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Discursive, Prosodic and Gestural Marking of Focalisation Pauses in British English

Gaëlle Ferré*

Abstract

In this paper, our intention is to analyse the marking of focalisation pauses in a videotaped corpus of British conversation. Our analysis will be three-dimensional : we will first describe the acoustic characteristics of the pauses and of the tone-units they separate, in order to show the differences between these pauses and other pauses such as demarcative or hesitation pauses. This analysis will include the following parameters : length of pause and rate of speech of the distinct tone-units, F0 movements and intensity before and after the pause. We will then try to see what kind of gestuality is implied in the case of focalisation and will propose a discursive analysis of the context in which the pauses appear.

1. Introduction

We work on a videotape corpus of British English (described below in the procedure section) and our first approach to the corpus consisted in sectioning it into adequate units for the analysis. We believed that the tone-unit, as described by Cruttenden (1997) would be quite appropriate for an analysis based both on acoustics and gestuality. One of the main clue given by Cruttenden for the determining of tone-units is that two different tone-units are most of the time separated by a pause, which is why we started to look for pauses in the corpus. We soon found out, however, that there were different kinds of pauses, some of which clearly played a role of demarcation, even if the pause was displaced in the tone-unit as we have seen in a previous study (Ferré, to appear), some of which not. Since our corpus is a 'spontaneous' conversation between two speakers, we also encountered quite a vast quantity of hesitation pauses and pauses which role didn't seem to pertain to either of these categories, and which we called focalisation pauses. These will be the object of this paper, and we will try to see what differentiates focalisation pauses from the other types of pause that appear in the constituent. Our analysis will be in three parts ; we will first of all present an acoustic analysis of the pauses based on the following parameters : length of pause and speech rate in the tone-units separated by a pause, F0 movements and intensity before and after the pause ; then we will see what is specific to focalisation pauses in terms of gestuality and will at last propose a discursive analysis of the contexts in which the pauses appear.

2. Procedure

2.1. Recording and analysis procedure

We recorded two British young ladies, aged 23 respectively, in a studio. The instruction given to them was to speak as they usually do (the speakers are well acquainted with each other) during half an hour. The recording was made in a studio in order to have a good quality both of sound and image (a gestural analysis requires proper setting, light, etc. and an acoustical analysis cannot be made if the sound track is full of background noise), but in order to make the recording session more casual, we arranged the studio in a lounge. The speakers were seated opposite each other (so to have the head rest position in front of them and we could decide that any departure from this position is motivated) and filmed by two cameras. The sound recording was made directly in the cameras with two clip-on microphones and the two sound tracks were then transferred on two distinct audiotapes (which makes the acoustical analysis much easier in case the two speakers speak at the same time). We also edited the two videotapes so as to have the two images next to each other on the same film, that we then transferred on a CD-ROM, into Quicktime sequences. We labelled and made the acoustical analysis of the entire corpus with the help of PRAAT (created by Paul Boersma and David Weenick) and the gestural analysis was made with Adobe Premiere.

2.2. Classification of the different pauses encountered

As we said in the introduction, our first step in the analysis of the corpus was to segment it into proper units, and since sentences don't really make sense in natural conversations, we chose the tone-unit, as described by Cruttenden (1997), in order to give an account of the organisation of the conversation, in terms of speech turns but also of strategies

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used by the speakers. In order to determine tone-units, we looked at pauses and at the beginning, everything went fine. We met pauses such as the ones in the following example taken from the very beginning of the recording in which the speakers were telling their names, age and living place as they had been instructed :

- (1) my name's Zoe Lacey {0,2} I'm twenty three years old as well {0,13} and I'm from Durham

in which each pause is noted in seconds between brackets, and where the two pauses clearly play a demarcative role between different syntactic components. However, we were soon faced with pauses such as the ones in example 2 :

- (2) she's from {0,52} hem {0,94} Hebburn

in which a single tone-unit (or syntactic group, since in this case, tone-unit and syntactic group coincide, which is not always the case) is interrupted by two pauses, which we classified as pauses marking some hesitation on the part of the speaker. We decided to count such pauses as being part of the tone-unit, and also to consider that their length should be included in the calculation of speech rate, whereas we didn't count demarcative pauses in the calculation of speech rate (since especially in a conversation between two persons, the pause is initiated by the speaker, but its length is dependant on the intervention of the interlocutor).

Up to this point, however, the problem was quite easily solved. We met some difficulties with examples such as the following :

- (3) I was a faithful employee and then {0,88} I'd been there just under a year I think and that's {0,56} when you're allowed rights sort of sick pay and things like that

in which the video and sound track reveal no hesitation of any kind. Everything seems to be normal, and listening to the tape, one doesn't even realise that pauses don't coincide with the end of syntactic units. We have made an account in a previous study of these pauses which are quite numerous in our corpus and which are made by the two speakers respectively. We called them *displaced demarcative pauses* ("Les pauses démarcatives déplacées", Ferré, to appear) and established that the role of this displacement was for the speakers to keep their speaking turn, which is endangered when the speaker pauses at a syntactic boundary.

At last, we met another kind of pause, appearing quite often as well, like in examples (4) and (5) :

- (4) but the Marks & Spencer's sandwiches are {0,12} gorgeous
 (5) it's all (h) {0,39} fuddy daddy granny stuff

in which (h) stands for an audible breathing, which duration was not included in the length of the silent pause. In those two examples, it clearly appears that the pauses cannot play a demarcative role, and again, after having watched the video, we found absolutely no hesitation on the part of the speaker ; we can even say that our impression was quite opposite. The global impression here was that some kind of emphasis was put on a part of the discourse, that the speaker wanted to create a sort of dramatic or humorous effect. This is why we called such pauses *focalisation pauses*. We were then of course interested in knowing what achieved such an effect both acoustically and gestually, and were convinced that some regularities could be observed that would differentiate focalisation pauses from the other two kinds of intra-constituent pauses.

3. Analysis

3.1. Acoustic analysis

As far as duration is concerned, the first parameter we tested to distinguish between the different kinds of pauses was their length. We compared the length of 52 focalisation pauses, 19 displaced demarcation pauses and 137 hesitation pauses, excluding from the measurements all audible breaths and filled pauses in order to compare the same kind of pause. It appeared that there was no significant difference between them, although we had expected hesitation pauses to be longer than the other two. It is not the case and speakers associate other marks of hesitation to silent pause when they don't find their words. We also supposed that syllables of the tone-unit would be longer in the case of hesitation pauses. This factor is not significant either. However, we met an interesting result that distinguishes hesitation from focalisation pauses : in the case of hesitation pauses, the rate of speech of the speaker is slower before the pause than after it, whereas it is the contrary for focalisation pauses (ANOVA, $p = 0,0118$ for average syllable length before the pause ; and $p = 0,0209$ for average syllable length after the pause). This means that the speaker has a lower rate of speech while

looking for her words or ideas, then pauses, and has a quicker rate of speech once she has found her words, even if those are not considered as appropriate (if so, she will use other hesitation marks such as new starts, etc. until the right solution is reached ; see Candea, 2000). In the case of focalisation pauses, the speaker has a normal rate of speech before the pause, then pauses, and then has a slow rate of speech on the focalized items. In the two kinds of pauses, there is however no significant lengthening of one particular syllable (every syllable of the group is lengthened but not enough to reach the first level of lengthening : the slower rate of speech is then attributable to a small lengthening of all the syllables of the group instead of one in particular as would be the case in French ; this difference is probably due to the structure of syllables in both languages : strong tendency to closed syllables in English vs. open syllables in French).

Considering the fundamental frequency — we took one measure of F0 on each syllable, at the intensity peak — we tested a vast number of parameters such as the F0 value on speech immediately preceding and following the pause, the rise or fall of fundamental frequency before and after the pause and none of these parameters is significant. Whatever the pause considered in the tone-unit, F0 values preceding or following it are diverse and F0 movements may be rising or falling with no regularity. However, with focalisation pauses, we note the presence of a tonic syllable as described by Cruttenden (1997) on one of the two syllables that immediately follow the pause. This is realised under the form of an important melodic movement on one syllable, that may be rising or falling or even more complex, but the syllable doesn't necessarily bear the peak of F0 of the whole tone-unit.

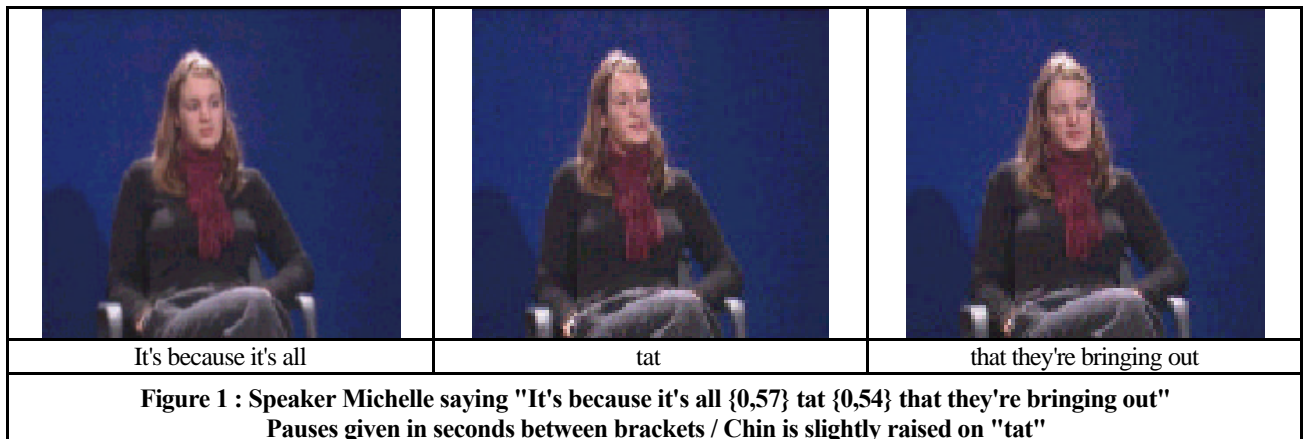
We then tested a certain number of parameters concerning intensity, none of them appeared to be significant. We were actually expecting to find a higher intensity value on one of the syllables immediately following a focalisation pause, since we said there was a tonic syllable after such pause. We did indeed find a higher intensity value on the focalized item in the tone-unit, but we also found high intensity values after hesitation and displaced demarcative pauses. This is due to the fact that in English, intensity has two distinctive roles : it marks lexical and tonal stress ; it is also used as a means to keep the speaking turn as Morel & Danon-Boileau (1998) have shown for French. Here, in our three different pauses, we find high intensity values on the speech that immediately follow the pause, but these high values don't play the same role. High intensity is used to mark tonicity in the case of focalisation pauses, whereas it is used to keep the endangered speaking turn in the case of hesitation and displaced demarcative pauses (we probably wouldn't find such high intensity values in a monologue). It nevertheless remains that the listener may be able to make the difference between the two roles and understand the high intensity after a focalisation pause as a mark of emphasis.

3.2. Gestural analysis

First, we found that some facial expressions are characteristic of hesitation and focalisation : eyebrow movements and affective mimics. Hesitation pauses are significantly associated with eyebrow frowns which indicate deep thinking ($p = 0,0416$). We think that doing so, the speaker reduces his/her visual field which permits a better concentration, and in a figurative way a reduction of the visual area also means a reduction of the cognitive field thus achieving a better precision. On the contrary, eyebrows are often raised on the emphasised term following a focalisation pause (and not only in this context) although this was not statistically significant (probably because of the small number of examples). However, when a word is emphasised after a focalisation pause, the speakers both used affective mimics such as lip protruding and smiles according to the context in the discourse. Another gesture is also significantly associated with focalisation ($p = 0,0006$), and never in the case of hesitation or displaced demarcative pauses. A single rise of the chin on the focalized item after which the head comes back to its rest position. This is not to be taken as a nod, but is of the same sort as a rise of eyebrows. This gesture is illustrated in Figure 1 below.

But it is rather in terms of gesture that focalisation pauses are differentiated from the other two. First, the emphasised term is often accompanied by an iconic gesture (see McNeill, 1992) and this is statistically significant ($p = 0,0371$). Not only does the speaker highlight the term by isolating it from the beginning of her discourse thanks to a pause, but she also uses a gesture that illustrates what she is speaking about, and which also very often tells more than the discourse itself. For example, when she says "they had these huge punnets of strawberries", Michelle puts both her hands in the shape of a rectangle which gives a better idea of the exact dimension of the punnets. It then appears that the emphasis in the discourse is also shown thanks to the addition of a specific gesture.

We had noticed that in the case of hesitation pauses, speakers often had recourse to adaptators (gestures such as touching a part of one's face, scratching, touching the other hand, biting one's fingers, etc.), but these were not significant.



3.3. Discursive analysis

There are major differences between the three kinds of pauses in terms of discourse. First, displaced demarcative pauses always appear at the very beginning of the group they introduce, whereas hesitation pauses may appear at any place in the tone-unit and focalisation pauses appear most of the time towards the end of the tone-unit, introducing the tonic syllable. This is an important difference between French and English. In French, focalisation is most of the time rendered by a dislocation of the emphasised element of discourse. Coming back to example 4 : "but the Marks & Spencer's sandwiches are {0,12} gorgeous", we can see that there is no dislocation in English and that this example could only be translated in French by "mais ils sont délicieux, les sandwiches de chez Marks & Spencer's". The role of the pause in English is then to break the usual sentence into two parts, one of which bears the emphasis expressed mainly through prosody and gesture. There is another difference between focalisation and hesitation pauses this time : as mentioned by M. Candea in her thesis (2000), hesitation silent pauses rarely occur on their own ; they are most of the time accompanied by other marks of hesitation such as filled pauses ("uh" or "hem"), repetition of an item or of a whole group, new starts, etc., which never occur in the context of focalisation. Focalisation and hesitation are in this respect in total opposition. When beginning an utterance in which there will be a focalisation pause, the speaker knows right from the start what he will say, whereas in the case of hesitation, the speaker has started an utterance with only an approximate idea of the way it will be expressed.

But then, the main difference between hesitation and focalisation pauses probably lies in the type of discourse both of them introduce. Whereas hesitation pauses introduce a continuation of what preceded them, there is always a disjunction of levels¹ in the case of focalisation pauses. By levels we mean language register, prosodic register, tone of discourse, etc. Consider example (6) below :

(6) and they {0,46} roam around in the trees

In this example, Michelle is describing a certain species of spiders that are found in Saudi Arabia. The gestural and prosodic clues tell us that the pause in the tone-unit is a focalisation pause. Now, in terms of discourse, the item that comes out just after the pause ("roam around") shows a change of language register on the part of the speaker, whose discourse is rather casual throughout the whole conversation, and in a certain sense, this word doesn't fit with the words she usually uses since it is much more specific and elaborate. Example (7) is a bit different :

(7) oh {0,37} are you going this evening to this {0,69} soirée thing

Here, Zoe makes a focalisation pause before "soirée thing", and the disjunction lies in the fact that she uses a French word (she could have said "party" which is the word she uses at other parts in the conversation). There are several reasons for this language shift, the first one being that they both lived in France at the moment of the recording and that they both adopted French words and customs. The other possible reason is that the use of French words in an English discourse has always been considered as giving a touch of elegance to the person who speaks. It is not excluded

¹ We would like to thank A. Mettouchi for this interesting suggestion.

either that this is also a bit ironical on the part of Zoe, who may be making fun of persons using such discourse (this we can assume considering the whole conversation in which the two speakers are quite sarcastic towards the French).

Another kind of disjunction may also occur in the case of direct discourse. Direct discourse is most of the time introduced by an 'introductory' verb such as "say, tell, go, think". This introductory verb and its grammatical subject generally form a single tone-unit with the discourse they introduce. Most of the time there is also no pause between the verb and the quotation. But in some examples, such as (8), the speaker makes a focalisation pause between the verb and the direct speech, either to introduce a quotation that is supposed to be funny, or because the speaker adopts and exaggerate the voice characteristics of the person she is quoting, which is the case in (8), where Zoe adopts a graver voice to imitate a male speaker.

(8) and they're like {0,50} oh well yeah we haven't been for four weeks (LAUGH)

in which the F0 of the quotation is much lower than the usual register of that speaker, intensity is kept high on the whole quotation, and we also find a rising of the chin just after the pause. In order to achieve this change of voice, Zoe keeps her head slightly to the rear throughout the quotation. This imitation is also felt as funny since both speakers burst into laughter after the utterance.

4. Conclusion

In this paper, we have shown what is specific in terms of prosody, gestuality and discourse, to focalisation pauses, as compared to other types of intra-constituent ones such as hesitation or displaced demarcative pauses. It appears that focalisation pauses, which role is to emphasise an element of discourse, are marked with more clues than the other two types of pauses. These clues are given again in the following table :

	Focalisation	Hesitation	Demarcation
<i>Prosody</i>	Tonic syllable after the pause (larger F0 movement)		Rising intensity after the pause ²
	High intensity after the pause	High intensity after the pause	High intensity after the pause
	Speech rate quicker before than after the pause	Speech rate slower before than after the pause	
<i>Gesture</i>	Rising of the chin / eyebrows	Eyebrow frowns	
	Affective mimics		
	Iconic gestures		
<i>Discourse</i>	Appears towards the end of the tone-unit	Presence of another mark of hesitation	Appears at the beginning of the new syntactic group
Role	Introduces a disjunction ; emphasis on an element	Gives time to the speaker to find his/her words	Allows the speaker to keep his/her speaking turn

Table 1 : Prosodic, gestural and discursive clues that allow to make the distinction between focalisation, hesitation and displaced demarcative pauses

What is shown in this table is that whereas demarcative pauses are not associated with any particular gesture, hesitation is gestually marked by a frown of the eyebrows and focalisation on the contrary, by a rise of the chin or the eyebrows. In the case of focalisation, speakers also make abundant use of other kinetic elements such as affective mimics and iconic gestures, which means more implication on the part of the speaker. A focalisation pause always introduces a tonic syllable and is again in opposition with hesitation pauses in which speech rate is slower before than after the pause. In the three kinds of pauses, intensity is kept at a high value (compared to the usual intensity range of the speaker) on the group that follows the pause, but in the case of focalisation pauses, this high intensity is meant to

² This was shown in a previous study, for which we gave an explanation. See Ferré (to appear).

mark emphasis, whereas in the case of hesitation and demarcation pauses, it is used by the speaker to keep his speaking turn.

At last, we have seen that the use of focalisation pauses is most probably due to the syntactic structure of the English language which, as opposed to French for example, doesn't allow dislocation of an element of discourse, or at least not in the same proportion in spontaneous speech. English speakers are then forced to use other means to express emphasis, that is prosody and gesture.

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