

Teaching accentual focus to Catalan students of English

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1 Introduction

It is a common characteristic of languages that every time an element is focussed or highlighted, it is also accented, that is, it presents some kind of pitch variation. Literature on the relation between focus and accentuation (Vallduví, 1991; Vallduví & Zacharski, 1994; Kiss, 1995; Ladd, 1996) shows that whereas some languages (mainly Germanic) can modify their intonational pattern to achieve the focus/accent alliance, other languages (Romance) need other devices, such as word order movement, to attain the same link. This difference is illustrated in (1) and (2) for English and Catalan respectively. (1a) and (2a) present a sentence with a neutral or *broad focus* reading. (1b) and (2b) show a sentence with a *narrow focus* reading, that is, a sentence where a particular item is highlighted (PETER/EN PERE). (1b) and (2b) can be the answer to a question such as *who brought the books?*. In English, the strategies used to focus this item involve an accentual reorganisation (the main accent is located over the focussed word and post-focal material is deaccented). In Catalan, on the other hand, a syntactic shift rather than an accentual alteration occurs. The focussed element moves into a prominent position or accent-bearing location, namely, the end of the sentence.

- (1) a. Peter brought the books
b. PETER brought the books
- (2) a. En Pere va portar els llibres
b. Els llibres, els va portar EN PERE
(lit. the books, them brought PETER)

Vallduví (1991) and Vallduví & Zacharski (1994) claim that the cross-linguistic variation observed in Catalan and in English is the reflex of a *Plasticity Parameter* of intonation relative to focus. In [+plastic] languages, such as English, the relation between focus and prominence is achieved by accentual means. In [-plastic] languages, such as Catalan, the relation between prominence and focus is achieved through syntax.

This proposal involves that Catalan students of English should be taught a new strategy (accentual restructuring) when learning the focussing devices in English.

However, other studies on the ways of expressing focus in Romance languages, namely, Spanish (García-Lecumberri, 1995; Zubizarreta, 1998), French (Zubizarreta, 1998) and Portuguese (Frota, 1998), show that focus-signalling means are not so language-dependent and that a given language may use more than one strategy. Similarly, different strategies can be used more or less appropriately in distinct contexts. In Romance languages prosodic strategies are more likely to be used when narrow focus has a contrastive meaning than in other contexts.

The aim of this paper is threefold: 1) to examine to what extent Catalan speakers can use accentual strategies to signal focus, 2) to analyse which contexts promote the usage of accentual restructuring, and 3) to investigate the implications of the results on Catalan learners of English intonation. For the second goal, two narrow focus readings were investigated: focus triggered by *contrast* and focus triggered by *identification*. Contrastive focus involves the correction of an erroneous assumption, as in (3). Identification focus consists in retrieving a new piece of information as in (4). It is expected that in Catalan contrastive accentual focus is more acceptable than identification.

- (3) En Pere llegia llibres? LA ROSA llegia llibres
"Did Pere read books? ROSA read books"
- (4) Qui vivia a Roma? L'ANNA vivia a Roma
"Who lived in Rome? ANNA lived in Rome"

The hypotheses that Catalan speakers can use accentual strategies to convey focus and that accentual restructuring is more acceptable in contrastive contexts than in identification contexts

were tested by means of three tests: 1) a production test, 2) a perception test, and 3) an acceptability test. The first two tests were performed to investigate whether Catalan speakers could produce and recognise focus conveyed through an intonational reorganisation. The acceptability test was carried out to analyse how natural accentual restructuring is felt to be in this language as opposed to syntactic restructuring.

2 Production test

2.1 Experimental design: The production test was performed in two parts: a *reading* test and a *semi-spontaneous* test. The reading task was included to guarantee the acquisition of sentences with the major number of voiced sounds possible, so as to be able to perform a later acoustic analysis of the pitch (F0) traces. The semi-spontaneous test was included to give the informants more freedom to choose the kinds of strategies they prefer to signal the focal structure of the utterances, namely, intonational or syntactic strategies.

For each test 64 sentences were designed: 32 target sentences and 32 distractors, which were not analysed since their aim was to distract the informants from the purpose of the task. Target sentences consisted of Subject-Verb-Object simple declaratives, where narrow focus was expected either on the subject or on the verb. Narrow focus on the object was not covered due to its potential confusion with broad focus sentences. Distractors were sentences with a neutral reading.

For the reading activity, the speakers were given eight cards with eight sentences each (four targets and four distractors). Each sentence was the answer to a question posed by the researcher. Target sentences were responses to either a contrastive or an identification prompt. Since for the reading task the informants had no chance of using any focussing device other than accentual strategies, it was assumed that if Catalan speakers do not signal focus by accentual means, then sentences would be produced with a broad focus intonation. On the other hand, if they use accentual devices, this would involve the location of the nuclear accent on the focussed word and possible deaccenting of postfocal material.

For the semi-spontaneous activity, the informants were shown several pictures and were asked some questions related to them. As before, the questions triggered contrast or identification. Also distractors with a broad focus reading were included. In this task, the speakers had the choice to use accentual or syntactic strategies to answer the questions posed by the researcher.

Thirty-four subjects (seventeen male and seventeen female adult native speakers of the Central variety of Catalan) performed the two tests. The informants were between 24 and 32 years old at the time of the recording and came from the same village (Ripoll), located in the north-east of Catalonia.

The recordings included two simultaneous signals: *speech* and *laryngeal* (Lx) signals. The speech signal was recorded by means of a Marantz Superscope/CD 330 tape recorder and a Beyer Dynamic microphone. For the laryngeal signal, a portable laryngograph LX 12 with two electrodes was used. The laryngograph is an apparatus used to record vocal fold vibration. From this signal F0 traces can be processed. The recordings were conducted in a soundproof room. Overall, 2176 target sentences and 2176 distractors were obtained.

2.2 Analysis of the data: for both tests *auditory* and *acoustic* analyses of the data were performed. For the auditory analysis, the researcher listened to the target sentence and outlined their pitch movements. For the acoustic analysis, sentences were analysed by means of the Speech Filing System (SFS), where a simultaneous inspection of the speech waveform and the F0 trace was carried out.

2.3 Results: the target sentences of the reading activity were divided into two categories: 1) responses produced with accentual restructuring and 2) responses produced with a neutral or broad focus intonational pattern. The number of accentual narrow focus and broad focus responses obtained in the reading test for contrastive and identification contexts are presented in Figure 1. The results show that the signalling of focus by accentual restructuring is possible in Catalan both with a contrastive and an identification

reading. As expected, contrastive questions elicited more accentual focus productions (87.5%) than identification questions (69.3%). A t-test confirmed that the difference between the two variables is significant at 1 per cent ($p < 0.01$, $t = 6.15$).

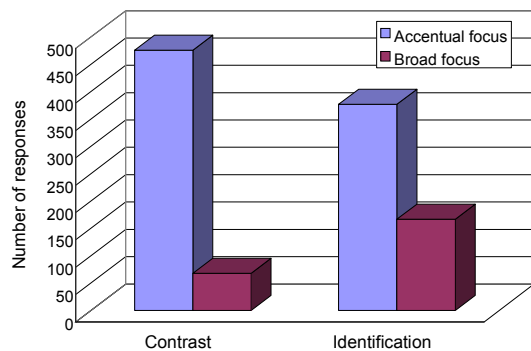


Figure 1: Results of the reading task.

The target sentences of the semi-spontaneous activity were divided into four categories: 1) sentences produced with accentual restructuring, 2) sentences produced with a broad focus intonation, 3) sentences produced with syntactic restructuring, and 4) other (i.e. unforeseen responses). The number of responses for each category is shown in Table 2.

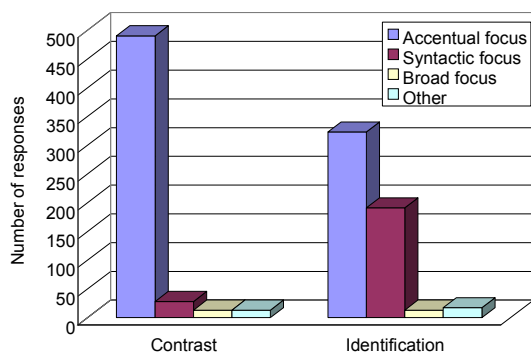


Figure 2: Results of the semi-spontaneous task.

The results of the semi-spontaneous task are similar to the ones obtained in the reading activity. Accentual restructuring is possible in Catalan and is more favoured with a contrastive reading (90% of the responses) than with an identification reading (59.4%). These differences are significant at 1 per cent ($p < 0.01$, $t = 7.33$).

3 Perception test

3.1 Experimental design: for the perception test listeners had to find out whether sentences produced with an accentual restructuring could be associated to a narrow focus reading. The stimuli used for this test were the utterances produced by one of the speakers in the production test (including the data of both the reading activity and the semi-spontaneous task). Overall, 128 stimuli were presented: 64 target utterances and 64 distractors (sentences with a broad focus reading). This test was performed by twenty-eight subjects (fourteen male and fourteen female) who had similar characteristics to the speakers that carried out the production test.

Subjects were asked to listen to the stimuli and find out the question that could trigger each answer in a multiple choice task. For each stimulus, the following three question types were presented: 1) a question that triggered narrow focus, 2) a question that triggered a broad focus reading, and 3) an unexpected question. The hypothesis was that if Catalan speakers cannot perceive narrow focus signalled by intonational means, then the stimuli produced with accentual restructuring will be perceived as answers to a broad focus type of question. The number of judgements obtained in the perception test was 1792 target responses and 1792 distractors.

3.2 Results: The judgements obtained for the target sentences were divided into three categories: 1) responses where accentual focus was perceived, 2) responses where the listener interpreted a broad focus reading, and 3) unexpected responses. The results of the perception test are presented in Figure 3, which shows the number of responses for each category in contrastive and identification contexts. The results show that the signalling of focus by means of accentual restructuring is robustly perceived by all listeners both with a contrastive and an identification reading. Contrary to the production test, no significant differences are observed for the perception of accentual focus in contrastive and identification contexts ($p > 0.01$, $t = 0.7$).

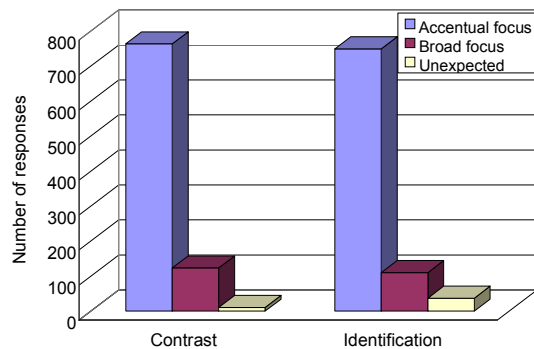


Figure 3: Results of the perception test.

4 Acceptability test

4.1 Experimental design: this test investigates the acceptability of accentual focus in Catalan as opposed to syntactic restructuring. The materials consisted of 64 sentences produced with accentual narrow focus (the same sentences used in the previous tests), 64 counterpart sentences produced with syntactic focus, and 64 distractors (broad focus sentences). For this test each stimuli consisted of both the triggering question and the answer since the acceptability of a given sentence could only be judged in the appropriate context. Twenty-eight speakers (fourteen male and fourteen female) with the same background as in the previous tests took part in this experiment. Subjects were given a transcript with the sentences and the corresponding questions and were asked to judge the acceptability of the stimuli as responses to a narrow focus triggering question (contrast and identification) within a scale of 4 (perfectly acceptable) to 0 (totally unacceptable).

4.2 Results: The results of the test are presented in Figure 4 for both contrastive and identification contexts. The categories A, S, and B stand for accentual, syntactic and broad focus respectively. The graphs show that accentual restructuring and syntactic restructuring are felt to be highly acceptable in Catalan as focussing devices. As expected, broad focus sentences are not acceptable as answers to a narrow focus question.

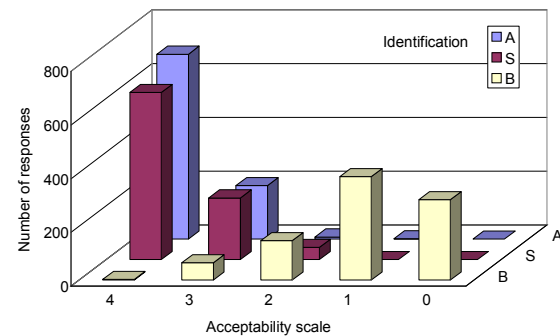
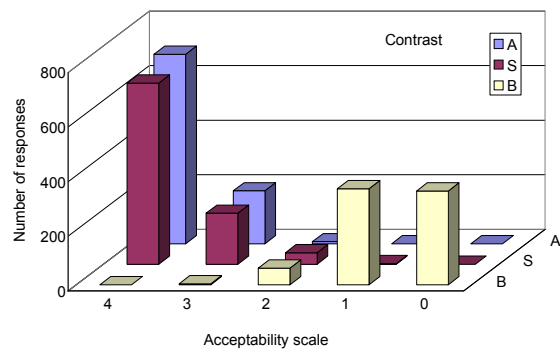


Figure 4: Results of the acceptability test.

5 Discussion and conclusion

The aim of this paper was to investigate 1) the possibility of using accentual restructuring in Catalan as a focussing device, 2) the contexts of its application and 3) the implications for Catalan learners of English intonation. Three tests were carried out: a production, a perception and an acceptability test. The results of these tests show that accentual restructuring can be used in Catalan to signal the focal structure of sentences and that syntactic strategies and intonational strategies are equally acceptable in this language. These findings throw into doubt Vallduví's (1991) and Vallduví & Zacharski's (1994) idea that Catalan can only attain the focus/accent relation by means of syntactic strategies. The immediate implication of these results is that Catalan learners of English do not need to learn a new strategy to signal focus but only broaden the domains of its application.

7 Reference list

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