Didactic Prosody and Notetaking in L1 and L2

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Abstract

Students' notetaking in first (L1) and second languages (L2) are observed, comparing them with the lecturer's speech prosody. This exploratory analysis displays a complex link between the information noted, the notetaker's linguistic competence and the didactic prosody.

1. Introduction

What has been studied to date is to compare the activity of the student taking notes in L1 and L2 (see [1] for the review). Non-native students meet practical problems when taking notes in L2 and loose time by not knowing or using abbreviations or icons [2], [3]. This leads to a lapse between the lecturer's speech, and the students' notetaking rhythm is not maintained and the logic of the written discourse is not preserved. Moreover, the level of the L2 ability and/or the knowledge of the academic field affect the management of this notetaking [4]. Some studies in psycholinguistics [5], [6] show that the temporal analysis of pauses in writting could reveal the manner in which the notetakers cognitively handle their activity. They treats the information following micro and macro textual structures: scriptural pause shows that the cognitive load implied in the largest units is more important than in the management of the smaller units (the duration of inter-propositions and inter-units pauses longer than for the inter-words or intra-word pauses). And yet, the less competent non-native students take, from the beginning, too long a time to administer words and thus do not follow the native's logic. If non-native notetakers are not as advanced in L2, they are in a situation of cognitive load for two reasons. The first is linguistic reason: the linguistic processing of L2 is highly demanding and they have not developed as many automated procedures (in comprehension above all) as the more advanced L2 students have. The second reason comes from a task-oriented account: they do not use techniques specific to notetaking. This is either because the less proficient non-native students do not succeed in transferring their L1 notetaking skills, or because they are not sufficiently trained in applying these skills with efficiency, as advanced non-native seems capable of doing. On the other hand, when the latter challenges the N in notetaking activity, he/she succeeds in managing the different processes and sometimes understands the lecture's content better than some native students. This suggests that non-native notetakers need to master some specific skills to compensate lack of their linguistic competence.

This study aims to explore relationship between lecturer's speech and students' notetaking, considering linguistic level and task ability. It includes an analysis of prosodic elements (i.e. intensity and segments duration) of the academic speech compared to graphic trace of the students' notetaking, taking into consideration the informational content of their notes. Aiming to observe the didactic accent.

2. Didactic accent

Lucci [7] supposes that the didactic accent is characterized by a displacement of the accent: initial accents or displaced accents. According to this author, this accent displacement is realized, on average, every 20 syllables in lecture reading situation similar. Boch [8] concentrates rather on "speech scriptural device (*indice scriptural parlé*)" which gives to the orally transmitted information an anchoring into the scriptural order: long silent initial and final pause, slowing of the tempo, voice projection (or increase of intensity) and absence of hesitations. As far as the didactic accent is concerned, there is sometimes a simultaneous use of these cues, or a partial use: sometimes or some of them, sometimes only one. The following is an example of the didactic accent.

> [Text 1]: d'autre part lire c'est donner #[884] au °texte #[215] du °sens # [306] et #[238] °l'interpréter #[657] construire donc une signification (#[number] = pause (ms) ; ° = didactic accent).
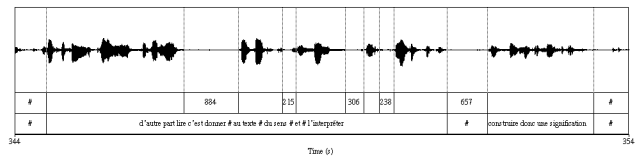

Figure 1: Example of didactic accent

3. Analysis

3.1. Framework

3.1.1. Lecture

The lecture used for this study was an excerpt of a course, which was initially created for French first-year students at the University of Provence, and recorded on an audiotape for post tuition. Speech used was at a slower pace (-30 %): the lecture lasted 12 minutes and its transcription came to the amount 1792 words (fluency = 149.33 words/min.). The lecture was about an Umberto Eco's commentary of his novel "The name of the rose".

3.1.2. Participants

Among participants, three students have been chosen here to illustrate this study: two non-natives, having both a common L1 (Japanese), one with an advanced French level (NN+) and one with an intermediate level (NN-), and one native (N) as a control. The second variable is the number of years studied at university.

Table 1: Participants

Student	French	Years
1	N	+2
2	NN+	+7
3	NN-	+1

Thus, there are three types of variable: linguistic level, pratical experience of notetaking, and native/nonnative contrast.

3.2. Method

Participants took their notes on a computerized notepad (WACOM) connected to a PC. The G-Studio Software [9] recorded the participants' graphic activity. Based on the recordings, a chronometric analysis of their note setting afterwards was then possible. As for the lecture, discourse is divided into 22 thematic units, for each of which, relevant information is isolated and counted after an acoustic analysis.

Its prosodic features are also analysed, in particular didactic accents and pauses. The didactic accent is isolated manually (increase of duration and/or increase of intensity). As for the pause, these are distinguished between "intra-proposition pauses", that is pauses implied directly in the items (i.e. key-concept, new notion, relevant information), and "discourse pauses", which are produced to structure the whole discourse (i.e. pauses inter-blocs or inter-units or inter-propositions). The first analysis takes only the first type of pauses into acount.

In this study, time relation between lecturer's speech and notetaking and the speech delivery are not realized at the moment.

3.3. Results

3.3.1. Notetaking

First, a general tendency of participants' performance is shown in the Table 2, and second it is detailed unit by unit in the Figure 2.

Table 2: General performance

Participant	1. (N)	2. (NN+)	3. (NN-)
Written words	285	115	83
Noted information	38 %	32 %	15.5 %
Abbreviations	32	19	2
Icons	8	7	4

Examining the notetaking of the participants, we note a reduction of speed, content and lay out of notetaking according to the linguistic level of the participant. Best is the linguistic level, best is the performance of notetaking.
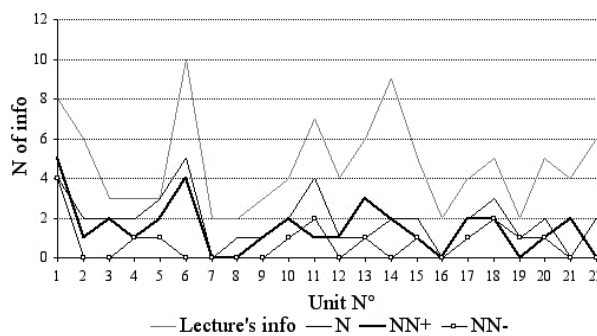

Figure 2: Items noted by notetakers

3.3.2. Lecturer's didactic prosody

The Figure 3 shows that occurrence of new information is generally related to didactic accents and pauses. However, this correlation is not constant, some units are more didactically marked than others because of didactic importance that each unit contains. As for the relation between pauses and didactic accent, it is variable as well: only the half of didactic accents (46.3 %) is produced with relevant pause.
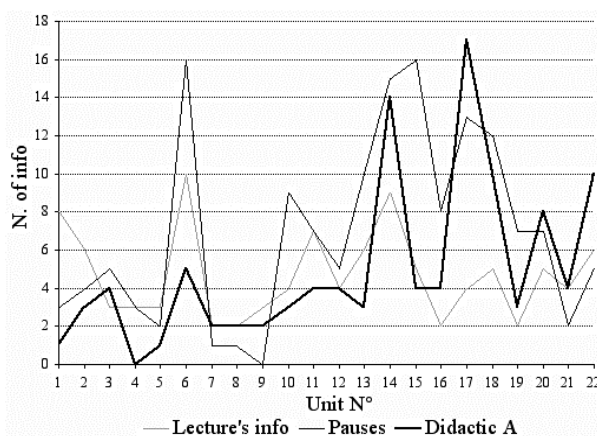

Figure 3: Didactic accent and pause

3.3.3. Didactic accent and notetaking

The Text 2 is analysed in the figure 4 for the aim of a comparison between pauses, didactic accents (2.07 words/s) and information noted by the participants. This part contains 8 new information items, one didactic accent and 3 intra-proposition pauses:

> [Text 2] Umberto Eco est un sémioticien italien contemporain #[803] spécialiste de l'étude des signes #[435] °et médiéviste #[485] depuis 1982 date de publication du Nom de la rose il est aussi romancier
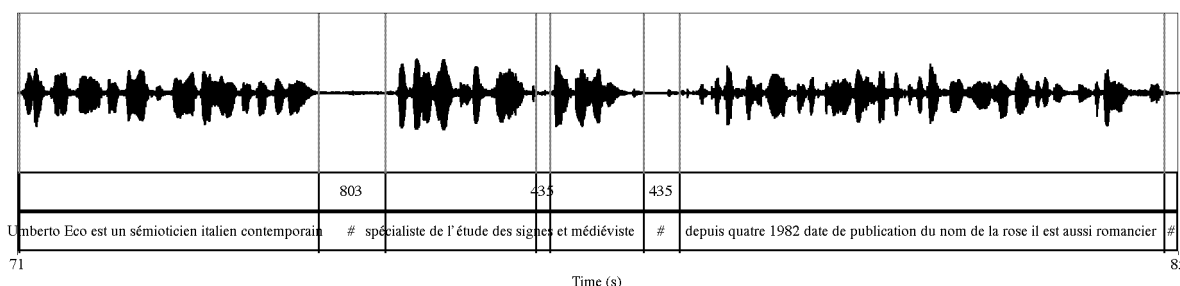

Figure 4: Prosody of text 2

Here are notetakers' graphic traces.

• N' notetaking:

• NN+'s notetaking:

• NN-'s notetaking:

Although the NN+ notes as many information following discursive structure of lecture as the N, the NN- takes only words to the extent of her linguistic ability, as it was claimed in the tables of general performance (see Figures 2 and 3).

The figure bellow (Figure 5) showing another part of speech is the same in terms of pauses, but different in delivery (2.74 words/s). It contains 0 new information item, one didactic accent and 5 intra-proposition pauses:

[Text 3] et °que fait Manzoni au contraire je suis page 59 #[415] il choisit le XVIIe siècle et une époque d'esclavage et des personnages vils #[234] et un spadassin #[256] un seul mais félon et pas de bataille racontée #[321] et le choix courageux d'alourdir son histoire avec des documents # et des cris.

N's notetaking:

For this unit, only the N could maintain a scriptural rhythm enough, but neither the NN+ nor the NN- note any word. Thus it is supposed that the delivery is an important component for notetaking activity. On the other hand, a practical virtue of pauses and didactic accents on notetaking remains unclear: a scriptural advantage does not necessarily correspond to the moment when there is an increase of pauses or of didactic accent in the two instances. So there might be another variable to take into account.

4. Discussion

The participants' scriptural behaviour confronted to the two examples is very different. For the first one, all participants take notes with, indeed, a decrease for the NN-. For the second one, only the N takes notes. It is nevertheless difficult to claim the examples are very different concerning the didactic prosody. Let us examine once more the examples with discourse pauses (##):

[Text 2] ## tout d'abord donc l'Apostille au nom de la rose d'Umberto Eco ## Umberto Eco est un sémioticien italien contemporain # spécialiste de l'étude des signes # et médiéviste ## depuis 1982 date de publication du Nom de la rose il est aussi romancier ##

[Text 3] ## et que fait Manzoni, au contraire je suis page 59 # il choisit le XVIIe siècle et une époque d'esclavage et des personnages vils # et un spadassin # un seul mais félon et pas de bataille racontée # et le choix courageux d'alourdir son histoire avec des documents # et des cris ##

As seen, the lecturer's speech in the Text 2 is fuller of discourse pauses than in the Text 3. Comparing two examples, differential notetaking performance could be attributed to the occurrence of these pauses.

Considering all results and observations, it seems to be that there are three levels of prosody pertinent to notetaking activity. At first, didactic accents and intra-proposition pauses differentiate notetakers' performance according to their linguistic level. In principle, these are not effective enough to facilitate less competent non-native students' notetaking, since what they can do is to write words they understand and/or
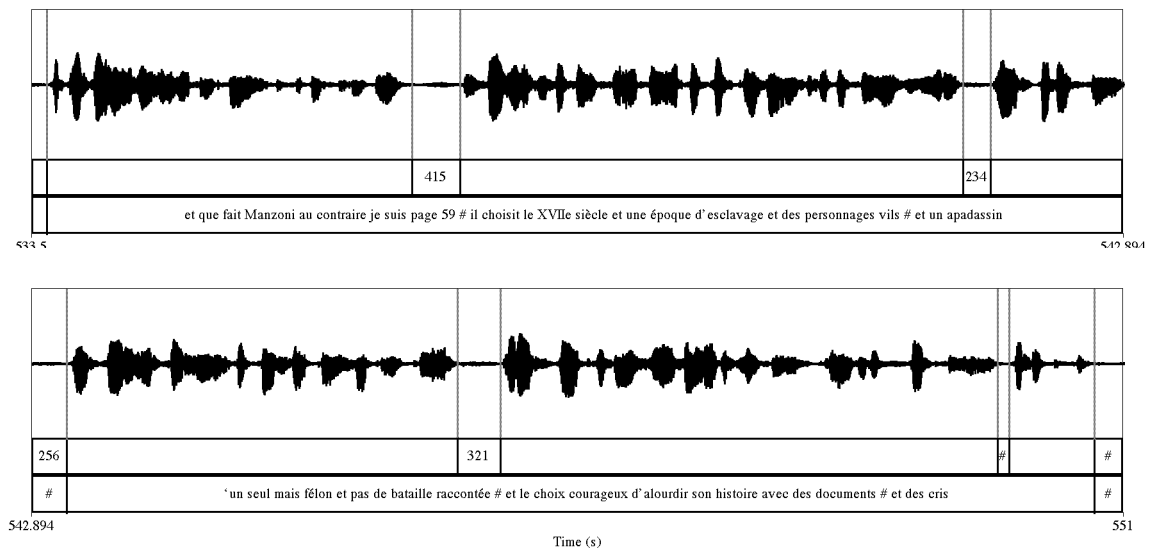

Figure 5: Prosody of text 3

hear.

On the contrary, advanced non-native students are more sensitive to didactic prosody than less advanced ones, and thus capable to discern relevant information thanks to these cues. Second, discourse pauses are usefull device for notetaking if these are present in the speech. In particular, this kind of pauses possibly compensates proficient non-natives' lack of technical and linguistic skills. It was observed that these students sometimes used a scriptural "play back" during his notetaking when speech condition allowed them to do it (even after several words). It is supposed that advanced non-native students must have developed a specific strategy using discourse pauses, which is not necessarily didactic, for his own practical sake of notetaking.

Third, the delivery is differential enough to make inefficient advanced non-natives' performance, keeping only native students on activity. Any non-native students could not follow speech at a high pace, which would be disadvantageous. However, a rapid speech generally does not include important information (e.g. anecdotal examples). In this sense, Ns' overperformance is sometimes not positive from an academic viewpoint because they tend to take even less important items on their notes.

The last claim gives rise to the hypothesis that there is a certain link between noted information and discourse pauses, in particular a close relationship between advanced non-native's performance. In order to test this corelation, an additional table was established. Beforehand, pauses less longer than 1 second are not considered as a real discourse pause according to an empirical observation. This finding is shown in the Figure 6.
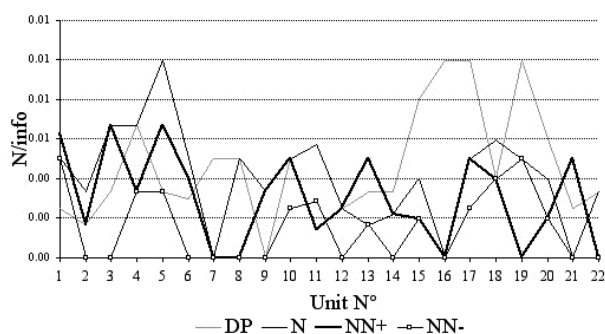

Figure 5: Discourse pause and performance (/info)

According to it, tendency-matching to discourse pauses is seen in the advanced non-native student's performance (NN+) rather than less advanced one's (NN-) and the native's (N). Furthermore, a remarkable delay of tendency is observed in performance. This means that pauses of the preceding unit in speech are helpful for notetaking of the current unit. Indeed when the lecturer begins a unit, students are still taking note of preceding unit. That is to say, ample discourse pauses are a kind of "respiration" for notetakers offering them a scriptural condition to comfortably entry in their activity. That is much more beneficial for the advanced non-native students.

The notion of the didactic accent useful for notetaking seems to be a complex matter in the academic discourse. To date the definitions were on some empirical observations. In fact, it is demonstrated that didactic accent on the verbal discourse is realized by an increase of duration and intensity on syllables where accent is displaced (in French these syllables are not the final syllables of a word or a group of words which are the accented syllables usually). However, this claim necessitates an additional argument: for the notetaking, the didactic prosody has to include discursive pauses, which play a scaffolding role in this activity.

5. Conclusion

The didactic accent prosodically marks an importance of information in the lecturer's speech. It is produced with or without intra-proposition pauses. The didactic scope of the didactic accent and pause is limited for non-native notetakers. They need no-didactic pauses and a slow delivery in order to work out well their academic tasks. Furthermore, they need not only to learn linguistic knowledge of the academic fields in L2, but also to be trained in strategies specific to notetaking for successful studies in a foreign country.

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