READING IN DIFFERENT LANGUAGES AND WITH DIFFERENT PURPOSES

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ABSTRACT: In this case study I investigate how two variables – reading purpose (study or entertainment) and language of the text (first or second) – affect the reading comprehension of a Brazilian reader who has English as her second language. The participant read one text in each language and for each purpose and reading comprehension was assessed through pause protocols and free recall. Results showed that reading purpose did not affect much comprehension since the reading for study condition did not yield better results in the free recall. As regards the language of the text, apparently the reader had a little more difficulty in dealing with both texts in the second language. The results are discussed in relation to the linguistic interdependence and the linguistic threshold hypotheses and also taking into consideration potential methodological influences.

KEYWORDS: reading purpose; second language; case study.

RESUMO: Neste estudo de caso foi feita uma investigação de como duas variáveis – propósito de leitura (estudo ou entretenimento) e língua do texto (materna ou estrangeira) – afetam a compreensão de uma leitora brasileira que tem inglês como língua estrangeira. A informante leu um texto em cada língua e com cada um dos propósitos e a compreensão leitora foi avaliada por protocolo de pausa e *free recall* – teste de recordação livre. Os resultados mostraram que o propósito da leitura não teve muito impacto na compreensão, já que a condição de leitura para estudo não suscitou resultados melhores no teste de recordação livre. No que concerne à língua do texto, aparentemente a leitora teve um pouco mais de dificuldade em lidar com os dois textos na língua estrangeira. Os resultados são discutidos à luz das hipóteses de interdependência linguística e de limiar linguístico e também levando em consideração possíveis influências metodológicas.

1. Introduction

Despite the fact that reading comprehension will depend on the interaction between the reader and the text, commonly, research in the field has been divided according to the two kinds of variables that have an impact on reading: reader and text variables. As regards the reader, knowledge of language and purpose of reading are among the many different aspects that are likely to contribute to the understanding of a text[84] (ALDERSON, 2000).

As Linderholm and van den Broek (2002) point out, one would expect that the reason why you read something will affect the way you proceed with your reading. That is, the same material may be read differently depending on one's objectives. For example, we can read an article in a journal because the title drew our attention or we can do that in order to give a speech about the topic. I will also contend that, intuitively, one would expect that reading in a first or in a second language (L1/L2) will also proceed in (at least) slightly different ways since even if we are fluent L2 readers, still we will probably have less vocabulary in the L2, know fewer idioms, etc.

Aebersold and Field (1997) advocate for research on L2 reading by arguing that, despite the fact that the reading processes cannot be observed, this kind of research can give us some hypotheses about the factors that influence L2 reading. Moreover, since it has been claimed that in reading comprehension "more information is contributed by the reader than by the print on the page" (CLARKE & SILBERSTEIN, 1977:136-7, *apud* AEBERSOLD & FIELD, 1997: 6), the purpose of the present endeavor – a case study – is to investigate how

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[84] See Alderson (2000) for a review of both text and reader variables.

two reader variables may affect reading comprehension. More specifically, I intend to contrast L1 and L2 reading as well as reading for study and reading for entertainment.

Besides this introductory section, this article has another 4 sections. In the Review of the Literature − section 2 − the rationale underlying the present study is presented. This section if followed by a thorough description of the design of the study (section 3). Section 4 encompasses the answers for the research questions and a discussion of the data analyses, and the final section (5) brings some concluding remarks.

2. Review of the literature

2.1 Reading purpose

Lorch, Klusewitz, and Lorch (1995) point out that, despite the interest educational psychologists have in how readers cope with limitations on their processing abilities, they are also interested in how readers modify their reading behavior in order to meet specific requirements of different reading situations. It is a fact that people read texts with different goals and the reason why they read a text will influence the way they read it (AEBERSOLD & FIELD, 1997; CLAPHAM, 1996; ALDERSON, 2000), the skills that are required and how they use them (ALDERSON, 2000), and the ultimate understanding and recall they have of that text (CARVER, 1984, *apud* ALDERSON, 2000). Mature readers regularly engage in different reading experiences and it is likely that, depending on the situation, among other characteristics of reading behavior, they will adjust their reading speed, differ on how much attention they will devote to different parts of the texts, use different study techniques, have higher or lower standards of coherence[85] (VAN DEN BROEK, RISDEN, & HUSEBYE-

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[85] The level of understanding a learner aims at (LINDERHOLM & VAN DEN BROEK, 2002).

HARTMANN, 1995, *apud* LORCH et al., 1995), and change the nature and extent of the inferences they draw (LORCH et al., 1995).

Linderholm and van den Broek (2002) set out to investigate to what extent readers altered their cognitive processes and strategies depending on their reason for reading. More specifically, the authors wanted to know whether low-working memory capacity (WMC)[86] participants would be able to adjust their cognitive processes and strategies to fit a reading purpose. In order to investigate that, Linderholm and van den Broek had their participants read a text for entertainment and one for study and, through the analyses of subjects' verbal protocols and recalls, concluded that maintaining the goal for reading was not too demanding for either high- or low-WMC subjects since all participants adjusted their processing. However, the groups emphasized different cognitive processes and strategies. The low-WMC subjects, aware of their limitations, opted to use less demanding processes to meet their goals. Unfortunately for them, this strategy backfired, hindering their recall. From these results, the authors came to advance that keeping the reading purpose in mind is not a too-demanding task. A study that found support for that, and is directly related to the present investigation, was that of Horiba (2000, *apud* LINDERHOLM & VAN DEN BROEK, 2002). The author found that many of his nonnative speakers of English adjusted processing when reading for comprehension versus reading for enjoyment (though it might be that in a more complex task the reading goal becomes more of a burden for less proficient readers). The authors explain the relation between these studies saying that, just as low-WMC readers, nonnative readers also have limited resources for text comprehension since they spend many of their attentional resources in low-level cognitive tasks.

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[86] Working memory capacity is a cognitive factor known to correlate with reading comprehension (e.g., DANEMAN & CARPENTER, 1980, 1983; JUST & CARPENTER, 1992; TOMITCH, 1996, 1999-2000). Having a smaller WMC might hinder one's performance in complex tasks, where the parallel processing of a number of subtasks is required.

Narvaez, van den Broek, and Ruiz (1999) aimed at verifying whether learners would generate different inferences depending on their reading purpose, and, for that, asked their participants to read 4 texts with different purposes: entertainment or study. In this study, the researchers asked the participants to read two texts aloud (to assess on-line comprehension) and another 2 texts silently (to assess off-line behavior). From the analyses Narvaez et al. found out that, as one would expect, readers with a study purpose produced more repetitions and evaluations and more often acknowledged knowledge breaks than did readers with an entertainment purpose. However, there were no differences in reading time, recall, or accuracy in the answers to comprehension questions as a function of reading purpose.

Lorch, Lorch, and Klusewitz (1993, *apud* LORCH et al., 1995) investigated how readers may alter their reading behavior across 10 reading situations and found that the biggest distinction made by their participants was between reading for school-related purposes versus reading for personal choice. Lorch et al. (1995) confirmed this tendency and, relying on the questionnaires answered by their participants, determined that when students thought about reading to prepare for exams, they defined this type of reading as demanding and involving slow reading, a great deal of testing for understanding, frequent use of supports, much rereading, close attention to major points, and good concentration. Contrastively, when asked how they read when they did not have a specific purpose and thinking they would not be tested on that subject, participants said their reading could be considered superficial. Accordingly, light reading was considered as relatively undemanding. As indicated by their subjects, this type of reading is done with average speed and testing of understanding and not much use of supports, rereading, attention to major points, or concentration.

As regards the construction of a situation model, Lorch et al. (1995) point out that it is likely that in situations such as light reading, readers may construct a superficial representation of the text, based primarily on the processing of local coherence relations. In

143

other situations, on the other hand (presumably study is one of them), readers may construct a much more complete representation, including global coherence relations and, perhaps, elaborative and predictive inferences. Thus, it is expected that reading comprehension will be different in study and entertainment situations.

2.2 L2 reading

For some time, researchers have been interested in determining whether L2 reading comprehension is more affected by one's L2 linguistic knowledge or by general L1 reading abilities (AEBERSOLD & FIELD, 1997; ALDERSON, 2000; CLAPHAM, 1996; YAMASHITA, 2002)**.** These two lines of thought have been termed the linguistic interdependence hypothesis and the linguistic threshold hypothesis.

Briefly, the linguistic interdependence hypothesis predicts that general L1 reading abilities will be used during L2 reading comprehension (CUMMINS, 1983). Thus, if one is a good L1 reader, s/he will automatically be a good L2 reader (ALDERSON, 2000). In fact, Aebersold and Field (1997) observe that some of the basic processes of reading appear to be similar in all languages and, thus, readers, especially L2 ones, are prepared to capitalize on some of those similarities. Goodman (1982, *apud* WURR, 2003) is one of the advocates of this view and argues that some physiological, psychological and strategic processes in reading are common to all. He believes that reading through optical, perceptual, syntactic, and semantic cycles and using sampling, predicting, confirming and correcting strategies are universal to all forms of reading. Thus, these processes and strategies should transfer to the L2. Evidence for this view comes from, for example, Aarts and Verhoeven (1999), Block (1986, *apud* CLAPHAM, 1996), Sarig (1987, *apud* CLAPHAM, 1996), Francis (2000),

Genesee and Riches (2006), Reyes (2006), and Horiba, van den Broek, and Fletcher (1993, *apud* ZWAAN & BROWN, 1996).

The linguistic threshold hypothesis, on the other hand, has at its core the premise that the ease with which language can be processed depends on a reader's linguistic knowledge. While in the L1 it is commonly assumed that all readers possess the basic linguistic knowledge necessary, in the L2 it has been assumed that before being able to read, one must first acquire knowledge about the language (ALDERSON, 2000). In other words, before L1 reading skills can be transferred to the L2 reading situation, a threshold of L2 linguistic knowledge must be obtained (CLAPHAM, 1996). Indeed, there have been a number of studies which have contributed with evidence for this view (BERNHARDT & KAMIL, 1995, *apud* ALDERSON, 2000; CARRELL, 1991, *apud* ALDERSON, 2000; LAUFER & SIM, 1985, *apud* CLAPHAM, 1996; CLARKE, 1980, *apud* CLAPHAM, 1996; CZIKO, 1980, *apud* CLAPHAM, 1996; BOSSERS, 1992, *apud* CLAPHAM, 1996; ZWAAN & BROWN, 1996).

In 1996, Clapham pointed out that it was generally accepted that low level language learners read differently from native speakers. What remained a mystery was the stage (if there is one) at which the L2 reader becomes sufficiently proficient in the L2 to the point of reading as an L1 reader. More recently, and taking the results from empirical studies (mentioned above) into consideration, Alderson (2000) stated that it seems likely that L2 knowledge is more important than L1 reading abilities for L2 reading comprehension. Still, Yamashita (2002) warns to the possible simplification of this issue arguing that although researchers tend to emphasize the importance of L2 proficiency, the contribution of L1 reading ability cannot be ignored. It is more likely that L2 reading comprehension is the result of a complex interaction between cognitive factors (L1 reading ability) and linguistic factors (L2 proficiency).

Despite the fact that some reading processes are thought to be universal (see GOODMAN, 1971, above), it is believed that L2 reading places greater demands on the reader (WURR, 2003). A good cognitive explanation for that comes from the information processing approach. According to this approach, humans are limited capacity processors and, as such, can devote only so much attention to the subtasks of a complex task (such as reading) at the same time (MCLAUGHLIN & HEREDIA, 1996). In reading, this means that if tasks such as decoding letters and words (which are very basic) are not automatized, their processing demands will take up so many resources and time that it will be impossible for more complex tasks (such as generating inferences, for example) to be performed. Linderholm and van den Broek (2002), for example, support this view. According to them, low-WMC subjects (see subsection 2.1) and L2 readers read in similar ways. That is, spending much of their attentional resources in low-level cognitive tasks.

Zwaan and Brown (1996) advocate that at least two processes differ in the way they happen during L1 and L2 comprehension: lexical access and syntactic processing. The authors claim there is evidence (POTTER, SO, VON ECKHARDT, & FELDMAN, 1984, *apud* ZWAAN & BROWN, 1996; BATES & MACWHINNEY, 1989, *apud* ZWAAN & BROWN, 1996) that both are more consuming in the L2 than in the L1. Thus, they contend that in nonfluent L2 text comprehension word- and sentence-level processing will be more resource consuming than in L1 reading.

The difference between L1 and L2 reading comprehension was made evident in some studies. Kozminski and Graetz (1986) asked their participants to read authentic academic texts in either the L2 or the L1 (translated version of the L2 texts) and then to write short summaries of them. What they found was that the L2 readers studied the text less efficiently than the L1 readers. Kolić-Vehovec and Bajšanski (2007) investigated the importance of monitoring for comprehension. In their study, the participants read a narrative passage and

then answered open-ended questions about it. When data was analyzed, the authors observed that comprehension monitoring during reading differed in students with high and low perceived level of proficiency in the L2. Those students who were more proficient had better comprehension monitoring skills and reading comprehension than the less proficient ones.

Finally, Zwaan and Brown (1996) examined how college students comprehended and represented in long-term memory short narrative texts in the L1 and the L2. They asked their participants to think aloud during the comprehension of English and French stories and discovered that a major problem, when the participants were performing in the L2, was the failure to retrieve a word meaning. Unsurprisingly, these word problems occurred almost exclusively in L2 comprehension. Additionally, from their analyses of the participants' think-aloud protocols, they observed that (1) language proficiency had an impressive impact on the extent to which participants generated inferences; (2) learners were more accurate on their paraphrases in the L1 than in the L2; (3) integrative processing[87] was minimal in L2 comprehension and the participants constructed only weak situation models; and (4) during L2 comprehension participants verbalized more comprehension problems than they did during L1 comprehension. As regards the construction of the situation model, drawing on Just and Carpenter (1992), Zwaan and Brown (1996) claimed that L2 readers' lack of efficient lexical and syntactic processes affects their ability to integrate information across sentences which would allow them to build a coherent situation model.

Hence, in light of the issues reviewed above, the following research questions guided the present investigation:

1. Are there differences in the participant's reading comprehension (assessed through pause protocols and free recall) when reading for entertainment and when reading for study?

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[87] The integration of information at the situation model level (ZWAAN & BROWN, 1996).

2.   Are there differences in the participant's reading comprehension (assessed through pause protocols and free recall) when reading in her L1 (Brazilian Portuguese) and when reading in her L2 (English)?

3.   What are the participant's reported opinions about the differences between reading with different purposes and reading in different languages?

In the next section, the method used in order to answer the questions posed above is explained.

1. Method

So as to answer the research questions posed above, I conducted a case study with one adult Brazilian L2 learner of English. This participant read short texts in her L1 (Portuguese) and in the L2 (English) and, while reading, should keep different purposes in mind – one text in each language was supposed to be read in the way she reads for pleasure and one text in each language should be read in the way she reads for study.

The choice of the participant took into consideration the following criteria. First, if we expect that L2 reading performance is somehow related to L1 reading performance and we are aiming at good performances, the ideal would be that the informant be a good reader in the L1. Since not long before data collection the participant had finished an undergraduate course at a Federal University in Brazil and was, at the time, taking a graduate course, she seemed to fulfill this requirement. Second, if there is a threshold of L2 knowledge that should be reached before the processes used in L1 reading can be used in L2 reading, then the informant should possess at least some proficiency in English. This also seemed to be the case of the participant. Not only had she studied English formally previously, but also she kept somehow in contact with the language at the time data was collected. Finally, while many people read for entertainment and to gather information on a daily basis, not everyone is used to engage regularly with reading for study – a process that can be expected to make different demands

from the reader. Since the informant of the present study was, at the time of data collection, taking a graduate course, reading for study was part of her regular routine.

Ultimately, the participant, an acquaintance of the researcher, seemed to be a good example of a young adult who is involved with reading both for work and for study on a regular basis and who also, at times, engages in reading a little in the L2.

3.1 Subject

Denise – pseudonym – is a 31 year-old pharmacist. Her L1 is Brazilian Portuguese and she has studied English as a foreign language both in the regular school (for 7 years) and at the Extracurricular program at the Universidade Federal de Santa Catarina (for 1 year, levels 4 and 5 – out of 10 levels). She stopped studying English formally 7 years before data collection took place. At the time of data collection she reported not to have much contact with the English language. Though she said to regularly watch movies, TV programs and serials in English, Denise declared to always make use of subtitles in Portuguese. However, she acknowledged to occasionally read academic articles in English. At the time of data collection the participant had only been to an English speaking country once, as a tourist, for one week, and that had happened 7 years before data was collected.

3.2 Materials

In order to assess reading comprehension, Denise was asked to read 4 short texts, 2 in the L1 and 2 in the L2. The L2 texts were taken from Newsweek magazine. *Make mine rare* (Newsweek, June 7/June 14, 2004: 75) had 176 words and compared low-carbohydrate to low-calorie diets, and *Sleep to stay slim* (Newsweek, July 26, 2004: 49), which had 133 words

149

and brought advice to parents of overweight children about on they could prevent their children from becoming obese. The L1 texts were taken from Veja magazine. *7 pecados da dieta* (Veja, 2028, ano 40, nº 39, 3 de outubro de 2007: 126-128) had 186 words and talked about the most common mistakes Brazilians make when it comes to losing weight and *Caminhar é preciso* (Veja, 2021, ano 40, nº 32, 15 de agosto de 2007: 126) had 147 words and was about the benefits of walking.

The two English texts were used exactly as they were presented in the magazine, but the two Portuguese texts required some minor editing done so as to be more similar, in length, to the English ones. What happens is that, in Veja, the articles had an introduction and then each of the seven diet mistakes and the three ways to practice walking were listed as items, with a short text further explaining each item. Keeping these short texts along with the items would cause the texts in Portuguese to be much lengthier than the ones in English. Thus, in order to keep a balance between the number of words across the two languages, I made the decision to only list the items, without the short text that followed each of them. It is my belief that this change has not impacted the text enough so as to hinder (or aid) comprehension.

All texts had some characteristics in common. Since the text content is one of the variables which affect text processing (AEBERSOLD & FIELD, 1997; ALDERSON, 2000), despite the fact that it might be best assessing learners on different topics (ALDERSON, 2000), due to time constraints, this was not possible, and all texts were about health and fitness. Controlling for content and limiting it to one area was an attempt to prevent, as much as possible, differences between amounts of background knowledge. In addition to that, the researcher suspected that since the participant was young and had a background in healthcare, this probably would be a topic both familiar and interesting to the participant.

Another decision made was to use original texts (of course, one might argue that the modifications done to the Portuguese texts strip them of their originality, but this is a risk I was willing to take), although they were not presented in their "context". That is, they were typed on a blank sheet of paper rather than being shown in the magazines' pages, something that would make them more similar to the original. This decision was made because as regards visual support – from images – there was an imbalance between the texts in the two languages. The texts from Newsweek only contained one small photograph, while Veja texts had many illustrations and the amount of visual support could become an undesired intervening variable. As Clapham (1996) points out, if research is interested in the reading comprehension of natural texts (and I am), natural texts should be used to collect data.

Finally, magazine articles were chosen in detriment of other kinds of texts because this is a kind of reading that makes part of most people's lives (ALDERSON, 2000). Another reason for choosing magazine articles was the fact that in Narvaez et al. (1999) they found that the differences in the kind of inferences made only appeared (or were greater) for the expository text. Thus, it might be that expository texts elicit more differences in reading purposes.

Taking the background of the reader into consideration, these texts probably were not much challenging to her. Because of the graduate degree the participant was pursuing at the time of data collection, she was probably used to read much lengthier texts (at least for the purpose of study) and also texts with more complex syntax and vocabulary than the one found in the texts used for data collection. However, since some of the texts would be in the participant's L2 and she would have to read and complete recall protocols for 2 texts in each encounter, a choice was made to have texts that would not be too taxing for the participant. Otherwise, her performance on the second text of the day could suffer.

The participant also completed a questionnaire with biographical data, mainly regarding her English learning history and, in order to have a glimpse of the way Denise sees reading for different purposes and in different languages, she answered a post-task questionnaire/interview (see the next subsection).

3.3 Procedures

As mentioned in the previous subsection, the texts were copied from the magazines and presented to the reader on a blank page, font Times New Roman, size 12, inside a box. The choice of the box was to preserve the text's magazine-like presentation. Each text was printed, in black, on a different sheet of white paper. The order of presentation, purpose of reading, and dates of data collection were the following:

Table 1. Data collection dates

TEXT 1	TEXT 2	TEXT 3	TEXT 4
Sleep to stay slim	*Caminhar é preciso*	*7 pecados da dieta*	*Make mine rare*
Entertainment	Study	Entertainment	Study
November, 5th		November, 7th	

Both meetings with the participant were held at the researcher's house, in a quiet room where there was a table, a cupboard, a computer and some chairs. At the moment of data collection only the researcher and the participant were present and a tape recorder was turned on as soon as the researcher finished giving the reading instructions, and only turned off when the participant started the free recall, which was written.

On the first session, before starting with the tasks, the researcher told Denise what the data collection entailed, explaining that she was expected to read (only once) a total of 4 texts

- 2 in English and 2 in Portuguese - with different purposes. She was also told that while she listened to the reading instructions for the texts, at any moment she could interrupt the researcher and ask her for further explanations, in any language. Before going on to the first task, the researcher modeled (with a different text from the ones used) how Denise should proceed with the pause protocols (see the next subsection). After that, the routine for all tasks was the same.

The researcher would deliver the instructions for reading orally (in English for the English texts and in Portuguese for the Portuguese texts) and then turn on the tape recorder. The participant immediately started to read the text, only stopping for the pause protocols. When the text and the protocols were finished, the researcher turned off the tape recorder and the participant proceeded to the free recall. The instructions given by the researcher (here only presented in English) were the following.

For the text which should be read as if for entertainment, the researcher said: pretend you are reading a magazine and this article calls your attention. Read it as you usually read magazine articles. The instruction for the study purpose text was: pretend you have been given this article to study for a test. During the instructions, Denise made only one question, in Portuguese, confirming the instructions for the first task and, on this occasion, the researcher also answered her in Portuguese.

At the end of data collection, that is, after finishing the free recall for the fourth text, she also answered the profile questionnaire and the post-task questionnaire/interview. The post-task questionnaire was designed to be completed in writing by the participant, without the participation of the researcher. However, since the researcher was present in the room at the time of completion, Denise, at some point, started to "think aloud" about the answers she was writing on the paper. At this point, the researcher decided to turn the tape recorder on and also interacted with the participant, further exploring some of Denise's answers.

153

3.4 Reading comprehension measures

Since, as Clapham (1996) argues, there is no perfect measure of reading comprehension, to provide converging evidence, reading comprehension was assessed through two measures, an on-line and an off-line. Following Tomitch (1999-2000), the on-line measure used was the pause protocol. This is a recorded verbal report where subjects are asked to interrupt their reading at any point where they encounter a problem or something that calls their attention and give a report of their understanding of the text. Still following Tomitch, Denise was also asked to give a report at the end of each paragraph. She was free to produce her protocols in Portuguese or English and she chose to do all of them in Portuguese.

Additionally, since there have been findings pointing to the influence that purpose exerts on recall (e.g., ANDERSON & PICHERT, 1978, *apud* NARVAEZ et al., 1999; PICHERT & ANDERSON, 1977, *apud* NARVAEZ et al., 1999), the off-line measure of text comprehension was free recall. Though free recall may assess memory as well as comprehension, it has been a measure frequently used to judge reading comprehension (LINDERHOLM & VAN DEN BROEK, 2002; NARVAEZ et al., 1999; TOMITCH, 1996, 1999-2000). Thus, as soon as the reader finished reading each of the texts she was asked to, immediately, write down everything she could remember about it. This time, differently from what happened during the pause protocols, she had to write in Portuguese for the texts in Portuguese and in English for the texts in English.

3.5 Data analyses

Data was analyzed both quantitative and qualitatively. First, each of the texts used was divided into clauses. Then, all speech produced during the pause protocols was transcribed

and observations made by the reader were marked. Subsequently, the speech of the pause protocols was compared to the original texts in order to verify how reading comprehension took place on-line; that is, how many clauses present in the text were also present in the reader's speech. Later, these protocols were also compared to the free recalls produced.

The texts of the free recall were matched against the original clauses and, following Narvaez et al. (1999), credit was given for gist recall of a clause. Since this is a case study, none of these data were submitted to statistical treatment and thus, comparison was only done through percentages. The data provided through the questionnaire/interview was only analyzed qualitatively.

On the last subsection, the results obtained are presented and discussed.

2. Results and discussion

In order to develop this section in a well-organized fashion, each of the research questions will be answered in turn.

1. Are there differences in the participant's reading comprehension (assessed through pause protocols and free recall) when reading for entertainment and when reading for study?

In the study condition, during the pause protocols, in Portuguese, Denise mentioned 10 out of the 15 clauses that made up the text (66.6%). Somehow surprisingly, in English this percentage was higher – 85% (17 out of 20 clauses). In the entertainment condition, in Portuguese, she mentioned 26 out of the 28 clauses during her pause protocols (an impressive figure of 92.8%) whereas in English she mentioned 15 out of the 20 clauses, or 75%. Though the numbers vary across reading purposes, taking these figures into consideration we cannot see a pattern of understanding that could indicate that she was putting more effort in understanding the text when reading for study. Quite on the contrary, the largest difference in percentage is that between the amount of clauses mentioned in the pause protocol when reading for study in Portuguese and when reading for entertainment in the same language and

this difference (more than 30%) favored the entertainment task! Apparently, reading for entertainment or reading for study did not affect much the on-line understanding of the reader, what appears is that Denise had specific difficulties with the text for study in Portuguese, since she did well in the study condition with the English text.

As for the off-line measure used, in the free recall in the study condition, in Portuguese, Denise included 7 out of the 15 clauses of the text (46.6%) and in English she included 9 out of 20 clauses (45%). Regarding the entertainment condition, the participant recalled 64.2% of the clauses (18 out of 28) when reading the Portuguese text and 50% (10 out of 20 clauses) when reading the English one. This time around we can observe a clearer pattern. Apparently, and somewhat unexpectedly, the reader failed in employing adequate strategies in the reading for study condition and thus recalled even less than when reading for entertainment, in *both* languages.

Finally, if we compare how much Denise understood of the text while reading (as measured by the clauses she included in her pause protocols) and what she included in her free recalls, we can observe that, again, we have mixed results. She included 70% of what she mentioned in her protocols in the study condition in Portuguese and 47.5% in the study condition in English. As regards the entertainment condition, in Portuguese she mentioned 69.2% of what she had verbalized in the pause protocol while in English she included 53.3% of what was in her pause protocol for the entertainment condition.

The results regarding reading purpose are somewhat puzzling taking the literature reviewed into consideration. First, one would expect greater effects for reading purpose and, moreover, if there was greater understanding in one of the conditions, we would expect that to be in the study, not in the entertainment one. Still, lack of differences in recall across conditions is not unheard of.

The same happened in Narvaez et al.'s (1999) study. In spite of the fact that their participants seemed to be reading differently when they were reading for study and when they were reading for entertainment, there were no differences between the participants' recall of the texts or accuracy in answers in the text comprehension questions when the two conditions were compared (though they found differences for the kinds of inferences generated). One possible reason for the present findings is the use of expository texts. According to Narvaez et al., "expository texts seem to evoke study-type behaviors, specifically the generation of repetitions and evaluations, as well as the identification of knowledge-based coherence breaks" (1999, p. 493). Horiba (2000, *apud* LINDERHOLM & VAN DEN BROEK, 2002) also found that some of her nonnative readers read similarly across reading conditions (reading for comprehension vs. reading for enjoyment) but she assumed that this was due to the lack of L2 proficiency of these subjects. I am not sure if this might be considered a possibility since the reader in the present study seems to have had a rather good L2 reading comprehension.

More likely, the lack of a greater difference between the two reading conditions was at least in part an artifact of the method used for data collection. Though the reader was told to read the entertainment text as if she had just picked up a magazine in her house, without any compromise, Denise knew she would be somehow tested about the text content and, as most human beings would do, probably strived to do her best in both conditions. As Lorch et al. (1995) observed, "reading […] for any kind of external evaluation calls for the use of study strategies that would not typically be used when doing reading that will not be evaluated" (p. 395).

If differences in purpose apparently did not have much effect on the way Denise read, it might be that these differences do not matter as much for her as the difference between reading in the L1 and reading in the L2. The next question addresses this possibility.

2. Are there differences in the participant's reading comprehension (assessed through pause protocols and free recall) when reading in her L1 (Brazilian Portuguese) and when reading in her L2 (English)?

At the risk of being repetitive, but for the purposes of easier comparison, the data mentioned above will be repeated here, this time comparing the participant's performance in the different languages. Starting once more with the analysis of the pause protocols, in Portuguese, in the study condition, Denise mentioned 10 out of the 15 clauses of the text (66.6%), while in the entertainment condition she mentioned 26 out of the 28 clauses (92.8%). In English, in the study condition, she mentioned 17 out of the 20 clauses (85%) and in the entertainment condition the percentage was 75%, or 15 out of 20 clauses.

As it happened with the pause protocols when the different reading purposes were being taken into consideration, when we compare the reader's performance in the L1 against her performance in the L2 we again cannot see any trend that could indicate that reading took place differently depending on the language of the text being read. However, the numbers alone might mislead us to think that there were no difficulties in the on-line understanding of the subject, which is not true. While reading in English, in 2 different moments (one in the study condition and one in the entertainment one) the participant explicitly declared to be having comprehension problems (as did the participants of Zwaan and Brown's (1996) study). In the entertainment condition Denise said to be having problems to understand the terms "children prone to tantrums" and "soothe", and in the study condition she said not to understand the expression "carb-counters" or the excerpt "though they tested slightly better on triglyceride and blood-sugar levels". Interestingly, though she said not to understand the word "soothe" in the moment she read it, later on, in her recall, she mentioned "parents […] using food to comfort them [the children]". Probably seeing the word "comfort" at the end of the text helped Denise to confirm the meaning of "soothe". This finding is similar to what Zwaan

and Brown (1996) found with their participants, who also verbalized problems with vocabulary in the L2 (their main problem in L2 reading comprehension).

Turning to the free recall, in Portuguese, in the study condition, Denise included 7 out of the 15 clauses of the text (46.6%) and in the entertainment condition she produced 64.2% of the clauses (18 out of 28). In English, when reading for study, Denise recalled 9 out of 20 clauses (45%) and when reading for entertainment, she recalled 50% (10 out of 20 clauses). This time around we can see a pattern, with L2 reading comprehension apparently having been more demanding and thus less efficient than L1 reading. This gains the support from the comments she made (mentioned above) during the pause protocols.

Now, comparing how much the reader understood the text on-line (as measured by the clauses she included in her pause protocols) and what she included in her off-line measure, we can again notice a trend. Seventy percent of what Denise mentioned in her protocols in the study condition in Portuguese was included in her recall. For the entertainment condition this percentage was almost exactly the same, 69.2%. In English, however, in the study condition, her free recall had 47.5% of what she verbalized during the pause protocol and in the entertainment condition she included 53.3% of what was in her pause protocol in free recall. Once more we can notice that she retained more information in the L1 than in the L2, and this might be an indication of a more solidly-built situation model (JUST & CARPENTER, 1992; ZWAN & BROWN, 1996).

The fact that the differences between reading in the 2 languages were not much marked might be due to a number of reasons. First, if we side with Cummins (1983) and Goodman (1982, *apud* WURR, 2003), who argue in favor of the linguistic interdependence hypothesis, we could say that the good reading skills the participant has in the L1 were applied to the L2, and, thus, she also managed to understand these texts, even with her linguistic limitations. One piece of supporting evidence for that is the case of the word

159

"soothe" which she at first said not to understand, but, then, after reading the rest of the text, she managed to incorporate in her mental model of the text.

Another possible reason is the topic chosen for the texts. As mentioned in the Method section, Denise is a pharmacist and, thus, is likely to frequently read articles related to health and fitness. Consequently, it might be that her knowledge of the lexis of the text compensated for lack of general L2 linguistic knowledge (ALDERSON, 2000). That is, if there is a linguistic threshold that needs to be reached before one is able to employ L1 reading skills when reading in an L2, it seems that, at least for this domain, Denise has crossed the threshold. A final possible reason is the fact that magazines are the participant's favorite kind of reading. So, besides being familiar with the lexis, she is probably also familiar with the syntax used in this genre as well as the general structure of this kind of expository text.

I now turn to the final question addressed by the present investigation.

3. What are the participant's reported opinions about the differences between reading with different purposes and reading in different languages?

Through Denise's answers to the questionnaire she revealed that reading (both in Portuguese and in English) is one of her regular activities, taking from one to five hours of her week (that is, at least in the L1 we can consider her to be a proficient reader). In both Portuguese and English her main reading purposes are information, learning how to do something, and improving her reading skills (in this order). The fact that she mentioned "improving reading skill" as one of her reasons for reading indicates that she is not only aware of the active part she is expected to play in the reading process but also that reading is, indeed, a demanding process, and that we must sharpen our skills so as to facilitate our meaning making process (MCLAUGHLIN & HEREDIA, 1996).

The participant declared that she considers herself a good reader in Portuguese. According to her, though she normally does not have any difficulties in reading

160

comprehension, she is not an excellent reader, because she reads more magazines than books. As regards her English reading skills, Denise stated that they depend on the genre she is reading. Since she is somewhat used to reading academic articles in this language, she considers herself an excellent reader of those. On the other hand, the participant believes that if she were to read a book in English she would have more difficulties and would probably have to resort to a dictionary. Once again, it is possible to notice that lexis will likely be one of the greatest hindrances for L2 readers, as proposed by Zwaan and Brown (1996).

When asked about the differences between reading for different purposes and reading in different languages, the answers given are somewhat interesting now that questions number 1 and 2 have been answered and discussed. According to her answer to this question, she does not consider reading in English to be different from reading in Portuguese and thus she says not to do anything differently when reading in each of the languages (another indication that she might be, indeed, employing the skills and strategies learned and sharpened in the L1 to help her read in the L2, as proposed by the linguistic interdependence hypothesis (CUMMINS, 1983)). On the other hand, she stated that reading for study is different from reading for pleasure, something that is, indeed, expected to happen, according to Aebersold and Field (1997), Alderson (2000), Clapham (1996), and Linderholm and van den Broek (2002).

Denise's answers are interesting since in the present study very little difference was noted across reading purposes (and these differences favored the entertainment condition). Van den Broek et al. (1995 *apud* Lorch et al., 1995) predicts that some of the strategies readers will employ when reading for study are adjusting one's reading speed, choosing some parts of the text where to focus attention, and changing the study techniques. Lorch et al.'s (1995) participants mentioned that when they read for study they read more slowly, test for understanding, use support, re-read, pay attention to major points of the text, and concentrate

more than when reading for entertainment. From all these strategies, Denise mentioned only two: re-reading and checking understanding of the text. According to her, when she is only reading for pleasure she "simply reads" and when she does not understand something it does not matter to her. It might be, thus, that being prevented from using the strategy she usually does when reading for study (re-reading) she could do nothing but lower her standard of coherence and get as much as she could from the texts with only one reading.

When asked about difficulties concerning reading comprehension, she confirmed what was observed in the pause protocols. She claimed she only had reading comprehension problems when reading in the English language and that these problems were mainly related to unknown vocabulary, something also observed in Zwaan and Brown's (2007) study. Complicated syntax and unusual sentence length also seem to have made the L2 tasks more demanding to her but, according to the participant, the main factor to hinder her L2 comprehension, in general, was lack of linguistic (i.e., vocabulary) knowledge. As for the factors that help L2 reading comprehension, in general, she mentioned absence of unknown vocabulary, simple syntax and interesting content (in this order).

All in all, Denise's answers reflect some of what has been already documented in the literature. Though her recall was not better for the study condition, she reported to engage in this kind of task with a different approach from the one she employs when reading for pleasure. As regards reading in the different languages, though she declares not to do anything differently (at least not consciously) when reading in Portuguese and when reading in English, she mentions the two points in which L1 and L2 reading are expected to differ as regards the demands imposed by the process: lexis and syntax.

3. Concluding remarks

When I set out to conduct this study, I was naïve enough to imagine that my initial expectations would be fulfilled. As I have stated in the introduction, it is somehow expected that the results from reading texts with different purposes will be different. Moreover, when one thinks of that we can imagine that when you read knowing you will have a test about the subject, you read with more concentration and hence, you are likely to remember more from it. When you read just for entertainment it is likely that you will not remember as much (as long as we are talking about similar contents, of course).

Thus, the results were somewhat surprising. First, there was not much difference in comprehension between one and other reading purpose. More surprisingly still, the differences indicated that comprehension was greater for the reading then for the entertainment condition (see the results obtained by Linderholm and van den Broek (2002), Horiba (2000 *apud* Linderholm & van den Broek, 2000), Lorch et al. (1995), and Narvaez et al. (1999)).

As regards the contrast between L1 and L2 reading, I must say I was also slightly surprised with the present results. Though there were differences in reading comprehension in each of the languages and, in general, the participant performed better in the L1 than she did in the L2, there was one instance in which reading in the L2 yielded a better recall protocol than reading in the L1, something that was not found in the studies reviewed (KOLIĆ-VEHOVEC & BAJSANSKI, 2007; KOZMINSKI & GRAETZ, 1986; ZWAAN & BROWN, 1996).

A number of reasons for these results were advanced above but no firm conclusions can be arrived at with the data available. My suspicion is that because the content domain of the texts (health and fitness) was probably well-known to the participant (a professional

163

involved with healthcare), the texts might have been little demanding for the participant. In addition to that, knowing that she would be somehow tested (since she was aware of being the participant of a research about reading behavior), probably she simply strived to do her best in all situations and, in some cases, did even better in the entertainment than in the study situations and, in one occasion, did also better when reading in the L2 than when reading in the L1.

Nevertheless, this is only one possibility to explain the results. It may be that there were other variables at play that prevented the differences I expected from appearing. It could be, for example, that the reason why she performed better in the free recall of the texts for entertainment was due to her finding those subjects more interesting than the ones in the reading for study condition, since, though the content all fell into the health and fitness domain, the texts were, indeed, about different subjects. It might have been, also, that being prevented from using the strategy she uses normally when reading for study – re-reading – might have disrupted her in this process. There may also have been some piece of information inside the texts in the study condition that for some reason distracted her momentarily and this prevented her from building solid situation models for these texts. Still, since I did not conduct an interview with Denise as an attempt to clarify these possibilities, they are simply alternative explanations that could also account for her better performance in the entertainment condition.

Concerning the results for the difference between L1 and L2 reading, there was only one instance in which the performance in L2 reading seemed to be better than the one in L1 reading. When Denise was reading the text *Make mine rare* (the text for study, in English), in her verbal protocols she mentioned many more propositions (more than 30%) contained in the text than when she was reading the *Caminhar é preciso* text – the text for study in Portuguese. Besides the explanation offered above for this result, the better performance on the task in

164

English might reflect her disposition on the day, since these texts were read on different days. Indeed, her performance in the second encounter was better, in general, than that on the first day. While reading the other text in the 2nd encounter – *7 pecados da dieta* – for entertainment, she managed to reproduce 92.8% of the text's propositions during the verbal protocols. It may also be that she was simply more accustomed to the task, since she had already performed it both in English and in Portuguese in the previous encounter. In addition to that, it might be that she was simply happy that the tasks were finishing (the text in English for study was the last of all texts) and she had managed to accomplish them all and, thus, was trying even harder to do well.

As mentioned previously, since I did not conduct an interview with Denise after I analyzes the data, I have no means of knowing what other variables might have been at play while she was performing the tasks, and this is one of the limitations of the present study. In addition to that, there are other methodological limitations that could potentially explain the unanticipated results.

As regards the use of free recall, though it is a measure that has been widely used, it also has its restrictions. Lee (1986, *apud* CLAPHAM, 1996) observed that recall entangles productive and receptive processes and only highly competent students voluntarily go into much detail in their recalls. Students tend to keep them short so as to avoid production problems and this may omit a large part of what they actually do remember. Moreover, as mentioned in the Method section, recall depends on memory. Also, the texts used were quite short and with short sentences also. The longest one had only 28 clauses, while Narvaez et al.'s (1999) expository text, for example, had 82 clauses. In addition to that, as mentioned above, the content of the texts was related to health and most probably there were many words which the participant – a pharmacist – had encountered previously. Thus, it might be that the

task was not demanding enough for differences to emerge between purposes and/or languages.

The suggestion for future studies is that they use more demanding and lengthier texts and also employ other reading comprehension measures than free recall and pause protocols. Another obvious suggestion is a replication of the present study with a larger group of learners. It might be that the results were due to the participant's idiosyncrasies. In addition to that, perhaps conducting another post-task interview with the participant (after data analyzes) could be a good way of gathering qualitative data which could contribute with explaining the results. Nevertheless, it is always interesting to observe the intricacies involved in conducting research on cognition.

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