element. In 8 cases the marker is required to preclude the interpretation of other discourse relations, so it 'cannot' be omitted.

We conclude that *although* can be suppressed with a lower incidence on syntactic correctness when it introduces the second element, and that the difficulty of processing upon the suppression of the marker is also higher when *although* introduces this element. These findings may point to its closer nature to coordination conjunctions in this position.

VI.2. The structure of information with *although*
VI.2.1. The elements of the CR

As discussed above, the two orders of clauses generally mentioned in theoretical descriptions of *although* (main clause–subordinate clause, subordinate clause–main clause):

[1] although p, q   [A (>C), Not C]

[2] q, although p   [Fact (>C), A (Not C)]

do not adequately describe the totality of cases in our corpus. We require formalizations accounting for other, hybrid orderings. We propose the following:

[3] Fact (C1 and C2), A (Not C1) (where Not C1 is equivalent to C2)

[4] Subject Not C – A (>C) – Not C

Unlike in [2], where no implicature seems available in the "Fact" element until it is cancelled in A, in [3], the fact statement in the first element contains both the C expectation that is cancelled in the second element and a second expectation which suggests that C is going to be cancelled: a word or expression that suggests that some information from this element contrasts with another information not yet available (it will be made available in the second element, after *although*). In general, it is some type of negation in the first element that triggers this suspicion. Thus, type of contrast [3] contains two implicatures, C1 and C2. It would be equivalent to "Fact (>C and Not C), A (Not C or C2)".

For example, a negated verb, as in (5), suggests that the action or the contrary case are possible ("does not convey" suggests the possibility that it 'might as well convey').

(5) ["… does not convey …, nor does … convey…"]

Although thumbs are fingers [...], the use of finger may convey 'non-thumb' given the existence of thumb as a functional alternative to finger [...]. But the use of finger does not convey 'non-pinky (finger)', nor does the use of toe convey 'toe other than the big toe',

ALTHOUGH the big toe, qua plump inside digit, is the structural analogue of the thumb. [Horn, L.R. (2000). From if to iff: Conditional perfection as pragmatic strengthening. *Journal of Pragmatics*, vol. 32:3]

Ford (2000: 288) refers to these cases as "cases where a negative clause implicitly [indexes] a corresponding affirmative", since "Cases of negation can be understood as responding to or constructing a context in which the corresponding affirmative is relevant or assumed.

The formalization in [4] accounts for the possibility of *although* to appear in apposition, in between the subject of Not C and its predicate. *Although* introduces an atypical clause, subjectless and often verbless. With *although* the writer refers to something in a shortened form to immediately deny the expectation C derived from the *although* clause. With this pattern, *although* expresses a contrast in the background, since the Not C part constitutes the frame of the sentence.

VI.2.2. Frequency of the patterns

Table 2 shows the number of cases in which each pattern is used in our corpus. The most frequent ordering is that beginning with the *although* part (patterns [1], [6] and [7]—the latter represent those cases in which two kinds of contrast can be interpreted: denial of expectation and two opposed arguments or mere contrast): 52 cases out of 94. The ordering with *although* introducing the second part appears in 37 cases (patterns [2], [3], [2/5] and [8]), while the ordering with the *although* part in apposition ([4]) is recorded in 5 cases.

Order of the elements	Number of cases
[1] A (> C) - Not C	42
[2] Fact (> C), although Not C	24
[3] Fact (> C1 and C2) - A (> Not C1)	2
[4] Subject of Not C - A (> C) - Not C	5
[7] 1/6	10
[8] 2/5	11

(Note 1: [5] main clause – although – subordinate; [6] although subordinate – main clause)
(Note 2: among the 6 cases discarded for the analysis, *although* introduces the first element in 4 cases and the second in 2)

Table 2. Order of the elements of the CR with *although*

As mentioned by Mann and Thompson (1988), Noordman (2001), Iten (1998, 2000), in the corpus *although* presents the prototypical ordering of subordinate clauses, preceding the main clause, in the majority of cases (in 56 cases, i.e. 59,6% of the total cases analyzed).

The orderings with the *although* clause as the second element of the CR and *although* in apposition represent 39% and 5,2% of cases, respectively. It is thus empirically confirmed that the cognitively more natural ordering of the concession parts is the most frequent one in our corpus. However, the ordering that involves more processing effort (the *although* part as the second element) presents a high percentage of cases, suggesting that this way of presenting information, with the new or rhematic information in the *although* element, is useful for the writer for some reason, as is explained in section VI.3.1 below.

In trying to determine if there is a relation between one particular ordering and a specific type of contrast, we find that the initial *although* part is clearly associated with the type contrast "denial of expectation" (all the cases can be interpreted as denial of expectation). Type of contrast [3] ("two opposed arguments") is also found with this ordering, but it is proportionally more frequent with the *although* part as the second element of the CR. With *although* introducing the second element, "denial of expectation" is also the type of contrast that can be interpreted in all the cases. "Two opposed arguments" ([3]) and "mere contrast" ([4]) are mainly associated with this ordering ("mere contrast" occurs only with this ordering). As there are few cases of *although* in apposition, we can just state that all four types of contrast can be expressed with this ordering.

VI.2.3. Expression of the elements of the CR

The elements A, Fact and Not C are always explicit, while B and C may also be implicit. We associate their appearance with greater ease of processing of the CR. According to Grote *et al*. (1997: 96), C may be presupposed. Since it encodes general world knowledge (a rule of cause and effect, a customary expectation, or some reason which is mutually known), it may not be explicitly communicated. Likewise, B can be unverbalized when it is irrelevant or unknown. We investigate whether these elements are explicitly communicated in research articles. Due to the density and complexity of the information and argumentation presented in them, we expect to find these non-obligatory elements explicit in a number of cases.

The analysis clearly indicates a tendency not to state B: it is explicit in 22 cases (23,4% of the cases) and unverbalized in 72 cases (76,6% of the cases). Sometimes the writer uses a contrast that does not seem to require an explanation, for instance when introducing new information or a new topic.

When B is explicit, it helps to understand the CR. B generally presents a more elaborated idea, an argument or an explanation to something new or contradictory. In (6) B (italized) offers an explanation to the contradiction. In (5) above, the presence of B (*given the existence of thumb as a functional alternative to finger*) makes it easier for the reader to process an argumentation that may seem confusing, sparing him/her the effort to derive this element from his/her world knowledge.

(6) When applied to the individual strategies, the model of main effects for speaker sex and group composition is significantly better than any other variations on the model, ALTHOUGH the model is marginally off reaching significance itself. *This is primarily because the expanded contingency table is much sparser than the table in which all the functions are collapsed into four overall categories.* [Hay, J. (2000). Functions of humor in the conversations of men and women. *Journal of Pragmatics*, vol. 32:6]

The place of B in the CR is another interesting aspect of the expression of the CR. B is found before A (or Fact) and Not C, in between them, or following them. The medial position is justified from a cognitive viewpoint: the reader might have derived the C expectation from the first element, and then B informs about a new element at stake that might interfere with C. The final position is also a motivated one because B resolves the expectation contravention: first the contrast is expressed, next it is justified.

Appearance of B	Order of the elements	Number of cases
No		72
Yes	A - Not C - B	9
	Contained in Not C (subject of Not C) / Fact - Not C/B	1
	Contained in Not C; A (> C) - Not C/B	1
	Fact (> C) - Not C - B	6
	Fact (> C1 and C2) - A (> Not C1) - B	1
	Subject of Not C - A (> C) - Not C - B	3
	Subject of Not C - A (> C) - Not C- B - Not C	1

Table 3. The B element and the order of the elements of the CR with *although*

Table 3 shows that the final position in the CR is the most frequent one among the 22 cases where B appears. In contrast, there is only one case in which B is found medially, between A and Not C. The ordering of the elements A, Not C and Fact does not affect the position of B.

In a few cases B is contained in Not C, being part of the meaning of Not C. This is illustrated in (7), where Not C contains the reason why the contrast is established (B would be something like "literal meaning should be included in a theory of utterance interpretation because speakers analyze it as part of their understanding of what the speakers imply").

(7) ALTHOUGH I see no reason to posit a level of literal analysis in a theory of utterance interpretation, I now agree that people distinguish between what speakers say and implicate,

that both aspects of speaker meaning involve substantial pragmatic knowledge, and that people may analyze what speakers pragmatically say as part of their understanding of what speakers imply. [Gibbs Jr., R.W. (2002). A new look at literal meaning in understanding what is said and implicated. *Journal of Pragmatics*, vol. 34:4]

Now, how clearly is B cognitively made available to the reader in terms of explicit signalling, thus contributing to ease of processing? Only in 5 out of 22 cases of explicit B is this element introduced by a causal preposition or a causal conjunction (*as, because, due to, since*). Other means to mark B quite clearly are certain verbs (*given, to make*, use of the gerund with a causal meaning) and several markers that are typically used to signal other discourse relations, such as *e.g., for example, to illustrate, and as such, with regard to, in effect*. In 6 cases juxtaposition of sentences makes for the transition to the B element. We conclude that B is usually difficult to identify due to the diversity of ways (if any) in which writers introduce and express it.

As for the C element (the implicature derived from the first part of the CR and cancelled in the second part), we have not found any explicit case in our corpus. Thus the possibility of C being unverbalized mentioned by Grote *et al*. (1997: 95-96) turns out to be the only situation in our corpus. This corroborates Di Meola's (1998, in König and Siemund, 2000: 348) statement that the cause explaining that what is expected to occur does not in fact occur is hardly ever linguistically codified.

The C expectation is often difficult to extract as the contents of the CR in our examples refer overwhelmingly to abstract relations, notions and events that can only be observed in our minds. It is easy to derive C from "Although it's raining I will go out" (*Generally one does not go out when it rains*), as the events in this sentence are observable in the world. Example 8 illustrates the abstract nature of this implicature in our corpus:
(8) He also notes that 'action' results when people are invited to participate in and eventually decode an advertisement. This decoding seems somewhat akin to the pleasing satisfaction of completing a crossword or the getting to grips with a complex literary work, ALTHOUGH Bernstein's lack of precision about what products need to be marketed through tickle advertising suggests that [...]. [Simpson, P. (2001). 'Reason' and 'tickle' as pragmatic constructs in the discourse of advertising. *Journal of Pragmatics*, vol. 33:4]
C: how these ads work is well-known

We experience the difficulty in identifying C especially when *although* introduces the second element of the CR (cf. Iten, 2000: 29-30). From the reader viewpoint, the C implicature of the initial Fact element is usually derived only after the second element (with *although*) is read. Thus the yet underived C is cancelled when reading the second element, increasing the difficulty of processing the CR. When reading the first element, before

although appears, the reader generally does not suspect that an implicature is going to be cancelled, s/he may not be anticipating a turn in the exposition or argumentation.

In summary, the difficulty of deriving the C implicature in our corpus is not only linked to the position of the *although* element in the CR, but it is also clearly connected with the understanding of the contents of the text and its argumentation. It is often determined by the access to the shared knowledge the author assumes on the part of the reader and thus by the reader's capacity to derive appropriate inferences from abstract contents. Thus, C is not often immediately available, contrary to what theoretical descriptions claim (e.g. Grote *et al*.). We can then consider its implicitness a feature of the disciplinary genre studied.

VI.3. The presentation of the information with *although*
VI.3.1. Background and foreground information

Although presents information as known/given in the thematic position when it introduces the first part of the CR, and presents information as new in the rhematic position when it occurs in the second part. In our corpus *although* tends to introduce the first part of the CR, so it usually sets information to the background position, as given/known. We observe that the information in the background is rhetorically less prominent or interesting than that presented in the new or foreground position. In some cases, *although* introduces in the background some information that readers may already have, and in the foreground or new information position the view on the topic that s/he defends in his/her work.

Where *although* introduces new information, this is often an opinion, a thesis, position or claim of the author, while those of other authors or studies are presented in the first part (given/known). Thus the distribution of information according to the distinction given/known/background vs. new/foreground allows the writer to highlight the information that is directly related to him/her in the eyes of the reader. In (9) the CR opposes the use of a concept by some authors and the writer's own definition:

(9) Ervin-Tripp and Lampert (1992) found women more likely to use humor as a coping strategy, ALTHOUGH the definition I have used of coping has much wider scope than theirs [...] . [Hay, J. (2000). Functions of humor in the conversations of men and women. *Journal of Pragmatics*, vol. 32:6]

In other cases, the new information position is reserved by the author to present information that in general backs his/her study, makes it relevant or underpins his/her position or argument. This position is also used by the writer to present his/her opinion, a claim or a statement of his/her position. When data are obtained from empirical studies, the background position is used to present data while a specific datum, an observation or a comment is highlighted in the new information position.

In short, *although* is used by the writers to exploit the background and foreground perspective in the presentation of information with rhetorical or argumentative purposes.

The position of foreground is used to present new information related to the author, his/her contributions, results, opinions and claims. In this way s/he leads the reader from one topic to another, helping him/her to understand the argumentation.

VI.3.2. New and known information and type of contrast

We observe the following tendency: when the contrast expressed with *although* involves a failed expectation, whether negated explicitly or through an implicature, the information it introduces is "known", that is, it introduces the first element of the CR.

VII. CONCLUSIONS

The starting point of this study was the assumption that a corpus-based approach can provide empirical evidence for a semantic/pragmatic theoretical description of *although*. We have undertaken to study how this conjunction functions in naturally-occurring examples by focusing on different aspects of its meaning. Some of these aspect have been dealt with in the literature (type of contrast, order of the clauses), some have not (appearance of the elements of the CR, description of their function in presenting information, the combined study of different parameters to obtain a different viewpoint on the function of *although*). Our first contribution to the description of *although* has consisted in an adaptation of the existing theoretical framework to adequately account for the CRs in our corpus, namely the specification of the types of contrast expressed by *although*, and the formulation of the various orderings the concessive relation displays in the corpus. Our other contributions lie in the analytical evidence supporting Iten's procedural description and in a series of tendencies observed on different semantic/pragmatic aspects not empirically studied before.

Although is used to signal the four types of contrast that we have distinguished, but it is principally used to express denial of expectation. It is noteworthy that this interpretation is always possible even when another type of contrast may be intended (including "mere contrast"). This feature suggests that *although* is linked intrinsically to the subjectivity of the author. With reference to the distinction between concessivity and adversativeness, we associate the type of contrast "denial of expectation" with the value of "expectation contravention" and "unexpectedness" of concessivity defined by Lakoff (1971) and Quirk *et al*. (1985). Thus, the procedural meaning defined by Iten (2000) for *although* as an instruction to suspend an inference that would lead to an unresolvable contradiction adequately describes *although* in our corpus.

We have also found evidence supporting the claim that the association of *although* with concessivity is related to a certain unbalance between the parts of the relation, mentioned by Fraser (1998). This is manifested syntactically and cognitively, in the way *although* distributes the information in contrast in the foreground and in the background for rhetorical purposes. The study of its meaning has been approached as well by studying how it contributes to the processing of the CR. *Although* typically favours the identification of the

CR and undoubtedly contributes to facilitate its cognitive processing, but it is seldom required for the reader to recognize the CR. This marker is often one more signal of the contrast, among other means to signal it (lexical, morphosyntactic).

As for the ordering of the clauses, writers tend to adopt the prototypical ordering of subordinate clauses, which favours ease of processing. However, *although* introduces the second element of the CR more often than expected. This can be explained as a rhetorical strategy used by writers to situate in the foreground new information dealing with their own opinion, position or data, thus highlighting it. Finally, *although* is involved in CRs presenting a high amount of implicit information, particularly manifested in the few explicit instances of the 'optional' elements B and C.

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