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Note-taking in second language: Language procedures and self evaluation of the difficulties

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Introduction

- 5 The objectives of this research are to identify and to compare the techniques of note-taking used by Spanish- and English-speaking students when they take notes in French. These students follow a university course in France, and French is for them the second language they use at the university. We aim at knowing whether these students use distinct techniques when they take notes in their first or second language. Our goal is to understand the way and the conditions that make students to succeed in adjusting the note-taking procedures that they use in their first language to the more difficult context of note-taking in a second language.

Note-taking in first and second language

- 6 Note-taking has received little attention from the communities of researchers and teachers that investigate issues related to second language (Chaudron, Loschky, & Cook, 1994; Clerehan, 1995; Dunkel, 1988; Famhy & Bilton, 1991). In first language, note takers are simultaneously engaged in language comprehension and production activities (Piolat, 2004, 2007), which are likely to exceed working memory capacities (Baddeley, 2000). Indeed, taking note involves a deliberate and strategic management of the processes involved in language production and comprehension. Moreover, during a lecture or a conference, note takers must control variations of rate between the speed of emission of what they hear and the speed of their writing (Peverly, Ramaswamy, Garner, Brown, Sumowski, & Alidoost, in press). For that reason, they develop adjustment strategies that rely on transcription of a reduced quantity of information compared to that contained in the source discourse (Piolat, 2006). This reduction operates at a conceptual level by selecting only ideas considered as important, and at a formal level, with abbreviating procedures that are specific to note-taking.
- 7 When taking notes in second language, language mastering is of major importance. Students are indeed faced with many difficulties for at least two reasons. First, when linguistic skills are poorly automated, in other words when psycholinguistics processes require a large amount of attention and are not fluent, they prevent a fast transcription of information (Barbier, 1998, 2003, 2004; Ransdell & Barbier, 2002; Roca de Larios, Murphy & Marin, 2002). Second, when the metacognitive control of note-taking is restricted, note takers do not succeed in evaluating the reliability of the content of their notes with respect to former knowledge and competence already acquired in first language (Barbier, 2003, 2004; Barbier, Faraco, Piolat, Roussey, & Kida, 2003). These two sources of difficulties have been identified from the very low performance (quantitatively and qualitatively) observed among note takers in second language.

Analysis of the notes

- 8 In the literature on note-taking, formal analyses of notes are based on the identification of at least two types of variables (Chaudron, Loschky, & Cook, 1994; Barbier *et al.*, 2003). The first variables are quantitative and concern the total number of words and/or abbreviations. The

second variables are qualitative and relate to the content of the notes (new words, words in first language), to the organization of ideas and to the structuring of the spatial layout (in particular use of marks related to lists effects: classification, separation in sections, underlining, columns, etc.; Barbier, Faraco, Piolat, & Branca, 2004).

9 Quantitative analyses of notes show that abbreviating procedures, which are considered by some scholars as performance indicators of note-taking (Fahmy & Bilton, 1991; Janda, 1985) or even as quality indicators (Chaudron *et al.*, 1994), are little used in second language. For example, when students take notes in second language they do not use the surface abbreviating procedures that are commonly shared by native speakers. They also do not use the note-taking tools, such as icons, they used in their first language note-taking and that allow them to quickly write down what they hear. Actually, note takers in second language do not possess a large variety of techniques and so they sometimes switch in a first language transcription of information or even sometimes produce neologisms (Badger, White, Sutherland, & Haggis, 2001; Faraco, Barbier, & Piolat, 2002; Dunkel & Davis, 1994).

10 As the rare on-line data on note-taking indicates, the lack of linguistic automatisms in second language is also visible in the focus of attention which is directed on the microstructure of the source text (the same phenomenon is observed in text composition). Indeed, Faraco *et al.* (2002) have shown that students that take notes in a second language (L2) make twice more pauses at intra- and inter-words boundaries than do native-speaking students. The former note takers particularly hesitate when they transcribe what they hear. In addition, qualitative analyses of notes in L2 indicate the use of a limited syntax, a “disorganized” note-taking (Fahmy & Bilton, 1990), or confusion in the procedures that highlight information provided between titles, definitions and examples (Clerehan, 1995). Finally, notes are generally shorter in L2 than in L1 (Clerehan, 1995; Faraco *et al.*, 2002).

11 It should be noted that the interpretation of these indicators as reflecting note takers difficulties in L2, even if shared by researchers, has to be modulated if one wants to obtain a deeper knowledge of the nature of these difficulties. Indeed, in note-taking, a cognitive difficulty cannot be evaluated by the value of only one indicator but instead by several indicators, the same value of a single indicator being sometimes observed with different difficulties. For example, if noting a low volume of words may indicate that the note taker has problems to understand and to store information, and this is particularly the case in L2, it can also indicate the use of an elaborated strategy of the note taker who may try to retain only the most important concepts in the form of key words (a strategy which is often used by expert note takers in L1). Therefore, a conjunct analysis of multiple indicators is required to analyse strategies of note-taking. Syntactical, lexical and conceptual fidelity has also to be taken into account for analysing note-taking strategies. In particular, note takers in L2 very often transcribe the words they are reading without introducing new words, staying very close to the source text (Barbier *et al.*, 2003). Until where can this phenomenon be interpreted as revealing a low performance? Indicators of L2 note-taking must be interpreted in networks, and in parallel with other indicators more directly related to the subjective difficulties of note takers.

Research questions

12 If some consensus arises from the works cited above about the techniques used to take notes in L2, the precise nature of these techniques needs to be better identified. In particular, the issue of how note takers’ skills in language affect the strategies and performance of note-taking in L2 has to be addressed. Indeed, even with a comparable level of skills in L2, possible comprehension difficulties directly related to the on-going note-taking activity have to be taken into consideration, for example with a questionnaire about perceived difficulty, which is the case in the following study.

13 Another issue that has to be addressed and this is the objective of the present study, concerns the factors that are likely to influence how students take notes in L2 with regards to the

techniques they use to take notes in L1. Despite an apparent homogeneity of L2 difficulties, practices of note takers differ on several dimensions. For instance, students may have developed personal abilities that they have progressively acquired during their courses and according to their own referents. Moreover, note-taking practices are also specific to each national group and are related to teaching traditions. For example, French students generally use their notes as an external memory and consequently try to note the more they can. By contrast, American students prefer to take fewer notes by using a comprehension strategy (Omer, 2003). Thus, in each culture, note takers use a set of personal and conventional abilities (i.e., abbreviations, icons, semiographic marks, formatting, etc.; see Branca-Rosoff, 1998; Barbier *et al.*, 2003) that are more or less stabilized for each of them. In addition to cultural differences in note-taking practices, the very nature of the mother tongue of note takers, and its structural similarities with the second language, may affect how students transfer the techniques they use in L1 note-taking to note-taking in L2. When taking notes in French as a foreign language, it appears that this transfer is particularly hard for Japanese students compared with Spanish students (Barbier *et al.*, 2003). In addition to difficulties related to their level of mastery of French, these Japanese students have to inhibit procedures that are specific of the ideographic written system and which are not operational in an alphabetical written system as the one used for taking notes in French. Structural differences between the first and second languages may thus have an impact on the students' potential to adjust their note taking in L2.

- 14 Accordingly, the present study explores the impact of structural differences between the first language and the second language that is used for taking notes. More precisely, we compare how two Indo-European languages (Spanish, a roman language, and English, a German language) that share the same alphabetical written system than French affects note-taking in French. It is important to noticed that these two languages also differs regarding characteristics of the orthographic system: Spanish is orthographically more transparent (with direct phonological-graphemic correspondences) than French, whereas English is orthographically less transparent (with generally less direct phonological-graphemic correspondences) than French. Given these differences, do Spanish and English students have different practices of note-taking in first language? And to what extent do their capacities to adjust their note-taking in L2 depend on the skills they have developed in L1 note-taking? If these skills are an important factor, what are their effects on the techniques actually used in L2, as well as on the difficulties experienced by the note takers?

Method

Participants

- 15 Ten Spanish students and 12 English students participated in this experiment. All were registered to the SCEFEE of the University of Provence (SCEFEE: Service Commun d'Enseignement du Français aux Etudiants Etrangers, the common service for the teaching of French as a foreign language). The SCEFEE is an examination centre for two diplomas: the DELF (Diplôme d'Etudes de Langue Française) and the DALF (Diplôme Approfondi de Langue Française). These diplomas are delivered by the French Ministère de l'Education Nationale and can be presented by any foreign individual who wishes to valorize her/his skills in French for personal or professional goals. The DELF and the DALF actually include 6 different levels corresponding to the 6 levels of the Common European Framework of Reference for Languages. The DELF comprises 4 levels that each correspond to a specific diploma (A1, A2, B1, B2) and the DALF comprises 2 levels that each correspond to a specific diploma (C1, C2). To prepare to that examinations, the SCEFEE proposes intensive classes of French language and civilization. At the beginning of the academic year, students complete a test and are then ranked in one of the three following levels: beginner, intermediate, advanced.

16 The students that participated to the experiment were all at the intermediate level and were registered to the May-June examination session of the DELF B2 (“independent users, ease in social discourse and in self-correction”) or of the DALF C1 (“autonomous users, easy and spontaneous communication”; these skills are described on the web site of the Centre International d’Etudes Pédagogiques: <http://www.ciep.fr/delfdalf/>). To obtain supplementary information on the participants and on their linguistic experience, they fulfilled a questionnaire at the moment of the experiment which was realized in May-June, namely after 8 months of French classes at the SCEFEE and just before the examination period. This questionnaire informed on general characteristics of the participants (nationality, age, university level, mother tongue and foreign languages), experience with French (number of years in learning French, diplomas in French), practices of note-taking in mother tongue and in French in university context, and their level of knowledge of the French University system. Therefore, this pre-experiment questionnaire allowed us to know the number of years the students learned French in their country of origin (5 to 6 years on average) or any specific differences that may appear between the two groups of participants. All participants indicated that they used to take notes in their first language as in French, and all had knowledge of the French university system (conditions of registration, examinations, etc.).

Material

17 Two "lectures" were presented, one in each language. The two source texts were eight-minutes long and were tap-recorded with an equivalent rate of speech. These texts were elaborated from the “Guide for Studies at the University of Provence” which is distributed to French students but also to foreign students in an English version. A Spanish version was also written for the purpose of the experiment. Finally, some formulas (“*Here is...*”; “*It is important to note...*”) were included to give oral effects to the texts.

18 Topic of text A was about the curriculum in French universities. Topic of text B was about registration modalities for foreign students (838 words). Text A was available in English (780 words) and in Spanish (848 words) and text B in French (780 words).

19 Perceived difficulty of the participants regarding their comprehension of the texts of the lecture and their note-taking activity in L1 and in L2 was assessed with a questionnaire. Seven questions concerned comprehension (e.g., “*Did you find these texts difficult?*”; “*Did you understand most of the main ideas?*”). Twelve other questions concerned note-taking (e.g., “*Did you note no information because you did not understand it?*”, “*Because the lecturer spoke too fast?*”, “*Because you did not write fast enough?*”).

Procedure

20 The experiment was conducted in a language laboratory of the University of Provence, in the framework of a course of French as a Foreign Language. The experiment was collective for each linguistic group, but each student worked individually in the language laboratory. A headphone was available for listening the instructions and the recordings of the source texts. Thus, the two texts (text A in L1 - English or Spanish - and text B in French L2) were listened in identical conditions.

21 The procedure comprised the 6 following experimental phases: (1) answering the questionnaire about linguistic experience; (2) listening one of the texts with note-taking in a given language; (3) production of an abstract of what had been listened in the same language and without the notes; (4) listening of another text in the other language (L1 or L2) with note-taking; (5) production of an abstract of what had been listened in the same language and without the notes; (6) answering the questionnaire about perceived difficulty of comprehension and of note-taking in L1 and L2.

22 Each phase of note-taking lasted approximately 10 minutes, instructions and listening of the course included. Each phase of written production lasted 30 minutes. Half of the participants

first realised the experiment in L1, and then in L2, and conversely for the other half. Because the experiment was conducted collectively in the language laboratory during a usual course, it was not possible to fully cross texts A and B with language. Consequently, text B was always presented in French as L2.

Variables

Self-evaluation of difficulties experienced by the students

23 This variable evaluated perception of the note takers regarding their difficulty to perform the different exercises of the experiment (Ransdell, Barbier, & Niit, 2006). When they estimated that the task was easy, they scored 0. When they indicated having experienced a difficulty, they scored 1. The higher the score of the students (up to 14) was, the more the experience of difficulty in carrying out the exercises (understanding, taking notes and summarizing).

Analysis of the notes

24 Several types of descriptors were analysed to account for the techniques of note-taking carried out by the English and Spanish students: percentage of words noted, percentage of words present both in the source text and in the notes and percentage and types of abbreviations. It must be noted that the written summaries were not analyzed within the framework of this study (for their analysis, see Boch, Tutin & Grossmann, 2003).

25 *Percentage of words noted.* For each note taker, percentage of words noted corresponded to the ratio between the number of words written down and the total number of words in the source text. For the word count, every group of letters bounded by a space or a punctuation mark, including function words like articles, pronouns, etc., was counted as a word (Barbier *et al.*, 2003; Chaudron, Loschky & Cook, 1994; Clerehan, 1995). The apostrophe was regarded as a separating character. For example, "*l'université*" ("*the university*" in English) corresponded to two words ("*aujourd'hui*" – *today* in English – was regarded as only one word).

26 *Percentage of words present both in the source text and in the notes.* This variable was calculated for each note taker by dividing the number of words in the notes that were also in the source text (that these terms be abbreviated or not) by the total number of words noted.

27 *Percentage of abbreviated words.* This variable corresponded to the number of abbreviated words related to the total number of words that were noted. The selected criterion for deciding whether a word was abbreviated was the following. When a noted word did not contain its usual number of letters, it was regarded as an abbreviation. It should be noticed, that, with note-taking in L2, a few rare notes of the students are difficult to classify. Indeed, in some cases, it is difficult to distinguish if the note taker has abbreviated a word or if she/he has made a spelling mistake that could have resulted in a light modification of the sequence of letters of that word. For these rare cases, the words in question were not entered in the count of abbreviated words.

28 *Percentage of different types of lexical abbreviations.* The grid of analysis of the procedures of lexical condensation established by Barbier, Faraco, Piolat, and Branca-Rossof (2004) was used (see also Faraco, Barbier, & Piolat, 2002). According to that grid, lexical abbreviations correspond to the procedure note takers use when they cut off letters from regular words. Nine procedures can be identified: initialism, truncation of the end, truncation of the beginning, truncation of the beginning and the end, truncation of central syllabic units, truncation of isolated letters, conservation of the frame of consonants, suffix contraction, acronyms. Thus, for example, for the word "*procédure*" ("*procedure*" in English), in the case of a truncation of the end, "*proc*" is written down; for conserving the frame of consonant, "*prcdr*" is written down and a mixed procedure could lead to "*proc^{es}*".

29 The notes in L1 and L2 of each participant were thus analyzed word by word. The procedures used punctually or only by one or two subjects were not retained. Because only three abbreviation procedures were significantly employed (truncation of the end, conservation

of the frame of consonants, and mixed), only these three types of lexical abbreviations are presented in the results. For each note taker, the percentage of each type of lexical abbreviation was calculated by dividing the number of times a procedure was used by the total number of words abbreviated with these three procedures.

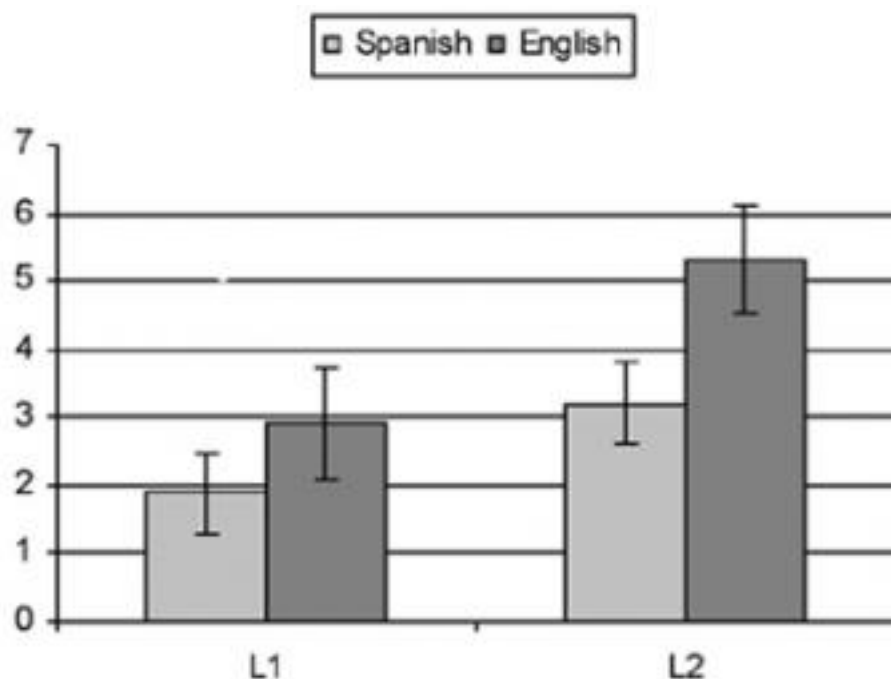
30 *Number of list marks.* This variable corresponded to the number of marks that indicate a tabulated or a chronological structuring of information (dashes; classifications like 1, 2, 3 or A, B, C). These various techniques of physical formatting of the message indicate the implementation of a comprehension process. These techniques are substitutive equivalents of a statement or of a group of statements that allow note takers to mark the structure or the importance of what they are writing down. For each note taker, the number of marks composing the lists was counted, this, whatever the number of lists carried out.

Results

31 Analyses of variance were conducted on each variable with First language of the students (English versus Spanish) as a between-participants factor and with Language of the notes (English or Spanish as first language, L1 *versus* French as second language, L2) as a within-participant factor.

32 Perceived difficulty of the students

33 Whatever the first language, perceived difficulty of the students was larger in L2 (4.26) than in L1 (2.40; $F(1, 20) = 20.64, p < .0002$). Perceived difficulty of the English students tended to be higher than that of the Spanish students, $F(1, 20) = 3.39, p = .081$. In more details (see figure 1), English students experienced more difficulty than Spanish students when they took notes in French as L2 (English: 5.3 *versus* Spanish: 3.2; $F(1, 20) = 4.42, p < .05$). This perception of difficulty did not significantly vary when the note-taking was carried out in L1 (English: 2.9 *versus* Spanish: 1.9; $F(1, 20) = 1.34, p > .25$)

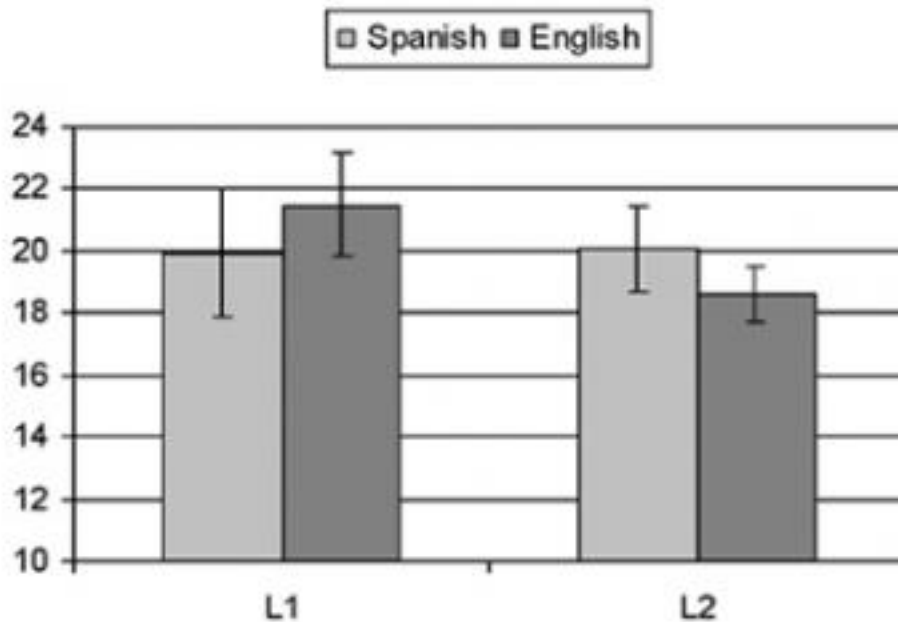


34 *Figure 1.* Mean score of perceived difficulty of the English and Spanish students when they
35 take notes in their first language or in French as L2.

36 Analysis of the notes

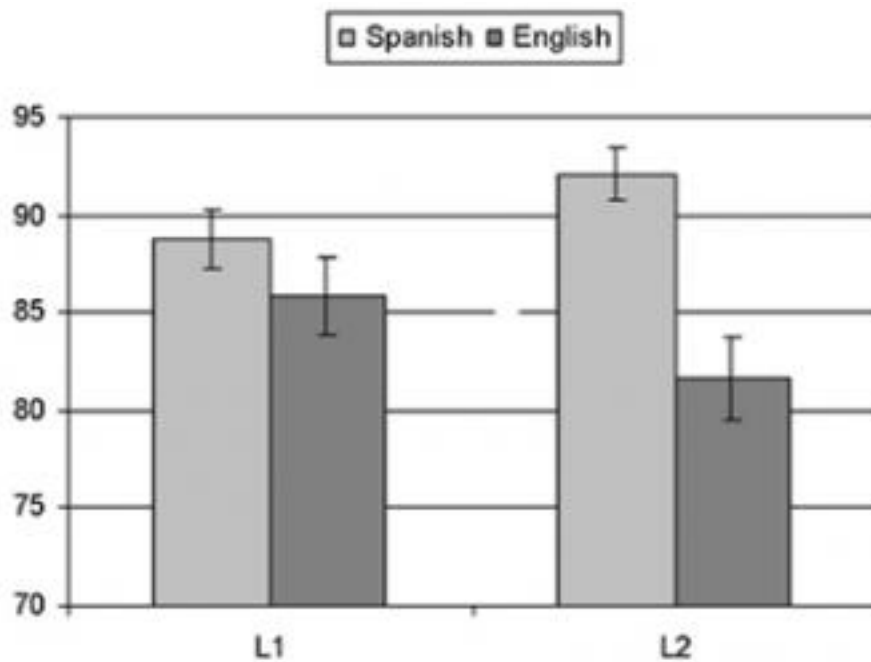
37 *Percentage of words noted.* The number of words noted by the participants did not vary according to their first language (around 20 %, $F(1, 20) < 1$). More words were written in first

language than in second language, $F(1, 20) = 4.49, p > .05$. More precisely (see figure 2), results indicated a first language (English or Spanish) x Language of the note (L1 versus L2) interaction, $F(1, 20) = 5.65, p < .03$. The percentage of words written down by the Spanish note takers did not vary as a function of the language of note-taking (L1 = 19.9 %; L2 = 20.1%), whereas English students took more notes in L1 (21.5 %) than in L2 (18.6 %).



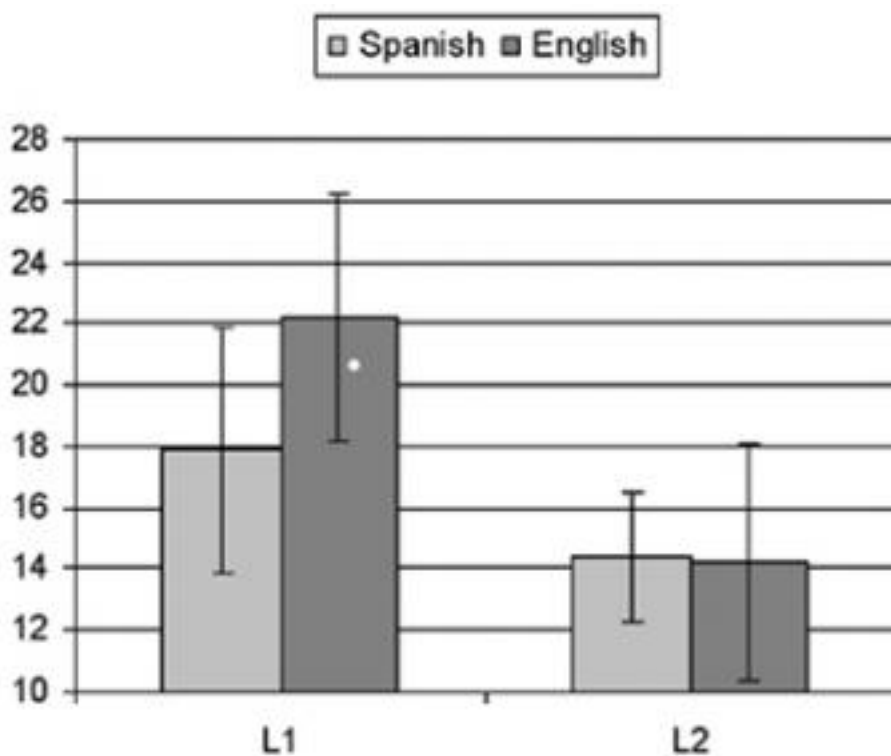
38 *Figure 2. Percentage of words noted by the English and Spanish students when taking notes in their first language (L1) and in French as a second language (L2).*

39 *Percentage of words present both in the source text and in the notes. No significant effect of Language of the notes was found between first and second language, $F(1, 20) < 01$. The percentage of words that were in the notes and in the sources that the Spanish students wrote down (90.4 %) was significantly higher than that of the English students (83.7 %; $F(1, 20) = 7.43, p < .015$). Moreover, the First language (English or Spanish) reliably interacted with Language of the notes (L1 versus L2), $F(1, 20) = 20.6, p < .0002$ (see figure 3). The English students wrote down more words that were both in the sources and in the notes when taking notes in L1 (85.8 %) than in L2 (81.1 %). Conversely, Spanish students stayed closer to the source texts in L2 (92.1 %) than in L1 (88.8 %).*



40 *Figure 3.* Percentage of words that are present both in the source text and in the notes that English and Spanish students wrote down when they took notes in their first language and in French as a second language.

41 *Percentage of abbreviated words.* The students abbreviated more words in L1 (20 %) than in L2 (14 %), $F(1, 20) = 11.7, p < .003$. The First language of the students did not affect the percentage of abbreviated words when note-taking in L1 (English: 22.2 *versus* Spanish: 17.9; $F(1, 20) < 1$) or in French L2 (English students: 14.2 *versus* Spanish students: 14.4; $F(1, 20) < 1$). The First language and Language of the notes factors did not significantly interacted, $F(1, 20) = 1.83, p > .19$ (see figure 4).



42 *Figure 4.* Percentage of words abbreviated by the English and Spanish students when taking notes in L1 and in L2.

43 *Percentage of different types of lexical abbreviations.* The analysis did not show reliable difference between the English and Spanish students nor between the first and second language, $F_s(1, 20) < 1$. By contrast, whatever their first language or the language used for taking the notes, the students who participated to the study used differently the abbreviating procedures (see table 1).

44 They mainly used two abbreviating procedures. The more frequent procedure was the truncation procedure (71.8 %) and then a mixed procedure (24.2 %), $F(1, 20) = 48.5, p < .0001$. They rarely used the procedure of conservation of the frame of consonants. When they did, a very few Spanish students conserved the frame of consonants, that they have noted in Spanish (2) or in French (5). The English students were more numerous but only in L1 (12 in L1, 4 in L2; $X^2 = 4.41; p < .05$).

45 Table 1. Mean percentages of the three abbreviating procedures (truncation, conservation of the frame of consonants, and mixed) that the Spanish and English students used when they took notes in L1 and in French as L2 (between brackets the standard deviations).

Procedures	English L1	English L2	Total		
Truncation	64.5	(6.37)	74.1	(4.68)	69.3
Mixed	28.4	(6.12)	22.8	(4.32)	25.6
Frame of consonants	7.1	(1.63)	3.1	(2.07)	5.1
	Spanish L1	Spanish L2	Total		
Truncation	69.2	(8.37)	74.4	(4.2)	71.8
Mixed	29.7	(8.48)	18.7	(3.97)	24.2
Frame of consonants	1.1	(0.68)	6.9	(2.76)	4

46 Number of list marks

47 The use of lists greatly varied between students. Some used them abundantly whereas others
 very little. So, we split the students in two groups according to the median number of list marks
 they produced in L1 and in L2. Then, we calculated the mean of each sub-group (see Table 2).
 48 Table 2. Mean number of list marks according to their frequency of use by the English and
 Spanish when they took notes in L1 and in French as L2 (between brackets the standard
 deviations

	Use frequency	English students	Spanish students		
L1	Low	20.4	(1.91)	22.33	(5.18)
	High	6.14	(1.61)	3.25	(1.7)
L2	Low	23	(4.14)	17.33	(2.88)
	High	7.75	(1.97)	4.75	(1.25)

49 In addition, the number of list marks produced by each participant when taking notes in L1
 and in L2 significantly correlated. When taking notes in French as L2, the English students,
 as the Spanish students, tended to use the marks of list as they did in L1 (English students L1
 and L2: $r = .92, p < .001$; Spanish students L1 and L2: $r = .83, p < .001$).

Discussion

50 This experiment addressed two issues. First, do Spanish and English students have different
 practices of note-taking in first language? Second, do these two groups of students differently
 adjust the techniques they use for taking notes in first language when they take notes in second
 language?

51 With regard to the practices of participants of note-taking in first language, the findings of the
 present experiment did not show any difference between the two groups of students, and this
 for all the variables collected (percentage of words noted, percentage of words present both in
 the sources and in the notes, percentage of abbreviated words and percentage of the different
 types of abbreviating procedures). The experimental context selected in our experiment did
 not show variations of the note-taking practices although the English and Spanish students
 came from different educational systems and universities. It is thus necessary to continue this
 kind of investigations to describe in a finer grain the procedures these students use when they
 take notes in their first language.

52 With regard to note-taking in French as L2, English and Spanish students seem to transfer
 the procedures they use to structure their notes in first language to their L2 notes. They
 indeed used list marks in the same proportion in L2 than they did in L1. Thus, the first
 language did not affect the structure of the notes they took in second language. At the opposite,
 the other variables analysed in this study (volume and fidelity of the notes, abbreviating
 procedures) indicate a strategic adjustment of the students to face the difficulty they
 encounter when they take notes in L2. Responses to the questionnaire of perceived difficulty
 indicated that the English students experienced more difficulty than the Spanish students. The
 perceived difficulty of comprehension, as it has been evaluated in this experiment, reflects
 an understanding of the content of the source texts by the students but also their possibility
 to note what they understood. Therefore, the differences observed between the two groups of
 students are likely to be related to differences in general French language ability that could
 exist between participants at an intermediate level. This interpretative hypothesis will have to
 be tested by observing other groups of Spanish- and English-speaking students whose levels of
 mastering of L2 are clearly different. It is also important to note that the structural resemblance
 between French and Spanish (two Roman languages) might also explain why the transfer of
 procedures was easier from Spanish to French than from English to French.

53 Indeed, a better understanding of the text (or at least the feeling to understand it well) made
 Spanish students to develop different strategy to face the difficulty of note-taking in L2. They
 noted as much as in L1 and they applied a comparable procedure for abbreviating words (end

truncation > mixed procedure > conservation of the frame of consonants, the latter procedure being particularly rare). They less abbreviated the words presumably because they did not succeed in transferring to French as a L2 the abbreviating procedures they use in their first language. But the fact that their notes were closer to the source text indicates their large capacity to transcribe what they heard compared to English students. For English students, the difficulty they experienced in comprehending and in taking notes are reflected in their poorer production of notes, as compared with their L1 production. These difficulties resulted in less elaborated note-taking strategies and certainly in a cognitive overload that constrained them to store the information they heard differently than Spanish Students (see the lesser percentage of words present both in the source and in the notes). Finally, they used less abbreviating procedures presumably because they had difficulties in applying these procedures to lexical units in L2. This kind of withdrawal was seen only for one abbreviating procedure, namely the conservation of the frame of consonants, as they used it more frequently in L1 than in L2. The abbreviating procedures that they mainly used in the two languages are the mixed and truncation procedures.

54 In sum, taking notes in a second language clearly constitutes a particular skill that requires both to quickly understand and to use abbreviating procedures that make transcription more fitted to the rate of speech of the lecturer. The difficulty for students taking notes in L2 relates to one or the other of these aspects, or both. As it is indicated by the responses to the general questionnaire, it is important to note that participants' general abilities in L2 may have not been sufficiently contrasted in this study, and do not allow attributing their difficulty to understand and to take notes in real time to these differences. The nature of their first language however affected their perception of difficulty, and consequently, the way they adjusted their procedures of note-taking in L2 by modulating the volume of information they noted as well as the extent of the abbreviating procedures they applied.

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Bibliography

- Baddeley, A. (2000). The episodic buffer: a new component of working memory? *Trends in Cognitive Sciences*, 4(11), 417-423.
- Badger, R., White, G., Sutherland, P., & Haggis, T. (2001). Note perfect: an investigation of how students view taking notes in lectures. *System*, 29 (3), 405-417.
- Barbier, M.-L. (1998). Rédaction de texte en langue première et en langue seconde: comparaison de la gestion des processus et des ressources cognitives [Writing text in L1 and L2: Comparing management of processes and of cognitive resources]. *Psychologie Française*, 43 (4), 361-370.
- Barbier, M.-L. (2003). Ecrire en L2: bilan et perspectives des recherches [Writing in L2: results and research perspectives]. *Arob@se* 7, 1-2 [<http://www.univ-rouen.fr/arobase/bck10.html>].
- Barbier, M.-L. (2004). Ecrire en langue seconde, quelles spécificités? [Writing in L2: what specificities?]. In A. Piolat (Ed.), *Ecriture, Approches en sciences cognitives* [Writing: Approaches in the cognitive sciences] (pp. 181-203). Aix-en-Provence: Presses Universitaires de Provence.
- Barbier, M.-L., Faraco, M., Piolat, A., & Branca, S. (2004). Prise de notes et procédés de condensation en français L2 par des étudiants anglais, espagnols et japonais [Note-taking and abbreviation procedures in French L2 by English, Spanish, and Japanese students]. In N. Andrieux-Reix, S. Branca, & C. Puech (Eds.), *Ecriture abrégées (notes, notules, messages, codes...)*. *L'abréviation entre pratiques spontanées, codifications, modernité et histoire* [Abbreviatory writing] (pp. 143-161). Gap: Editions Orphys.

- Barbier, M.-L., Faraco, M., Piolat, A., Roussey, J.-Y., & Kida, T. (2003). Comparaison de la prise de notes d'étudiants japonais et espagnols dans leur langue native et en français L2 [Comparing note-taking between Japanese and Spanish students in L1 and L2]. *Arob@se* 7, 1-2 [http://www.univ-rouen.fr/arobase/bck10.html].
- Boch, F., Tutin, A., & Grossmann, F. (2003). Analyse de textes réécrits à partir de prise de notes. Intérêts de la méthode RST (Rhetorical Structure Theory), *Arob@se*, 1-2, [http://www.univ-rouen.fr/arobase/bck10.html].
- Branca-Rosoff, S. (1998). Abréviations et icônes dans les prises de notes des étudiants. In M. Bilger, K. dan den Eynde & F. Gadet (Eds.) *Analyse linguistique et approches de l'oral. Recueil d'études offert en hommage à Claire-Blanche-Benveniste* (pp. 286-299). Leuven-Paris : Peeters.
- Chaudron, C., Loschky, L., & Cook, J. (1994). Second language listening comprehension and lecture note-taking. In J. Flowerdew (Ed.), *Academic listening: Research perspectives* (pp. 75-92). Cambridge: Cambridge University Press.
- Clerehan, R. (1995). Taking it down: Note-taking practices of L1 and L2 students, *English for specific purposes*, 14 (2), 137-157.
- Dunkel, P. (1988). The content of L1 and L2 students lecture notes and its relation to test performance. *TESOL Quarterly*, 22 (2), 259-281.
- Dunkel, P.A., & Davis, J.N. (1994). The effect of rhetorical signaling cues on the recall of English lecture information by speakers of English as a native or second language. In J. Flowerdew (ed.), *Academic listening: Research perspectives* (pp. 55-74). Cambridge: Cambridge University Press.
- Fahmy, J.J. & Bilton, L. (1991). Listening and note-taking in higher education. In S. Anivan (Ed.), *Language teaching Methodology for the Nineties*. Singapore: SEAMO Regional Language Centre.
- Faraco, M., Barbier, M.-L. & Piolat, A. (2002). A comparison between L1 and L2 note-taking by undergraduate students. In S. Ransdell & M.-L. Barbier (Volume, Eds.), *New Directions in Research on L2 Writing* (pp. 145-167). Dordrecht: Kluwer Academic Publishers.
- Janda, R.D. (1985). Note-taking English as a simplified register. *Discourse Processes*, 8, 437-454.
- Omer, D. (2003). La prise de notes à la française pour des noteurs non natifs, *Arob@se*, 1-2, p. 141-151 [http://www.univ-rouen.fr/arobase/bck10.html].
- Peeverly, S. T., Ramaswamy, V., Garner, J., Brown, C., Sumowski, J., & Alidoost, M. (in press). What predicts skill in lecture note taking ? *Journal of Educational Psychology*.
- Piolat, A. (2004). La prise de notes: Écriture de l'urgence [Note-taking: Emergency writing]. In A. Piolat (Ed.). *Ecriture. Approches en sciences cognitives* [Writing : Approaches in Cognitive Science] (pp. 206-229). Aix-en-Provence: Presses Universitaires de Provence.
- Piolat, A. (2006). *La prise de notes* [Note-taking] (second Ed.). Paris: Presses Universitaires de France.
- Piolat, A. (2007). Effects of note-taking technique and working-memory span on cognitive effort and recall performance. In M. Torrance, & L. van Waes, & D. Galbraith (Eds.), *Writing and cognition: research and applications* (pp.109-124). Amsterdam: Elsevier.
- Ransdell, S. E., & Barbier, M.-L. (2002). An introduction to psycholinguistic approaches to understanding second language writing. In S. Ransdell & M.L. Barbier (Volume, Eds.), *New Directions in Research on L2 Writing* (pp. 1-10). Dordrecht: Kluwer Academic Publishers.
- Ransdell, S., Barbier, M.-L., & Niit, T. (2006). Metacognitions about language skill and working memory among monolingual and bilingual college students: when does multilingualism matter? *The International Journal of Bilingual Education and Bilingualism*, 9, 728-741.
- Roca de Larios, J., Murphy, L., Marin, J. (2002). A critical examination of L2 writing process research. In G. Rijlaarsdam (Serie Ed.), *Studies in Writing, Vol. 11* & S. Ransdell & M.-L. Barbier (Volume Eds.), *New Directions in Research on L2 Writing* (pp. 11-47). Dordrecht: Kluwer Academic Publishers.

References

Electronic reference

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Résumé / Abstract

Cette étude vise à comparer les procédés utilisés par 22 étudiants espagnols et anglais lors d'une prise de note à partir d'un cours en français langue seconde (L2) et d'un cours dans leur langue native respective (L1). Trois types de variables ont été utilisées pour analyser (1) le sentiment de difficulté relatif aux tâches à réaliser (compréhension et prise de notes) ; (2) le volume des notes et leur fidélité aux discours sources; (3) les procédés d'abréviation au niveau lexical et discursif. Selon les résultats, les étudiants ne procèdent pas différemment en L1. Par contre, des différences sont observées en ce qui concerne leur capacité d'ajustement et leurs stratégies développées durant la prise de notes en français langue seconde.

Mots clés : Langue seconde, production écrite, compréhension, prise de notes, procédures abrégatives

This study compared the techniques used by 22 Spanish and English students to take notes from a lecture in French as a second language (L2) and in their first language (L1). Three kinds of variables have been analysed: (1) perceived difficulty of the comprehension and production tasks involved in note-taking; (2) volume of the notes and their fidelity to the source texts; (3) abbreviating procedures at lexical and discourse levels. Results indicate that participants do not take notes differently in L1. They however differ in the way they adjust their note-taking strategies in French as a second language.

Keywords : Second language, writing, language comprehension, note-taking, abbreviating procedures