Reading and writing in a foreign language: a comparison of conceptual and linguistic processes in Dutch and English

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6 General conclusions

This dissertation has addressed the question of whether conceptual processing is inhibited in reading and writing in English as a foreign language and whether, if inhibition occurs, it is associated with lack of fluent linguistic processing. Below a brief overview of the findings for reading and writing is given, including a discussion of similarities and differences between the findings for reading and writing and the theoretical implications of these similarities and differences. In the section following this overview, a number of methodological issues raised by this research that are of general relevance to process research will be put forward for consideration. Subsequently, the findings specific to the writer characteristics, L1 literacy proficiency and language background, will be discussed, and, in particular, the possible effects of bilingualism on third language reading and writing processes. Lastly, the possible pedagogical implications of the research presented in this dissertation will be considered.

Overview of findings

Reading processes

The findings provide little support for the inhibition hypothesis for FL reading. Although, through greater use of language strategies, the readers paid more attention to linguistic processes in FL than in L1, they did not pay significantly less attention to conceptual processes. Moreover, as predicted by the C-EM model of reading (Walcyzk, 2000), readers appeared to use language strategies to compensate for lack of fluent word processing in FL, and no relationship was found between speed of word processing and reading comprehension. The most frequently employed compensatory language strategies were paraphrases and FL-L1 translations. Compensatory strategies in FL were directed towards larger chunks of text than in L1, indicating that readers' lack of comprehension involved larger textual domains than in L1. Due to greater use of compensatory language strategies in FL, readers took longer to read the FL texts, but use of these strategies did not appear to cause their global text comprehension to suffer. Thus, all in all, there was more support for the notion of foreign language reading as a process involving compensation rather than inhibition. This compensation turned out to be compensation through the use of language strategies, as suggested by
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the C-EM, rather than compensation through greater use of global content strategies that circumvent the need to focus on linguistic processing, as had been suggested in the literature (e.g., Hacquebord, 1989). Thus, there is some indication that the C-EM, which was designed to model the interaction between processing skills, strategy use and reading comprehension in L1 reading, has applicability to FL reading. Future FL reading research is called for in order to further investigate the appropriateness of the C-EM as a model for FL reading processes.

Writing processes
The findings provide only partial support for the inhibition hypothesis for FL writing. As for reading, more attention was devoted to linguistic processes in FL. This extra attention to linguistic processes manifested itself at the three levels of the writing process depicted in the Chenoweth & Hayes’ (2001) model: at the Process level, in the number of within-clause language revisions carried out at the point of inscription; at the Resource level, in more localized (re)reading of the text; and at the Control level, in greater use of strategies to solve language problems. In contrast to reading, conceptual processes were inhibited in FL, and this inhibition manifested itself in both the writing process and the writing product: Less attention was devoted to conceptualizing than in L1, and the FL texts were rhetorically less well-developed than the L1 texts. Also in contrast to reading, extending total task time was not used as a means of avoiding inhibition of higher level processing in FL. The writers produced less rhetorical content in FL in a period very similar in length to total task time in L1. There was also some indication that inhibition manifested itself in writers’ reading processes, as greater attention to highly localized rereading of the writers’ own texts (i.e. reading the current clause) was accompanied by less attention to more global reading of the texts. However, inhibition of conceptual processing did not manifest itself in revision frequencies. Although writers made more revisions to linguistic aspects of the text, they made a similar number of conceptual revisions in both L1 and FL. Moreover, although they made more immediate revisions within a restricted textual domain in English, this did not appear to affect the number of revisions of more distant revisions made within a higher textual domain. Despite the evidence for both extra attention to linguistic processes and less attention to conceptual processes in FL writing, it was not possible to establish
clearly that this inhibition was related to actual lack of fluency of linguistic processes. As expected, the writers were less fluent in FL than in L1, in terms of both the size of the chunks of text produced without pausing and the number of words produced per minute. However, no significant relationship was found between level of fluency and the level of rhetorical development in the FL texts. Nor was there evidence of a relationship between level of fluency and text quality in either Dutch or English.

Thus, although, in support of capacity accounts of writing (e.g., Kellogg, 1996; McCutchen, 1996), inhibition of conceptual processing did indeed appear to occur in FL writing, the mechanisms underlying this inhibition remain unclear. Our findings show that extra attention to linguistic processes can manifest itself at different levels of the writing process, but which aspect(s) of extra attention to linguistic processes are associated with inhibition of conceptual processing requires further investigation.

_Reading and writing processes compared_

Reading and writing processes have been ascribed many commonalities and have even been, perhaps somewhat naively, described as being two sides to the same basic process (Squire, 1983 in Gordon & Braun, 1986). The simple representation of textual processing provided in the introduction of this dissertation depicted constructs common to reading and writing (see Chapter 1, Figure 1): namely, that both are guided by the operation of a monitor that guides processing; that both are subject to influence from elements of the task environment, such as the task instructions and the characteristics of the task itself; and that both are fed by various forms of input from the individual's knowledge base. The findings overviewed above indicate that the monitor plays a similar guiding role for reading and writing. Strategies, which are control processes involving conscious attention, are employed in both reading and writing in L1 and FL. Moreover, for both reading and writing, the amount of control processing – in the form of language strategies - was greater in FL than in L1. However, while reading and writing clearly draw on some of the same basic cognitive processes, the findings also suggest that in terms of the interaction between conceptual and linguistic processes involved in textual processing in a foreign language there are differences between the two skills.
In this dissertation, the inhibition hypothesis has received some support for FL writing, but not for FL reading. A possible explanation for the greater inhibition of conceptual processing in FL writing seems likely to be found in the cognitively demanding nature of writing (e.g., Torrance & Jeffery, 1999). Flower and Hayes (1980) coined the apt but by now rather jaded expression “juggling with constraints” to describe the complex process by which writers move back and forth between processes such as conceptualizing, formulating, revising and (re)reading. Thus, writing is cyclical and sequential in nature. In contrast, general reading for comprehension is more linear in nature, with front to back reading of the text being interspersed with strategies, be they conceptual, such as proposition integration, or linguistic, such as paraphrasing, which are triggered by specific aspects of the textual input. Related to this greater linearity, is the data-driven nature of the reading process, as opposed to the productive, self-generative nature of writing. While conceptual reading processes such as proposition integration and activating background knowledge may become automatized (Kintsch, 1998), higher level writing processes such as planning and idea generation are far less likely candidates for automatization (Abu-Rabia, 2003). Moreover, compared to reading, where skilled word processing may become so highly automatized that its functions largely without contextual constraints (Perfetti & McCutchen, 1987), formulation in writing, directed and constrained as it is by higher level goals relating to text purpose and audience, cannot become fully automatized (McCutchen, 1988). The relative lack of automatization of formulation processes means that formulation is more likely to interact with other writing processes than is the case for word processing in reading. Hence, all in all, the burden placed on working memory by the linguistic processes involved in writing is likely to be greater than the burden placed on working memory by the language processes involved in reading, in which processing is heavily dependent on written input. Consequently, in situations where linguistic processes demand more attention, as in textual processing in a foreign language, inhibition of conceptual processing is more likely to occur for writing than reading. Referring back to our representation of textual processing (see Chapter 1, Figure 1), it seems that inherent differences in the task environments of the two kinds of textual processing result in different patterns of interaction between conceptual and linguistic processes in FL. Differences in the task environment of reading and writing may also have consequences for the role that time plays in the interaction between conceptual
and linguistic processes. Linked to the data-driven nature of reading is the fact that the parameters of the reading task are defined externally by the task itself, as opposed to being defined internally by the writer. Readers - unless they become so demotivated that they give up the ghost entirely - are likely to persevere until the whole text has been read. This means that in situations where compensatory language strategies need to be implemented more frequently, as in FL reading, total task time will be extended (Walczyk, 2000). In situations in which no strict time constraints are given, the same ultimate level of comprehension may be achieved. In this dissertation, task times were significantly longer in FL than in L1 for reading, but not for writing. Although there was also more attention to language strategies, this did not result in longer task times for writing. Instead, the writers produced shorter texts in a similar period of time. It is unclear whether the lack of extension of task time in FL was related to motivational factors, such as eagerness to be rid of the task as quickly as possible, to factors connected with cognitive overload, such as being overwhelmed by the complexity of the task, or to language proficiency-related factors. It could have been that the writers simply did not have the necessary language at their disposal to translate certain mental propositions into linguistic formulations in FL.

Yet another spin off from differences in the task environments of reading and writing relates to the textual domains on which FL readers and writers focus. While in FL reading language strategies are applied more frequently to a larger textual domain (i.e., clause level and above) than in L1, in FL writing the textual domain on which attention is focussed is narrower in FL. This is not as mysterious as it may sound, as it is simply a consequence of the rather unremarkable fact that in FL reading large tracts of text are sometimes not comprehended, leading the reader to translate or paraphrase the entire tract of poorly comprehended text. In contrast, in FL writing, the necessity of generating one’s own sentences results in more attention being devoted to the retrieval of words and syntactic structures than in L1. Consequently, FL writers revise individual words more and also spend more time rereading the clause currently being produced.

This finding is noteworthy in the light of claims made for both FL reading and writing that the focus of attention is more highly localized than in L1. The source of the divergence between our findings for reading and these claims can be pinpointed in the terminological confusion that exists in the reading literature,
where the distinctions between local and global processing, linguistic and conceptual processing, and top-down and bottom-up processing are sometimes confused. The reader is referred back to Chapter 2 for a discussion of these distinctions. In our research, ‘local’ and ‘global’ domains are defined in terms of the size of the chunk of text to which readers and writers apply their problem-solving behaviours, rather than in terms of the kind of textual (or extra-textual) information that readers – or writers - use to find solutions to comprehension problems. We would argue that there are three separate dimensions: orientation of processing (i.e., whether processing is linguistic or conceptual) and domain of processing (i.e., the textual domain of the linguistic element(s) processed) and source of knowledge (i.e., the kind of textual or extra-textual information that is used to solve comprehension problems). The value of the multi-dimensional approach used in this dissertation is that it teases out frequently conflated distinctions concerning the nature of textual processing.

Originally, considering the knowledge base is an important component of textual processing (see Chapter 1, Figure 1), it was our intention to include source of knowledge as a separate processing dimension for reading and writing. However, as in practice the reading and writing protocols provided very little evidence concerning knowledge source, this attempt had to be abandoned. Thus, the challenge remains for other researchers to extend our multi-dimensional approach by tackling the rather difficult task of identifying and classifying the knowledge sources used in strategic textual processing in FL reading and writing.

Methodological Issues

The findings for reading and writing are not on all counts directly comparable, due to differences in the measures used and the testing of these measures. These differences relate to differences in the specific predictions arising from the theoretical frameworks used for reading and writing, as well as to insights gained by us during the research process. The differences in the design of the reading and writing studies raise a number of methodological issues worthy of discussion.

The first issue concerns the relative merits of within-language versus between-language testing for comparing processes in L1 and FL. For both reading and writing, between-language tests have been used to compare strategy use in L1 and FL. However, for reading, the relationship between fluency, strategy use and product quality was tested separately for Dutch and English. Within-language
testing was necessary in order to test specific predictions made by the C-EM model concerning the relationships between these three variables (See Chapter 3). The C-EM made predictions for L1 reading, and the objective of our study was to examine whether these predictions also held for FL reading. Consequently, neither speed of word processing nor reading comprehension was compared across languages. Moreover, even if this had been our objective, it is not feasible to compare comprehension scores achieved on texts read in different languages, particularly in a case such as the present one where there is a large gap in the reading proficiencies in the two languages and where the texts needed to be at an appropriate level of difficulty for the students. The appropriate level of difficulty for the texts in the two languages was determined in a pilot study.

In contrast, for writing, the relationships between fluency and component processes and between fluency and rhetorical content were tested through between-language comparisons and, subsequently, through correlational analyses involving residual scores for the differences between variables in the two languages. The theoretical framework used, provided by Chenoweth and Hayes (2001), predicted that fluency would be less-developed in FL than in L1, and that this less developed fluency would be associated with inhibition of conceptual processing in FL compared to L1 – hence, the necessity of making between-language comparisons. As was the case for reading comprehension, lack of comparability across languages meant that the relationship between fluency and product quality needed to be tested separately for Dutch and English.

There is a case for arguing that the truest test of whether inhibition of conceptual processing has occurred in FL is one is which between-language contrasts are tested, as one wishes to compare how individuals process text in one language compared with how they process text in another language, and how this is connected to differences in product quality in the two languages. Thus, one might wish to claim that despite the within-language tests needed to test the C-EM predictions for reading, it would have been desirable to include a measure of text comprehension that could have been tested across languages. Originally, oral summaries were intended for use as a measure of the rhetorical content of readers’ mental representation of the texts, comparable to the measure of rhetorical text content provided for writing. Unfortunately, due to lack of reliability, the oral summary measure could not be included. Use of these
summaries could have provided a cross-linguistic comparison of higher level processing in Dutch and English for reading.

A second relevant methodological issue is the manner in which attention devoted to textual processing is operationalized. In the reading protocol study of Chapter 2, processing attention was operationalized in terms of frequency of processes, whereas in the writing protocol of Chapter 5 it was operationalized in terms of the duration of processes. On the one hand, a drawback of frequency-based operationalizations is that they are influenced by the distribution of processing episodes (i.e., a pattern of short, frequently recurring processing episodes will result in higher process frequencies than a pattern of longer, less frequently recurring episodes) (see Chapter 5). On the other hand, a drawback of duration-based operationalizations is that there is no necessary relationship between verbalization time and real processing time (i.e., the amount of time taken to express a cognition in words cannot necessarily be equated with the amount of time that the cognition itself takes) (see Chapter 2). For example, lack of understanding could be expressed by a single word, such as "What?", or could be expressed by a much longer utterance, such as "I just don't understand this at all". Yet, one would not necessarily wish to claim that the reader or writer had spent less time monitoring understanding in the former case than in the latter case. Intuitively, the data-driven nature of reading would seem to render it more suitable for frequency-based operationalizations of processing attention, as reading strategies frequently occur in isolation rather than in ongoing, recurring patterns. In contrast, the cyclical nature of writing would seem to make it more suitable for duration-based operationalizations. It was this train of thought that guided the design of the studies in protocol studies in Chapters 2 and 5.

There is a need for more research that compares attention to particular textual processes in L1 and FL in terms of multiple operationalizations. For reading, future studies could examine whether including duration of processing provides valuable supplementary information. In this dissertation, in addition to duration of writing processes, average episode length of writing processes (i.e., the duration of a particular process divided by the frequency of that process) was considered. This measure was not found to vary significantly between L1 and FL (See Chapter 5, footnote 6). Future writing research could consider whether the sequential order of processes within writers' processing blocks differs between L1 and FL. Processing blocks could be delineated in terms of features such as
rhetorical boundaries. The first steps towards developing such an approach are being taken by van Weijen (2004), who is considering whether individual writers’ recurring combinations of processes within processing blocks vary between L1 and FL. Future writing research could also make more integrated use of indirect and direct process measures. In Chapter 4, attention to different kinds of writing revision processes was compared using an indirect process measure, frequency of on-line revisions. In contrast, in Chapter 5, think aloud protocols provided a more direct measure of processing. The fact that inhibition of conceptual processing was found in the latter study but not in the former indicates that direct and indirect process measures may illuminate textual processing in different ways.

Regardless of the particular operationalization of processing attention that is chosen, one could argue that inhibition of higher level processing in FL can only truly be demonstrated to have occurred in cases where less higher level processing has occurred in absolute terms. Smaller proportional frequencies or durations in FL could simply be attributable to a larger proportional frequencies or durations of other kinds of processes. Thus, in order to aid interpretation, studies using proportions or percentages should also report and describe absolute frequencies (see Chapter 2 and Chapter 5).

A third and final relevant methodological issue concerns the relative merits of task-specific and non-task specific measures of fluency. For reading, speed of word processing was measured using a general sample of familiar words in a context isolated from the reading tasks that were used to measure strategy use and reading comprehension. This was because our theoretical framework (i.e., the C-EM) made it desirable to create the optimal conditions in which to measure speed of processing isolated from linguistic knowledge (see Discussion in Chapter 3). In contrast, for writing, fluency was measured within the specific context of the writing tasks, as examining the size of the units of production required the on-line measurement of fluency of formulation (i.e., chunk size) in text production tasks. Task-specific fluency measures, as used for reading, which select items from a general sample of words that do not necessarily occur, are able to provide a measure of general processing skills, whereas tests that use items taken from specific reading or writing tasks can only make more limited claims concerning processing as it relates to specific tasks. Moreover, using items selected from a general sample allows the researcher to more carefully control the characteristics of the items included in the measure (i.e., level of difficulty and length). On the
other side of the coin, use of fluency measures based on a general sample leaves the researcher open to the criticism that little can be said concerning actual processing problems encountered in real time when processing a specific text. If, for this reason, the researcher opts for items specific to certain reading or writing tasks, these can be presented in either an isolated or an in situ context. An advantage of using an isolated context is that a purer measure of linguistic processing is provided without “contamination” from higher level textual concerns. However, at the same time, a disadvantage is that the fluency measure remains divorced from the realities of on-line textual processing. In the case of writing, measures of task-specific fluency will generally need to be in situ, as a priori knowledge of the linguistic formulations that writers will use is seldom possible without using tasks that are so constraining that they provide little opportunity for conceptual processes, such as idea generation and text structuring, to occur naturally (e.g., narrative tasks using cartoon pictures in a fixed order). However, despite the apparent advantages of in situ fluency measures for writing, it is necessary to be aware that such measures increase the likelihood of dependency between the fluency measure and any other in situ measures used (e.g., measures of strategic processing).

Ultimately, the most crucial point is that the choice of fluency measure should adequately reflect the theoretical conception of fluency under investigation. In this dissertation, fluency has been measured at a ‘lower’ processing level for reading than for writing. As mentioned, this difference in measurement levels for the two forms of textual processing was a by-product of the theoretical frameworks used.

**Writer characteristics and FL reading and writing processes**

This dissertation has also considered the influence of writer characteristics on reading and writing processes. The sample included writers who vary in terms of both Dutch literacy proficiency (higher versus lower proficiency) and language background (monolinguals of Dutch background versus bilinguals of Turkish or Moroccan background). What is striking about the findings concerning these writer characteristics is the greater influence on textual processing exerted by language background than by Dutch literacy proficiency. The only significant effect for Dutch literacy proficiency was that lower proficiency readers recognized lack of understanding more frequently in L1 than did higher
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proficiency readers. As no significant effects were found for Dutch literacy proficiency and textual processing in FL, no support can be said to have been found for the hypothesis that higher proficiency readers and writers have more effective strategies in L1 that they are able to transfer to FL, leading them to be less inhibited in their conceptual processing. In contrast, for both skills in both languages, the bilinguals were less fluent than the monolinguals. For reading, the bilinguals compensated for lack of fluency by making greater use of language strategies than the monolinguals. For writing, the bilinguals spent less time conceptualizing in Dutch and English than monolinguals, indicating that their conceptual writing processes were inhibited to some degree in both languages. There was also a tendency for the bilinguals to have poorer reading and writing products in both languages, and text length for bilinguals was shorter in both languages.

The differences in the findings for L1 literacy proficiency and language background may well be related to the nature of the sample. Possible sample-related limitations have already been discussed in the Discussion sections of the various chapters. Firstly, an issue of obvious relevance is that the sizes of the subgroups for the different kinds of readers/writers are small. Hence, differences found for the two characteristics must be interpreted with some caution. Secondly, as has repeatedly been mentioned in the chapters, lack of effects for Dutch literacy proficiency could be related to the fact that the sample of students has been selected from the higher tracks of Dutch secondary education, meaning that the range of writing proficiencies is smaller than in the school population as a whole. Consequently, it would be foolhardy to conclude on the basis of our findings that there is generally a stronger relationship between language background and textual processing than between L1 literacy proficiency and textual processing.

Nevertheless, the consistency of our findings for the bilinguals across reading and writing, and their compatibility with our previous research involving a larger sample from a similar population of bilingual students (See Schoonen et al., 2002; van Gelderen et al., 2003) make it worthwhile to consider these findings in the light of recent research on the effects of bilingualism on third language learning.
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Bilingualism and third language learning

In recent decades, bilingualism has been attributed with promoting cognitive advantages, such as greater ability to perform language tasks that require control of selective attention (Bialystok, 1991, 2001) and a more varied repertoire of communication strategies (Thomas, 1992). As previously mentioned, these advantages are thought to give bilinguals the edge on monolinguals in third language learning situations, and, indeed, findings from a number of studies have pointed in this direction (Cenoz, 2003).

The findings of this dissertation do not provide us with grounds for concluding that bilingualism provides students of Turkish or Moroccan background in the Netherlands with processing benefits when reading and writing in a third language, English. Although the bilinguals certainly displayed a different pattern of reading and writing strategy use than the monolinguals, the relative lack of fluency and poorer product quality of these students would appear to indicate that this pattern of strategy use is a specific response to processing deficiencies in Dutch and English, rather than a general cognitive predilection for a particular pattern of processing arising from bilingualism. There were also no indications that the repertoire of compensatory language strategies used by the bilingual students was broader than that of the monolingual students.

While we are certainly not justified in claiming processing benefits, neither would we be justified in going to the other extreme and proclaiming that the bilingualism of these students has led to a processing disadvantage in the third language. The pattern displayed by the bilinguals in Dutch and English resembles the pattern observed for the whole sample in FL, with respect to the use of language strategies to compensate for deficits in language proficiency. As such, use of compensatory strategies can be viewed as an adaptive solution to processing problems. Care must be taken not to stigmatize bilinguals, as sometimes happened in the past, as being the benighted victims of their own bilingualism. Nonetheless, our results do beg the question of why the language proficiency of the bilinguals students might be poorer than the monolinguals – not only in Dutch, but also in English.

The context in which bilingualism is located is known to be of importance for the outcomes of research (Sanz, 2003). Studies carried out in additive contexts, that is, contexts in which both of the bilingual’s languages are highly valued and/or in which bilinguals do not have low socio-economic status, have typically found that
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Bilinguals are more proficient than monolinguals in a third language. In contrast, studies of third language proficiency carried out in subtractive contexts, that is, contexts in which the minority language has low prestige and/or where bilinguals are socio-economically disadvantaged, have typically found no effects, or even negative effects for bilingualism on third language proficiency. It seems plausible that the pattern of results found in this dissertation is related to the seemingly subtractive context in which the students of Turkish and Moroccan background find themselves.

Students from minority backgrounds in the Netherlands are frequently found to have poorer general school performance than Dutch background students (Leseman & van den Boom, 1999; van der Veen, 2001). In terms of language proficiency, even relatively successful students from ethnic minorities (i.e., from the higher educational tracks), as in our sample, have been found to achieve slightly lower grades for both Dutch and English in their final exams than Dutch background students (CBS, 2000). Van der Veen (2001) found that the level of academic success of Turkish and Moroccan students was linked to factors such as socio-economic status, parents' education level, the intellectual climate in the home, and level of attachment to the migrant culture.

Evidence from studies conducted with migrant children in European countries suggests that if socio-economic factors are controlled for, bilingual migrant children are as proficient in a third language as monolingual children. Sanders and Meijers (1995) found that, when factors such as socio-economic status and intelligence were controlled for, Turkish-Dutch and Moroccan-Dutch bilingual elementary school students did not differ significantly from Dutch monolinguals on a range of English language proficiency measures, including grammatical judgement, spontaneous oral language use and word comprehension.

The examination of socio-economic factors has fallen outside the scope of this dissertation, our objective regarding language background being to describe differences in monolingual and bilingual textual processing, rather than to account for them in terms of contextual factors. Nonetheless, future research could sensibly take greater account of contextual factors, though hopefully without losing sight of the fact that, even if any processing differences found prove to be related to socio-economic factors, and even if they can be made to “disappear” by correcting for these factors, this does not negate their existence.
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Nor does it negate the value of cognitively-oriented research aimed at understanding the cognitive mechanisms underlying such processing differences.

Implications for language instruction

As this dissertation does not involve instructional research, it would be reckless to attempt to draw firm pedagogical conclusions. However, we feel that our detailed examination of processes in FL reading and writing does at least entitle us to point out a relevant pedagogical paradox and to comment - with due caution - on the possible implications of our findings for this paradox. This paradox is that, on the one hand, the attention that FL readers and writers devote to solving language problems is often portrayed as a regrettable language-boundedness that results in - to return to the metaphor given in the introduction - not being able to see the forest for the trees. Yet, on the other hand, in other studies attention to solving language problems is encouraged by advocating the teaching of language strategies to learners (e.g., Kern, 1989; Roskams, 1998), such as paraphrasing, guessing meaning from context and finding synonyms. So, are the language strategies used in FL reading and writing ‘naughty’ strategies that readers and writers should be discouraged from using, or are they ‘smart’ strategies that allow readers and writers to minimize the detrimental effects on their textual processing of gaps in their linguistic proficiency?

The results of this dissertation suggest that language strategies can play a useful compensatory role in FL reading and, perhaps to a less extent, in FL writing. Language strategies helped readers to overcome word processing and/or knowledge problems in FL, and did not seem to detract from global comprehension of the text. Although the range of language strategies used was very narrow, being largely limited to paraphrasing and translating parts of the text, there is little reason to think that other commonly advocated language strategies for reading, such as guessing meaning from context and using morphological and syntactic cues, do not play a similar role. Hence, it would seem to be desirable to offer FL readers a good repertoire of strategies to help them solve language problems.

For FL writing, the role of language strategies is somewhat less clear-cut. Even though the greater length of time spent deliberating language problems in FL may have been one of the factors linked to less conceptualizing taking place than in L1, revisions made to the surface structure of the text frequently resulted in a
successful outcome, suggesting the successful operation of revision strategies. Moreover, use of surface revision strategies did not appear to negatively affect the writers' ability to make global content changes in FL. Formulation processes in writing are dependent on linguistic knowledge in a way that reading processes are not. Whereas a reader may utilize contextual cues to infer the meaning of a hitherto entirely unfamiliar word, a writer simply cannot retrieve a word that is not contained in his or her mental lexicon, and cannot use contextual cues to aid the retrieval process. Although we do not know whether and to what extent use of specific kinds of writing strategies may have inhibited conceptual processes in FL, the best candidates for writing strategy instruction are likely to be strategies that lessen dependency on linguistic knowledge and foster flexible processing. Strategies that suggest themselves are avoidance strategies, such as rewording in order to avoid the need to use an unknown word, and leaving a gap in the text for an unknown word so that the gap can be filled in later. Encouraging learners to write less linearly is one way of minimizing potential disruption to formulation processes. Learners need to be made aware that not every lexical or grammatical problem requires an immediate solution, and that they should avoid interrupting the flow of their writing by becoming fixated on specific problems. Tackling many language problems may be postponed until later editing phases in which the writer concentrates primarily on the surface features of the text, thus freeing attentional resources in earlier phases for conceptual processes.

Clearly, for both reading and writing, the development of strategic skills for solving language problems can never be a substitute for the development of the rich linguistic knowledge base and the fluent use of knowledge from this base that is needed to attain a high level of language proficiency. Yet, particularly in situations where readers and writers cannot be expected to acquire a very high level of language proficiency within a short space of time – as is the case with high school age EFL learners, who learn the language gradually over a period of years – teaching language strategies they may serve as a valuable interim measure for promoting successful text comprehension and production.

There being more than one way to skin a cat, an alternative approach to helping readers and writers overcome language problems is to directly train linguistic processing skills, thus obviating the need for strategy training. In recent years, the virtues of training speed of word and sentence processing for reading and writing have been extolled. The small number of instructional studies carried out thus far
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have shown that training can promote fluent use of the targeted lexical items, but have not produced convincing evidence that such training can lead to overall improvements in either text comprehension or text production (e.g., Akamatsu, 2001, Fukkink, Hulstijn, & Simis, 2005; Snellings, 2004; Tan, Moore, Dixon and Nicholson, 1994). Of these studies, the two instructional studies carried out as part of project NELSON (i.e., Fukkink, Hulstijn, & Simis, 2005; Snellings, van Gelderen & de Glopper, 2004) provide the most systematic investigation of the possible link between speed of linguistic processing and product quality. In two classroom-based FL reading experiments, Fukkink et al. (2005) conducted computer-based training in which grade 8 students completed exercises in FL (English) involving making lexical form-meaning connections under increasing time pressure. It was found that training readers to process words more rapidly could improve both speed and accuracy of lexical access for the trained words – although it should be mentioned that speed did not increase consistently across conditions in one of the two experiments conducted. However, gains in speed of lexical access were not found to transfer to either reading speed or global text comprehension. In a classroom-based experiment for writing, Snellings et al. (2004) conducted computer-based training in which grade 9 students completed exercises in FL (English) in which rapid production of words and collocations was stimulated. Training resulted in more rapid retrieval of the trained words, and also resulted in greater use of these words in narrative texts based on cartoon tasks that elicited the target vocabulary. In one of two counterbalanced conditions, training was also associated with the expression of a greater number of content elements. However, in neither condition was more rapid retrieval of trained words associated with higher global text quality scores. The results of these studies would seem to underline the point made on repeated occasions in this dissertation that fluent word processing skills are but one aspect of reading and writing proficiency.

Regardless of possible effects on conceptual processing and global proficiency, there is undoubtedly a place in the language classroom for fluency-oriented instruction. Even if global product quality remains unchanged, greater fluency is likely to have time-saving benefits for readers and writers, and may also have affective benefits in terms of the degree of comfort – or discomfort – experienced when reading and writing in a foreign language. There is, thus, a need for more studies into the effects of fluency-oriented instruction to increase efficiency of use.
General conclusions

of both (partially) familiar lexical items and grammatical structures, and perhaps even more importantly, to promote the fluent acquisition of new items and structures. As illustrated by the Fukkink et al. and Snellings et al. studies, computer technology provides opportunities for learners to practice language in contexts that allows them to simultaneously develop accuracy and fluency. In a recent study, de Jong (2005) used computer-based instruction, in which both accuracy and fluency of oral production was registered, to stimulate the acquisition of Spanish gender (i.e., gender agreement of nouns and adjectives) by adult Dutch beginners. There is also a need to incorporate fluency-oriented instruction into current language teaching methodologies. Gatbonton and Segalowitz (2005) suggest a methodology, which they refer to as ACCESS, which strives to incorporate a focus on fluency into the principles of communicative language teaching, which has traditionally frequently spurned fluency-based exercises as being uncommunicative and repetitive.

Fashions in education come and go – and probably come again – and the current fashion is one in which the development of skills is the primary motif. Foreign language instruction, not being impervious to the dictates of fashion, follows this trend, with process-oriented instruction – be it strategy instruction or training to increase fluency - being one of the current buzz words. However, though it may sound trivial, we need to guard against the danger of overemphasizing skills at the expense of knowledge, as the former cannot exist without the latter. What is needed are integrated approaches in which an appropriate balance is struck between the development of knowledge and skills.

References


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