



ARTICOLO

# The prosody of reported speech in spoken French

Philippe Martin

Molti studi sembrano confermare che il discorso riportato è contrassegnato prosodicamente da variabili percettive come la variazione del tono, la durata della pausa, la velocità del discorso, l'estensione del tono più alta, ecc.

Tuttavia, i dati analizzati estratti dai dataset ORFEO e OFROM, che raccolgono vari corpora di discorsi spontanei in francese con vari stili e provenienze geografiche, mostrano che se i monologhi sono spesso caratterizzati da una pausa che introduce i segmenti riportati, non è affatto così il caso dei dialoghi informali, in cui i segmenti introduttivi sono per lo più posizionati all'inizio o al centro della frase e integrati nella struttura prosodica complessiva della frase.

La presenza di una pausa nei monologhi per segnalare la presenza di un segmento del discorso riportato in una frase riflette un "pregiudizio della lingua scritta" legato alla presenza di virgolette nelle rappresentazioni scritte del discorso riportato.

*Many studies seem to confirm that reported speech is marked prosodically by perceptive variables such as pitch variation, pause duration, speech rate, higher pitch range, etc.*

*However, analyzed data extracted from the ORFEO and OFROM data sets, which bring together various corpora of spontaneous speech in French with various styles and geographic origins, show that if monologs are often characterized by a pause introducing the reported segments, it is not at all the case for informal dialogs, where introducing segments are mostly located at the beginning or in the middle of the sentence and integrated in the overall sentence prosodic structure.*

*The presence of a pause in monologs to signal the occurrence of a reported speech segment in a sentence reflects a "written language bias" linked to the presence of quoting marks in written representations of reported speech.*

**Parole chiave:** discorso riportato, intonazione, struttura prosodica, ORFEO, OFROM

**Keywords:** reported speech, intonation, prosodic structure, ORFEO, OFROM

**Sommario:** Introduction - Common views on reported speech - Prosodic parameters - Some contradicting earlier work - Adding the prosodic structure - Analysis of spontaneous speech data - Some statistics... - Reported speech typology - Selection of examples - Conclusion

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## Introduction

In traditional grammar, reported speech is differentiated from direct speech, e.g., *Max said he is very hungry* as reported speech vs. *Paul said “I am very hungry”* as direct speech. In this paper however, we will deal with “direct” speech in oral discourse, commonly designated as “reported oral speech”, or “reported speech” when dealing with oral speech, rather than its written transcription, as in *Paul said “I am very hungry”*, normally transcribed orthographically with quotation marks. In fact, this orthographic convention using quotation marks may bring preconceived ideas about the oral realization of reported speech, as oral reading imposes the presence of a pause at the beginning and the end of the segment reported. But is it the case for spontaneous speech?

## Common views on reported speech

A common linguistic description of reported speech asserts that speakers “do not always explicitly introduce different ‘voices’ with reporting verbs or quotative constructions. Instead, figures are often ‘brought on stage’ for the first time merely by being animated, without, for instance, a prefatory he said or she said. [...] The figure’s ‘voice’ must be constructible different from the current speaker’s own ‘voice’”. However, “Prosodic and paralinguistic effects are in fact deictic to a certain extent: they involve speaking within a given range of relative loudness, pitch and tempo [...] and with a given voice quality.” (Couper-Kuhlen, 1997).

Many studies seem to confirm this view, according which specific prosodic features are expected to mark reported speech segments: Fónagy, 1986; Günther, 1998; Klewitz and Couper-Kuhlen, 1999; Calaresu, 2004; Oliveira et al, 2004; Contreras Roa, 2020, among others. In these studies, analyzed phonetic data describe how expecting perceptive variables such as pitch variation, pause duration, speech rate, higher pitch range, etc. signal reported speech segments in discourse.

It may then be worthwhile to determine from the analysis of samples extracted from a large corpus of spontaneous speech in French if reported speech is actually prosodically marked in discourse, as predicted by the doxa, considering two styles present in the corpus, storytelling (monolog) and conversations between friends (dialogs).

## Prosodic parameters

Most of the studies quoted above investigate the possible correlation between reported speech segments and acoustic correlates of perceptive variables, i.e., pitch

variations (Hz, Semitones), pause duration (s), speech rate (Syllables or phones per second), loudness variations (dB).

The observed correlations by Oliveira & Cunha (2004) for instance pertain to:

1. Pitch variations for reported (direct) speech in French, with higher pitch range than indirect speech, pitch reset (with respect to previous segments), register change.
2. Pause duration: reported segments are often separated from non-reported speech by pauses.
3. Speech rate: Changes in speech rate.

(Intensity measurements are found harder to establish acoustically).

These results comfort the idea that there is a need to put some distance, introduce some change when the section of reported speech starts. Perhaps the “perfect way” to do this would be to change the speaker voice in order to imitate the speech style of the person quoted (see an example below, Fig. 13), borrowing some idiosyncratic characteristics of the speaker voice.

### Some contradicting earlier work

However, analyzing recorded conversations in Quebec French, Demers (1998) for instance, appears not so sure about the use of specific prosodic markers necessarily related to reported speech, especially in informal conversation. She observes that in examples like:

*Il m'a dit: « Ça été l'erreur de ta vie ». He told me: “That was the mistake of your life.”*

*Ben souvent le monde il dit: « Il a pas peur lui ». Well, people often say: “He’s not afraid.”*

*C'est pour ça je dis moi: « Il-y-a pas de femme heureuse comme moi » : “That’s why I say to myself: “There is no happy woman like me.”*

Demers concludes that an expected pause is indeed observed when reading, probably influenced by the punctuation quotation marks, whereas it does not appear so frequent in spontaneous discourse, except perhaps only in academic formal speech or in some experimental phonology environment.

### Adding the prosodic structure

Most if not all existing research on prosodic characteristics of reported speech use global parameters, such as pitch range, speech rate, intensity variations, etc. We will add here another potentially interesting property of reported speech segments

pertaining to the prosodic structure of the sentence where the reported segment is embedded. This may show with more details the eventual presence of pauses or changes in the global prosodic parameters how reported speech segments are integrated or not in the speaker production.

This analysis is based on a model of the autonomous prosodic structure (Martin, 2018), where the hierarchical grouping of accentual phrases (AP, group of words with only one stressed syllable, in final position in French) is defined by dependency relations indicated by pitch variations located on stressed syllables vowels. These pitch variations are categorized as falling or rising, above or below the glissando threshold (i.e., perceived as a melodic variation or a static tone), and reaching a minimal or maximal pitch value (for terminal conclusive contours declarative and interrogative), Fig. 1.)

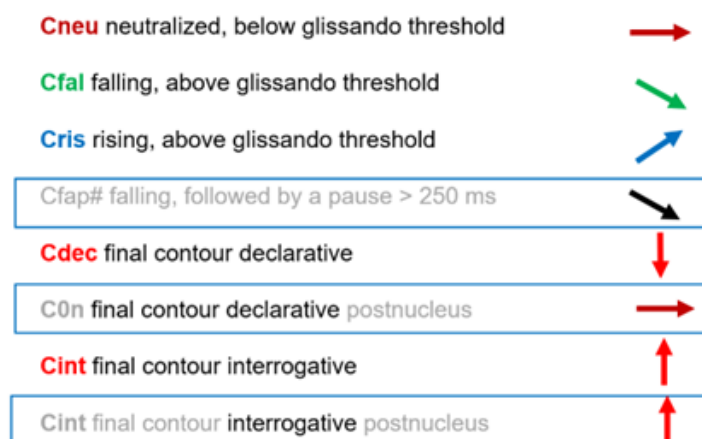


Fig. 1. Classes of melodic contours in French.

The dependency relations indicated by these melodic contours are given Fig. 2:

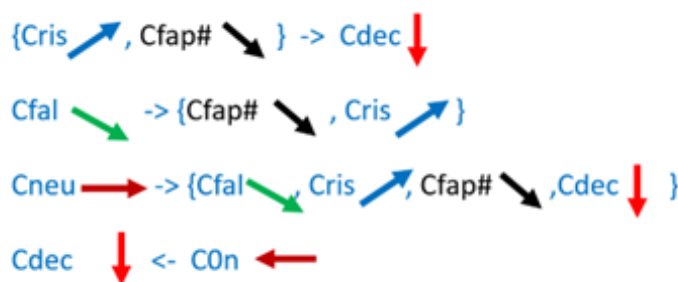


Fig. 2. Dependency relations indicated by melodic contours located on stressed syllables vowels.

For instance, the falling contour *Cfal*, whose variation is above the glissando threshold, depends on the occurrence of either a falling contour before pause, *Cfap#*, or a rising contour *Cris*, also above the glissando threshold, both located later in the sentence (dependency “to the right”). These dependency relations determine the successive grouping of accentual phrases ended by *Cfal* with those ended by *Cris* to

form a larger prosodic syntagm (aka IP, Intonation Phrase in the Autosegmental Metrical model).

Applied to the example of Fig. 3, the prosodic dependency rules define the sentence prosodic structure, displayed with orthogonal branches (Stressed syllables vowels are in bold).

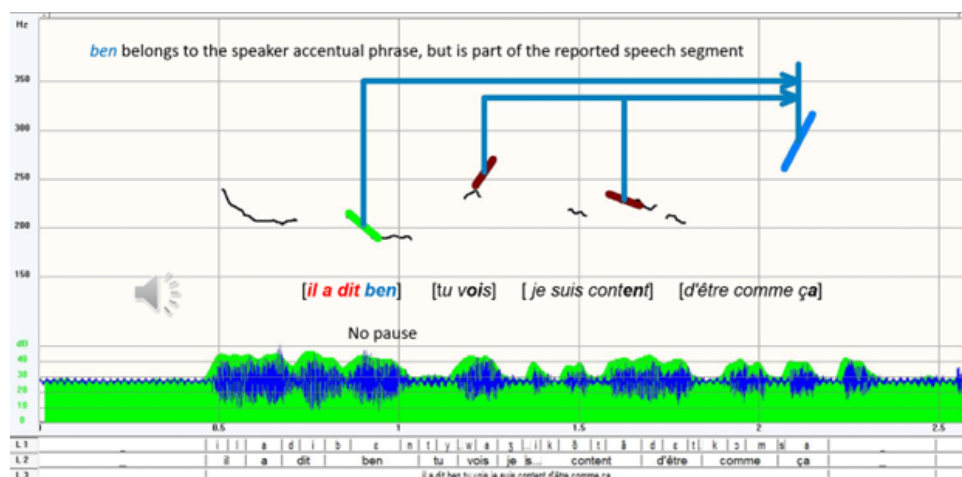


Fig. 3. [il a dit **ben**] [tu **vois**] [je suis **content**] [d'être comme **ça**]

“[he said well] [you see] [I’m happy] [to be like that]”

[Corpus ORFEO, ergotherapie\_sch il a dit ben 299.898 s 302.131 s]

Fig. 3 gives an example of prosodic annotation of a segment retrieved automatically by the WinPitch integrated concordancer (keyword *il a dit*): fundamental frequency, intensity, wave form, and optional narrow band spectrogram with its aligned frequency scale in order to visually verify the validity of the melodic curve. The automatic word and phone segmentation (in IPA) allows to easily define stressed vowels, instancing melodic contours above and below the glissando threshold.

The prosodic structure, represented with orthogonal branches, gives an account as how the accentual phrases are merged together in the course of time. In the example, [il a dit **ben**] is merged with the group formed by three accentual phrases AP [tu **vois**] [je suis **content**] and [d'être comme **ça**] ended with a rising contour *Cris*, to define the sentence prosodic structure. The stressed syllables vowels (in bold characters) define the AP right boundaries, according to French morphological rules.

## Analysis of spontaneous speech data

The analyzed experimental data are extracted from the ORFEO + OFROM data set (4 302 930 words, 1273 files), which brings together various corpora of spontaneous speech in French. Examples were easily located thanks to the concordancer integrated in the WinPitch software. This software automatically displays the speech

sound corresponding to the selected concordancer text, together with its acoustic analysis, spectrogram and melodic and intensity curves.

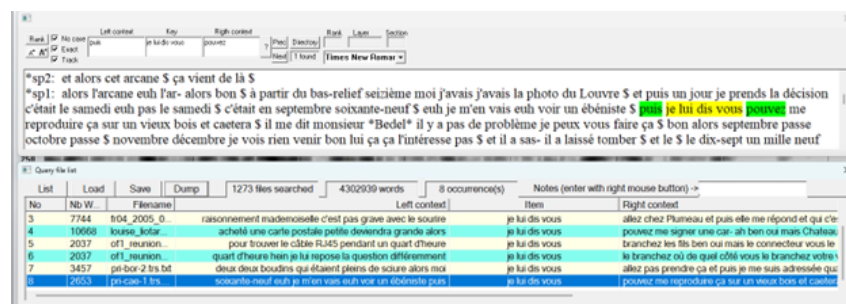


Fig. 4. Concordancer integrated in WinPitch, giving the list of occurrences of a key word (here *je lui dis vous*). Selecting a line will retrieve the corresponding speech segment, together with their acoustic analysis (fundamental frequency, intensity and narrow or wide band spectrogram).

Given the usual large amount of data considered (In the ORFEO + OFROM corpus: 4 302 230 words...), the ease of use of efficient and ergonomic research tool is essential. WinPitch addresses this problem by offering fast access to recorded data in a variety of transcription formats (json, TextGrid, TRS, UFT-8, XML...), integrating fast acoustic analysis and prosodic annotation tools of selected speech segments of interest. Prosodic annotation uses graphic drawing tools, operating either with the ToBI standard notation, or an automatic categorization of melodic contours based on their glissando levels.

### Some statistics...

		Number of occurrences
<i>Je dis</i>	I say	1134
<i>Tu dis</i>	You say	401
<i>Elle dit</i>	She says	182
<i>Nous disons</i>	We say	9
<i>Vous dites</i>	You say	195
<i>Elles disent</i>	They say	5
<i>Je lui dis</i>	I tell him	231
<i>Tu lui dis</i>	You tell him	35
<i>Il me dit</i>	He tells me	280
<i>Elle lui dit</i>	She tells him	34
<i>Elle me dit</i>	She tells me	196
<i>Nous lui disons</i>	We tell him	1
<i>Vous lui dites</i>	You tell him	3
<i>Ils lui disent</i>	They tell him	1
<i>Elles lui disent</i>	They tell him	0

Table 1. Number of occurrences of some introductory segments found in the ORFEO corpus.

Table 1 shows the number of occurrences of some selected introductory segments found in the ORFEO + OFROM corpora. *Je dis* is the most frequent occurrence in the corpus, followed by *tu dis* and *je lui dis*.

## Reported speech typology

Given the rather large number of occurrences of reported speech found in ORFEO+OFROM corpora, analyzed examples are classified according to their position in the sentence:

Initial: [*il m'a dit*] # [*c'est comme ça*] [*que ça se fait*] “[he told me] # [that’s how it’s done]”

Embedded: [*Et sa femme*] [*elle lui dit euh*] [*le Nord euh*] [*c ’est-à-dire euh*] [*au-dessus d ’Avignon*] ? “[And his wife] [she said to him uh] [the North uh] [that is to say uh] [above Avignon]?”

Final (postnucleus): [*très difficile*] [*jouer violoncelle*] # [*lui aurait dit*] [*Rostro*] “[very difficult] [play cello] # [reportedly told him] [Rostro]”

Furthermore, examples are classified as extracted from monologs (story tellers, radio news), or dialogs (informal conversations).

## Selection of examples

### 1. Introductory segment in initial position in the sentence

#### 1.1 Monologs (Storytellers)

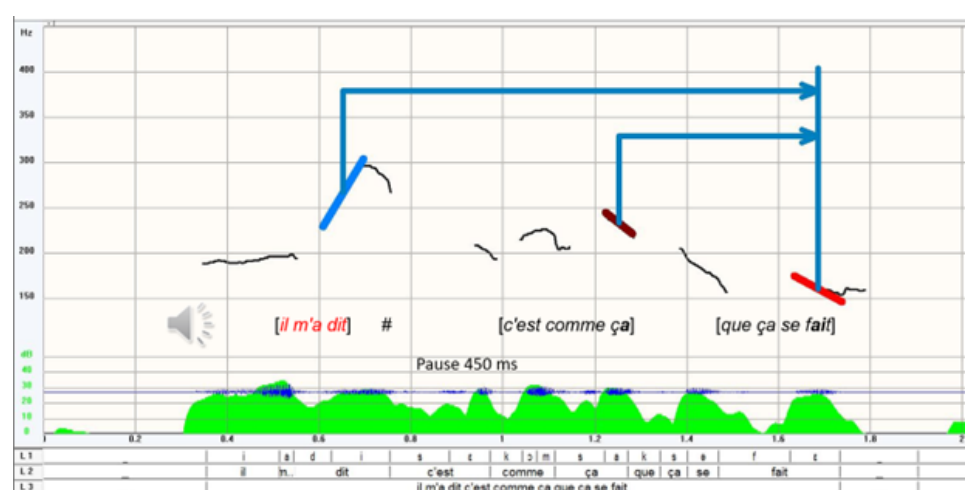


Fig. 5. [*il m'a dit*] # [*c'est comme ça*] [*que ça se fait*] “[he told me] # [that’s how it’s done]”  
[Corpus ORFEO youcef\_zerari\_h\_29\_abdel\_hachim\_h\_25\_so 3943.447 s 1987.058 s]



Although the speaker is not professional storyteller, she uses a didactic style in this monolog, instantiated by the presence of a 450 ms pause, and a prosodic structure congruent with syntax, where the reported segment *c'est comme ça que ça se fait* constitute a complete Intonation Phrase IP. The presence of the pause can also be due to eurhythmicity, balancing the duration of the two first levels of the prosodic structure. There is no remarkable pitch change, or speech rate, as the encoding of the prosodic structure including the reported segment follows the general prosodic grammar rules.

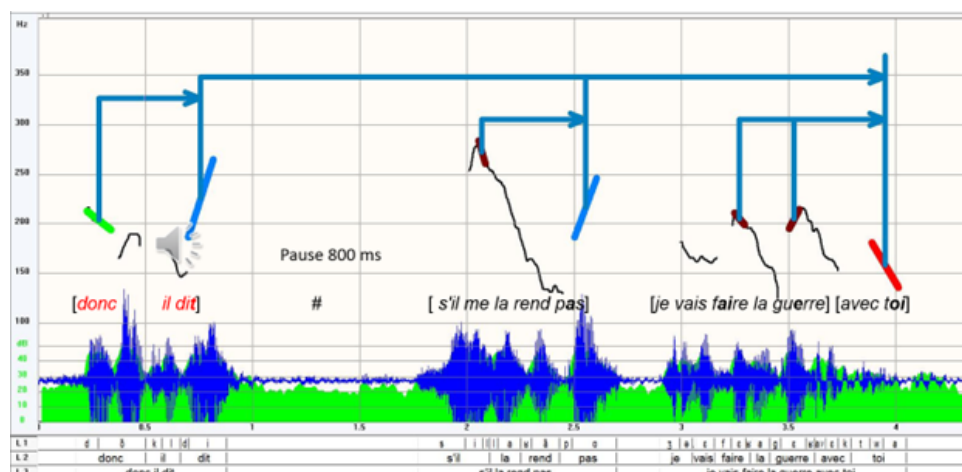


Fig. 6. [donc il dit] # [s'il me la rend pas] [je vais faire la guerre] [avec toi]

“[so he says] # [if he doesn't give it back] [I'm going to war] [with you]”

[ORFEO 01\_og\_nh\_100222 4393.085 s 2203.267 s]

A typical example of storyteller reported speech, with a pause of 800 ms following the introductory segment *donc il dit*. The reported segment carries the same configuration of the prosodic structure that would be found in an isolated version of the reported segment, with a rising contour *Cris* ending the segment *s'il me la rend pas*, with no change in speech rate, pitch range or intensity.



## 1.2 Dialogs (informal conversation)

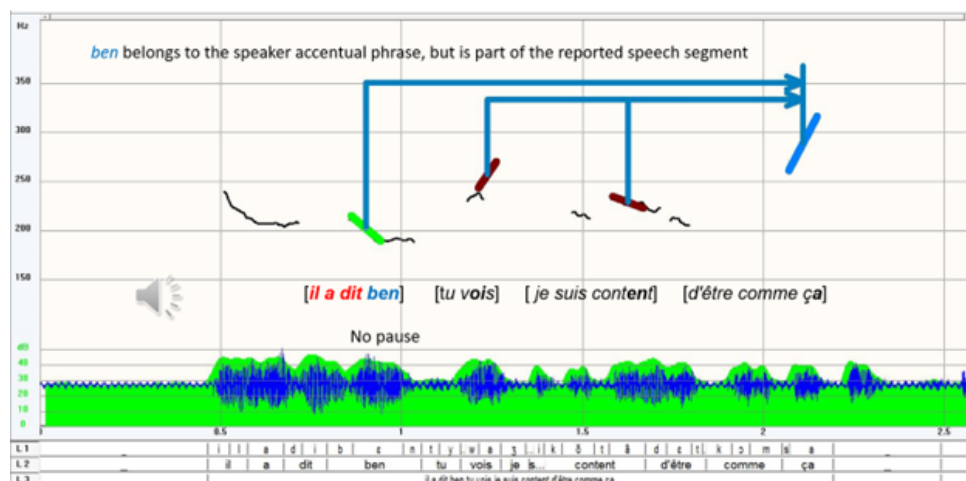


Fig. 7. [il a dit **ben**] [tu vois] [je suis **content**] [d'être comme ça]

“[he said well] [you see] [I'm happy] [to be like that]”

[ORFEO ergotherapie\_sch 595.824 s 302.332 s]

In this example, the introductory segment accentual phrase ends with the first locution of the reported segment *ben*. There is no pause, but the reported segment is prosodically integrated in a complete IP.



Fig. 8. [l'étudiante] [elle me **dit**] [je **veux**] [un renseignement] [tout de suite] [je lui **dis**] [désolée]

“the student tells me I want some information right away I tell her sorry”

[ORFEO fr04\_2005\_07\_04 2507.062 s 1257.392 s].

No pause observed in this example. The prosodic structure integrates both introductory and reported segments.

## 2. Introductory segment embedded in the sentence

### 2.1 Monologs (Story Teller)

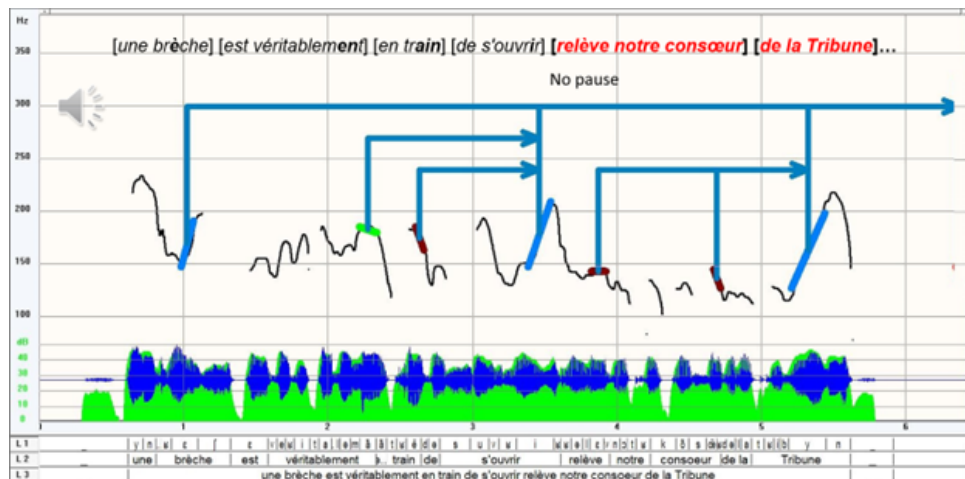


Fig. 9. [une brèche] [est véritablement] [en train] [de s'ouvrir] [relève] [notre consœur] [de la Tribune]...  
 “[a breach] [is truly] [in the process of] [opening] [notes our colleague] [from the Tribune]”...  
 [ORFEO fr04\_2005\_07\_04 2507.062 s 1257.392 s].

No pause found in a case of a presentation segment positioned after the reported segment (radio news).

### 2.2 Dialogs (Informal conversation)

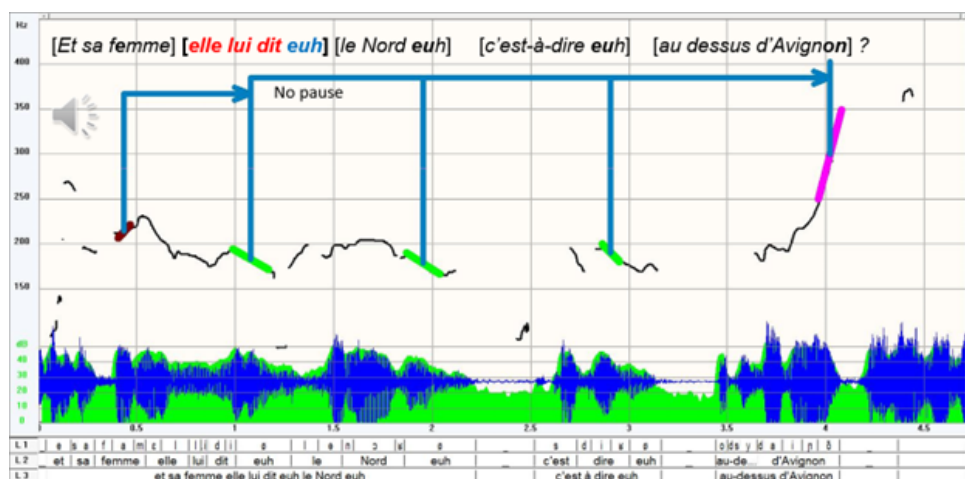


Fig. 10. [[Et sa femme] [elle lui dit *euh*]] [le Nord *euh*] [c'est-à-dire *euh*] [au-dessus d'Avignon] ?  
 “[And his wife] [she said to him uh] [the North uh] [that is to say uh] [above Avignon]?”  
 [ORFEO 01\_og\_nh\_100222 1960 3926.226 s 1967.827 s].

This example shows the introductory segment embedded in the sentence, with the reported hesitation *euh* included. There is no pause before the reported segment, and

the prosodic structure, indicated by C<sub>fal</sub> falling contours of melodic slope contrasting with the terminal interrogative contour, integrates both introductory and reports segments at the same level.



Fig. 11. [(il) s'est *approch***e**] [et il a dit **oui**] [oui vous li vous lisez] [l'Est *Républicain***a**] [donc vous êtes de l'Est]

“[he approached] [and he said yes] [yes you read it] [the Republican East] [so you are from the East]”  
[ORFEO pri-bel-2 1143 2296.160 s 1153.558 s]

Another instantiation of the first word of the reported segment integrated into the last accentual phrase of the presentation segment, which is integrated into the prosodic syntagm (IP) *et il a dit **oui**oui vous li vous lisez**l'**Est Républic**ain***. This configuration has also be reported in Italian by Saccone (2023).

### 3. Introductory segment embedded in final position

### 3.1 Monologs (Story Teller)

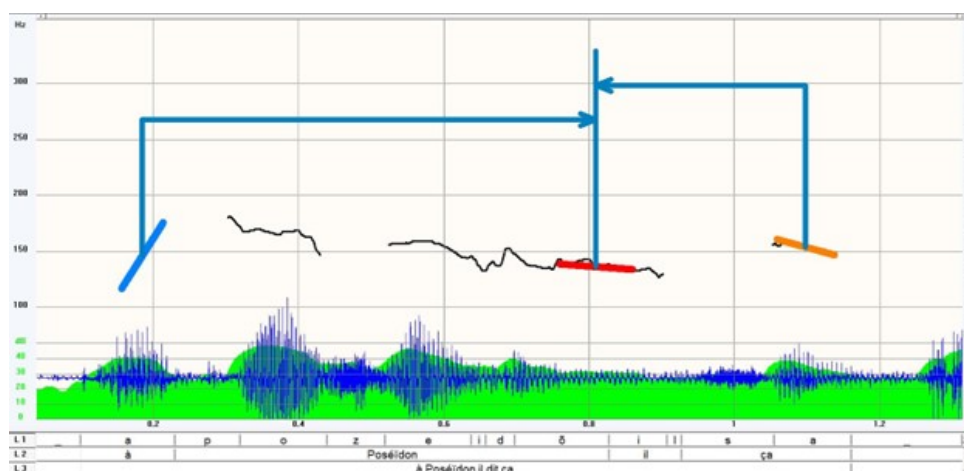


Fig. 12. [À *Poséidon*] [il dit **ça**] “[To Poseidon] [he says that] ”  
[ORFEO 01 og nh 100222 4393.085 s 2203.267 s].

No pause found when the presentation segment follows the reported segment. In the example, the presentation segment constitutes a *theme* in a *propos-theme* configuration (ie., postnucleus).

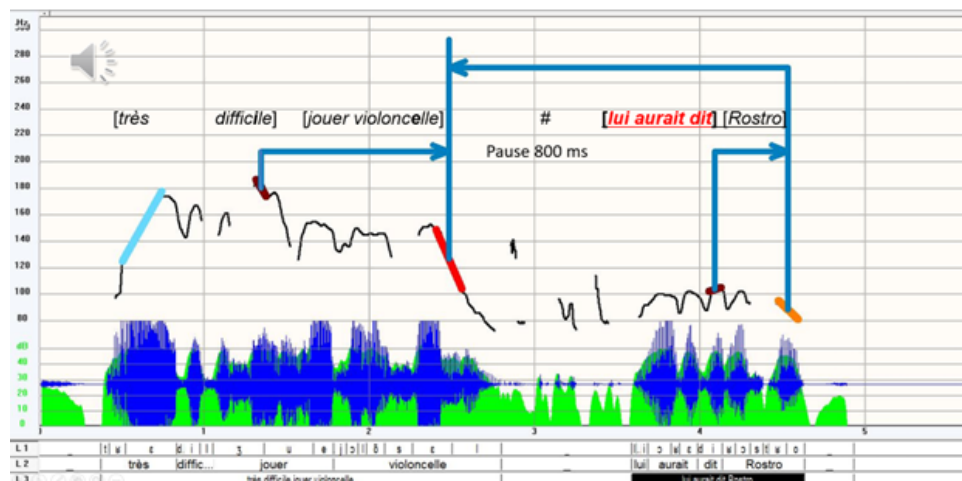


Fig. 13. [Très difficile] [jouer violoncelle] [lui aurait dit Rostro]

“[Very difficult] [to play cello] [would have told him Rostro]” (Corpus Avanzi)

A rare case of a presentation segment is in final position, after the reported speech. Furthermore, the reports segment is pronounced with a tentative voice imitation of the person quoted, i.e., cellist Rostropovitch.

Whether in monologs or dialogs, if the reported segment, ending with a terminal contour, precedes the presentation segment, this latter is in a position of postnucleus, and therefore forms either a deferred segment ended by a second terminal contour (Bally, 1944), or a neutralized contour indicating a theme in a theme-rheme configuration. However, presentation segments in final position is very rare in spontaneous dialogs.

## Conclusion

The introducing segments (*je lui dis, elle me dit...*) are mostly located at the beginning or in the middle of the sentence, integrated on an accentual phrase, or in the sentence prosodic structure (thus ending with a rising – declarative case, or falling – interrogative case- melodic contours).

Whereas academic and formal speech style use various marks to signal reported speech segments, this is rarely the case in spontaneous speech. The pause is the only prosodic feature used to signal reported speech, and seems to reflect an implied “written language bias” effect, the punctuation (quoting marks).

Academic and formal speech style use essentially pauses, and, contradicting earlier studies, do not use significantly other prosodic feature such as speech rate, intensity

or melodic height, to signal reported speech segments. On the other hand, pauses are rarely if ever used in spontaneous speech to introduce reported speech segments, to the point where in many cases the first word of a reported segment is incorporated in an accent phrase belonging to the introducing sequence.

If no introductory segment is used, it seems, in French, that speakers must use some parameters other than pause to signal the occurrence of reported speech to listeners, incorporating specific phonetic characteristics such as speech rate, a lower or higher pitch, evoking the reported speaker. This technique is currently used by popular voice imitators, e.g., Laurent Gerra.

When the pause is the only prosodic feature used to signal the occurrence of a reported speech segment, it seems to reflect an implied “written language bias” punctuation effect, referring to underlying quoting marks characteristic of more formal speech style. This aspect pertaining to received ideas on reported speech, appear like the common view on parenthesis in spoken speech, supposed to be pronounced with a faster speech rate, a flat melodic movement, and a lower intensity, whereas it is not at all the case as shown by analysis of spontaneous speech (Debaisieux & Martin, 2010).

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