

○ ADVANCED LEARNERS' L1 (SWEDISH) VERSUS L2 (ENGLISH) INFERENCING

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Research shows that the most important skill to possess when learning a previously unknown word is to be able to interpret its meaning based on the context in which it is found (Nation, 2001). This is especially true for L1 learners, but regrettably, research shows, not as true for students learning a second language (Nation, 2001). The aim of the present study is therefore to investigate what differences, if any, there are between advanced learners' inferencing skills in their first versus their second language. This is done by subjecting 15 first-term university students to two parallel inferencing tests in their L1 (Swedish) and L2 (English) respectively. Although the number of inferences and the success rate vary from student to student, the results of the present study show that the learners made extensive use of contextual clues, in their L1 as well as in their L2. Also, the success rate was comparatively high, indicating the great potential learners possess for inferencing. However, in order to improve the students' results, it may be that the teaching syllabus needs to make room for instruction on how to make use of contextual clues so that the potential learners clearly possess is nurtured further.

KEY WORDS: written context, lexical inferencing, L1 versus L2, advanced learners

INTRODUCTION

In the research literature, it seems widely agreed that vocabulary in a second language should be learnt/taught in a contextualised form. Studies have shown that to be able to infer meanings of words based on their contextual clues (which very often occurs in combination with the help of one's general linguistic knowledge and general knowledge of the world [Haastrup, 1991]) is one of the three most important skills to possess for a learner aiming to enlarge his/her L2 vocabulary, explicit teaching and knowledge of affixation rules being the other two (Nation, 2001). This is especially the case with native speakers who have already developed a comparatively rich vocabulary (Schmitt & McCarthy, 1997). Regrettably, Nation (2001) states, this does not seem to be equally true for second language learners since the conditions required for successful L2 inferencing are not always present.

One such important condition is that the density of unknown words may not be too high (Horst, Cobb, & Meara, 1998; Sternberg, 1987; Swanborn & de Glopper, 1999). Research has shown that in order for an L2 learner to be able to guess the meaning of an unknown word, about 95% of the text needs to be understood (e.g. Bensoussan & Laufer, 1984; Laufer, 1988; Laufer & Sim, 1985; Liu & Nation, 1985). This means that there is around one unfamiliar word in every 20 running words. Some researchers (e.g. Nation, 2001) even claim that 98% coverage is necessary for L2 learners to be successful inferencers. This corresponds to there being one unknown word in 50 running words.

In addition to the density of unknown words, there are a number of other so called *mediating variables* (Jenkins & Dixon, 1983) that can strengthen or weaken a learner's chances of guessing the meaning of a contextualised word (Nation, 2001; Webb, 2008), such as the degree of similarity between the first language (L1) and second language (L2) (which will be explored further in the following section) (Palmberg, 1988), the degree of importance of the unfamiliar word for the understanding of the text as a whole (Kim, 2003; Nation, 2001; Sternberg, 1987), the number of occurrences of the unfamiliar word (Horst, Cobb & Meara, 1998; Stahl & Fairbanks, 1986; Sternberg, 1987) and the proximity of recurrence (Nation, 2001), if the unfamiliar word occurs in many different contexts (Nation, 2001; Sternberg, 1987), if the unfamiliar word occurs in texts whose topics are familiar to the learner (Nation, 2001) and if the concept expressed by the unfamiliar word is known to the learner (Daneman & Green, 1986; Nagy, Anderson, & Herman, 1987; Shefelbine, 1990). Typographical aids such as the use of italics, quotation marks, bolding, figures and diagrams have also been shown to help the inferencing process (Artley, 1943). The most useful information though appears to come from clues in the immediate context (Chihara, Oller, Weaver, & Chavez-Oller, 1977; Leys, Fielding, Herman, & Pearson, 1983; Paribakht & Tréville, 2007; Paribakht & Wesche, 2006; Rye, 1985). Not only is the presence of clues important for successful inferencing (Nation, 2001), but also the number of relevant clues (Nation, 2001) and their explicitness (Carnine, Kameenui, & Coyle, 1984). If, in addition, the ideas in the clues are familiar to the learner (Jenkins & Dixon, 1983) and concrete rather than abstract (Nation, 2001), the inferencing process is even more likely to be successful. Nation (2001) concludes adamantly that:

in any list of vocabulary learning strategies, guessing from context would have to come at the top of the list. Although it has the disadvantages of being a form of incidental learning (and therefore being less certain) and of not always being successful (because of lack of clues), it is still the most important way that language users can increase their vocabulary. (p. 262)

PREVIOUS RESEARCH ON L1 VERSUS L2 INFERENCING

First, it needs to be pointed out that even though there are commonalities across languages as to how learners approach unknown words in context (Wesche & Paribakht, 2010), research indicates that the typological distance between a student's L1 and L2 may determine how a learner is able to approach an L2 inferencing situation and may consequently be an important factor in whether the learner is successful or not. This is one of the conclusions drawn in a large-scale study by Wesche and Paribakht (2010). Focusing, among other things, on the inferencing success of native speakers of French and Persian learning English as a second language, the researchers were able to show that the former having a first language more closely related to English than the latter, achieved considerably better inferencing scores. The impact of learners' L1 has also been reported in several other studies (e.g. Koda, 2005; Odlin, 2003; Paribakht, 2005; Ringbom, 1987).

Thus one highly relevant investigation is Albrechtsen, Haastrup, and Henriksen (2008), whose informants' L1 was Danish, a language closely related to Swedish. In addition to making a comparison between learners' L1 and L2 (English) inferencing skills, the study also focuses on how these inferencing skills relate to the learners' mastery of L1 and L2 vocabulary size, depth (in the form of network building) and reading skills. The students tested were from three different educational levels: 30 students considered to be beginners of English (having studied English for about three years only), 30 students categorised as intermediate learners (having studied English for about six years) and 30 students studying English as a single-subject course at university level considered to form the most advanced group of informants (having studied English for at least nine years and hence comparable to the learners in the present study). The main difference between these three student groups, according to the researchers, is that while the members of the youngest group were still in the process of acquiring L1 literacy skills, the students making up the intermediate group had had some time to refine these skills and the university undergraduates, having entered the world of academia, had most likely already acquired very elaborate L1 literacy skills.

As mentioned above, two aspects of declarative knowledge ('knowing that') – vocabulary size and network organisation – and two aspects of procedural knowledge ('knowing how') – inferencing strategies and writing – were in focus in the study. The reason for including tests on both declarative and procedural knowledge is, as explained by Albrechtsen et al. (2008), that these types of knowledge are interconnected. For example, research has shown that students' vocabulary size appears to stand in direct relation to their ability to draw conclusions about the meanings of unknown words in context (see also Nation, 2001). This means, Albrechtsen et al. (2008, p. 24) claim, that 'deficiencies in declarative knowledge in the foreign language often prevent learners from transferring their procedural potentials to demanding L2 communicative situations', such as lexical inferencing. Put differently, 'learners below a certain threshold of L2 vocabulary knowledge are unable to transfer the

higher order skills they may have developed in their L1 to L2 tasks' (Albrechtsen et al., 2008, p. 24). Furthermore, 'not only do language learners need a vocabulary of a certain size, but also the organization of their lexicon must be of a certain quality to ensure efficient language use' (Albrechtsen et al., 2008, p. 24). This is confirmed by Nassaji (2004), for instance, who could see a clear correlation between vocabulary depth and inferencing success among the L2 learners included in his study.

In the inferencing part of Albrechtsen et al.'s (2008) investigation, three main aims, mimicking the major aims of the entire study, were put forth. First, the researchers wanted to find out if different inferencing strategies were used in the students' L1 as compared to their L2 and if there were noticeable differences between the three educational levels. The researchers also wanted to investigate if the level of inferencing success differed in the two languages and, again, if educational level played a role. Lastly, Albrechtsen et al. (2008) wanted to find out if a correlation existed between lexical inferencing success, L2 reading skills and quantitative and qualitative vocabulary knowledge.

The inferencing test itself consisted of a reading comprehension task. This task was based on short factual texts with similar topics in the two languages. In both the students' L1 and L2, 30 items were tested. These were of three kinds: 1) there were no linguistic clues as to their meaning 2) there were potential morphological clues in the form of affixes and 3) there was at least one central clue in the form of a word or a word stem and a prefix and/or a suffix.

The data collection consisted of three parts. First there was a pre-test to determine which of the test items were already known to the informants. The words were here presented to the students in a decontextualised form. Next came the inferencing task itself on which the students were asked to verbalise their thoughts while inferencing. Lastly, the informants were faced with a retrospective task in which they were asked to state clearly what had helped them arrive at their answer.

The clues drawn on by the students when inferencing were divided into three categories: contextual, intralingual and interlingual clues. Contextual clues refer to clues that come from the text surrounding the test item (either from the narrow or broad context) or from the student's knowledge of the world. These two types of clues often work together. Intralingual clues are clues that come from the test item itself and interlingual clues come from the student's knowledge of other languages. These clues can be put along a continuum from a more top-level processing approach (advanced processing) to a more bottom-level processing approach as seen in Figure 1 below (Albrechtsen et al., 2008, p. 80).

TOP level	Context (the text, and knowledge of the world)
	Semantics (meaning considerations)
	Lexis (word form)
	Morphology
BOTTOM level	Orthography/Phonology

Figure 1. A hierarchy of cue levels (Albrechtsen, Haastrup & Henriksen 2008:80).

The results of the study were then analysed in terms of how advanced the learners' processing was, if adaptation to word type (the three mentioned above) occurred and the degree of inferencing success. Advanced processing, i.e. the use of top-ruled processing with integration of linguistic clues, was far more prominent in the subjects' L1 than in their L2 and this held true for all three student groups, with a steady increase according to educational level. The same results could also be seen in the way the informants' were able to adapt their inferencing strategies to the situation, i.e. in their L1 the students did not only display a wider range of processing types, but also applied the strategies in the appropriate places to a greater extent than in their L2. Again there was also an increase according to educational level. As for inferencing success, once again the same result pattern could be discerned, i.e. there was a higher success rate in the mother tongue than in the second language and a clear increase from one educational level to the next. For the university students, who are of special interest to the present investigation, there was a success rate of 48% in their L2 as compared to 58% in their L1. It thus seems Albrechtsen et al.'s (2008) claim that processing skills acquired and made use of in a native language are not completely transferred into a learner's L2, not even at an advanced level as university.

Based on their results, Albrechtsen et al. (2008) were also able to give clear descriptions of the typical mature, intermediate and immature inferencer respectively. The mature inferencer, i.e. the successful inferencer, appears to display frequent use of advanced processing, very little use of bottom-ruled processing and to adapt easily to the inferencing situation. The intermediate inferencer also seems to resort to advanced processing, but only about half as much as the mature inferencer. Moreover, although the intermediate inferencer often appears to activate linguistic clues, these clues are not really integrated into the processing. The ability to adapt to the inferencing situation is also lower for the intermediate inferencer than for the more mature inferencer. The immature inferencer, finally, generally appears to display more bottom-ruled processing than the intermediate inferencer, i.e. low-

achievers in contrast to high-achievers seem to focus on formal features. An immature inferencer in Albrechtsen et al.'s (2008) study was also typically even less able to adapt to the inferencing situation than an intermediate inferencer. It thus seems that learners generally move from a bottom-ruled approach to a more top-ruled approach.

Finally, as predicted, Albrechtsen et al. (2008) could show that the success or failure with which a learner was able to infer the meaning of a word relies heavily on the learner's L2 vocabulary size (see also Shefelbine, 1990). As for vocabulary depth, a clear correlation could only be shown for the lowest educational group, but this occurred in these informants' L1 as well as in their L2. Other studies have, however, been able to demonstrate such correlations (e.g. Laufer, 1997; Paribakht, 2005). Also, just like Albrechtsen et al. (2008) in connection with the most advanced learners, other studies have shown correlations between learners' reading skills and their ability to infer meanings of contextualised words (e.g. Herman, Anderson, Pearson, & Nagy, 1987).

THE PRESENT STUDY

In the present study, 15 first-term university students having studied English for at least ten years were subjected to two parallel inferencing tests in order to investigate what differences, if any, there are between advanced learners' inferencing skills in their L1 (Swedish) versus their L2 (English). There were 12 female and three male students (range: 19–49; mean: 23.47; SD: 7.68).

The tests themselves were divided into two main parts. In one part of the English test, consisting of four texts taken from *Newsweek* (Texts B and F) and *Time Magazine* (Texts A and E), the students were given the Swedish translations of the English words/expressions sought and asked to find these English items in the text offered. These Swedish translations were given in a chronological order so that if the first and third words/expressions sought in one of the texts were found, the student would know that the second item could be found between these two. This is exemplified with an excerpt from Text A in which the students were requested to find the English words for *skillnaden* (=the disparity) (test item A8), *slingrade sig igenom* (=wiggled through) (test item A9) and *kvinnohatare* (=misogynists) (test item A10).

...While educators debate whether there is a “boy crisis” that warrants a wholesale change in how to teach, colleges are quietly stripping the pastels from brochures and launching Xbox tournaments to try to close the gap in the quality and quantity of boys applying. “It’s a gross generalization that slacker boys get in over high-performing girls,” says Jennifer Delahunty, dean of admissions at Kenyon College, “but developmentally, girls bring more to the table than boys, and the disparity has gotten greater in recent years.”

Of course, admitting this is taboo, as Delahunty learned two years ago. She was in marathon committee meetings, stacking glorious girls on the waiting list while less accomplished boys wiggled through, when she got an e-mail informing her that her own daughter had been wait-listed. The experience inspired her to write a confessional Op-Ed, "To All the Girls I've Rejected," for the New York Times, responses to which lit up her inbox. "It pissed off the feminists and the misogynists. I got both sides of the spectrum," she told me. "The misogynists said women already have too many advantages. And the feminists said, How dare you not treat women like men." But what most amazed her was the reaction of young women: by and large, they assumed this is just how things work. "Why aren't they marching in the streets? That's the part that slays me," Delahunty says. "It isn't fair, and young women should be saying something about it not being fair." ...

The Swedish texts A, B, E and F were chosen from Cederholm and Danell (2007) which includes a collection of extracts from Swedish magazines, newspapers, novels, short stories etc. in which the main purpose is to learn difficult words. Here definitions of the Swedish words sought were offered.

Furthermore, the English texts for this part were chosen first. These are texts that the present author has worked with in many student groups before in courses focusing on reading proficiency and vocabulary. The items finally selected for testing were on the one hand words/expressions that are infrequent and consequently most often found not to be known by students and on the other hand words/expressions whose context provided clues as to their meanings (either in the immediate proximity or in the larger context or both). (The most frequent item tested occurs 707 times [out of 100, 000 000 words] in the British National Corpus, henceforth the BNC).

The aim when choosing the Swedish test material was to find texts on similar topics as the English ones. While two of the four texts, all of which were articles from magazines and daily newspapers comparable to *Newsweek* and *Time Magazine* in difficulty, adhere to this requirement the other two do not. The reason for this is that the selection of test items was prioritised. With the help of a colleague teaching Swedish at university level, the Swedish test items were selected in the same manner as the English ones described above. (The most frequent Swedish item tested occurs 480 times (out of 69, 762 402 words) in the Swedish corpus used [*Språkbanken*]).

The total number of test items on this text part was the same in the two languages (44 words) and the total text size was also approximately the same (4,135 words for the English texts and 3,459 words for the Swedish texts). (All the test items included in this part can be found in the Appendix.)

Moreover, the total frequencies of the words tested were compared. Based on the BNC and *Språkbanken*, it could be shown that the Swedish test items were slightly more infrequent than the English ones, rendering the Swedish test part, from a frequency-perspective, more difficult than the corresponding English one.

The students were also asked to provide information about the test words/expressions, as exemplified in (1) below (test item 3 in Text A, the English word sought was *lament*).

Example (1)

klaga = _____

- a ☐ I can't find the English word.
- b ☐ I think I have the right English word, but I haven't seen the word before.
- c ☐ I am sure I have the right English word, but I haven't seen the word before.
- d ☐ I recognise the English word and I think it is the right word.
- e ☐ I recognise the English word and I am sure I have the right word.
- f ☐ I know the English word and I am sure I have the right word.

Only answers b and c will be discussed in more detail in the result section since they are considered to involve true inferencing situations.

There was one main reason for including this kind of test format. Since, as discussed in the previous section, good reading skills appear to be a prerequisite of good inferencing skills, the present author wanted to use a testing method that would force the students to read the entire text, thus forcing them to take in all contextual clues available. The hypothesis is that this test type will consequently produce a great number of successful inferences.

In the other part, the students were given a more traditional inferencing test in which they were asked to explain the meanings of words indicated in bold. The English texts (Texts C and D) used for this part consisted of two short stories: *The Bully* by James Reaney (1986), which tested 20 items, and *To Room Nineteen* by Doris Lessing (1992), which included 36 test items. The Swedish test part also consisted of two texts. Whereas one of them (Text C) was a conversational article, testing 24 items, taken from Cederholm and Danell (2007), the other text (Text D), testing 32 items, was a Swedish translation of the beginning of the novel *Perfume: The Story of a Murderer* by Patrick Süskind (1986). Both texts and test items (shown in the Appendix) were selected in the same manner as described for Texts A, B, E and F above. (The most frequent item on the English test occurs 385 times in the BNC; the

most frequent Swedish item 499 times in *Språkbanken*). In this part of the test too, the total frequency of the test items was considered. Again the Swedish test items were slightly more infrequent than the English ones, even more so than was the case with Texts A, B, E and F.

Furthermore, while the total number of test items on this test part is the same for the two languages (56 items), the text mass for Texts C and D differs greatly, the students having considerably more text to absorb in their L2 (18,963 words) than in their L1 (6,972 words). It is difficult to determine the exact effects of having different text sizes. On the one hand, it may be helpful with a longer text since it is then easier to get a feel for the story and thus perhaps easier to draw conclusions about the meanings of words. On the other hand, reading a long text in an L2 can be exhausting and may result in students giving up.

Also, as with Texts A, B, E and F, the informants were for Texts C and D asked to provide information about the meanings they had offered. This is exemplified in (2) below, taken from Text C in the English material.

Example (2)

Every Saturday night we children all took turns bathing in the dish-pan and on Sundays, after Sunday-school, we would all sit out on the lawn and drink the lemonade that my father would make in a big glass **pitcher**. The lemonade was always slightly green and sour like the moon when it's high up in a summer sky.

pitcher = _____

- a ☐ I don't know this word.
- b ☐ I'm guessing the word's meaning from the context.
- c ☐ I recognise this word, but I don't know what it means.
- d ☐ I recognise this word and I'm guessing its meaning from the context.
- e ☐ I recognise this word and I think I know what it means.
- f ☐ I am sure I know what the word means.

If you used the context to figure out the meaning of the word in question, what was it in the text that helped you?

As can be seen from the above, the students were in this part of the inferencing test also asked to provide information about what it was in the context, if anything, that had helped them arrive at the meaning offered.

The main focus in the result section will be the *b* alternative, since this is considered to involve a true inferencing situation.

For both the English and the Swedish tests, the texts occurred in an alphabetical order, starting with Text A and ending with Text F. This means that the more conventional inferencing test made up of Texts C and D occurred in the middle of the test, Texts A and B preceding and Texts E and F appearing last. Also, with a short break in between, the whole English test was taken before the one testing Swedish words/expressions and the students were allowed to sit with each test as long as they wanted to, i.e. no time constraints were put on either test.

RESULTS AND DISCUSSION

In Table 1, the distribution of the students' answers on Texts A, B, E and F is presented. The reader is reminded that these were the texts in which the informants were asked to find words to which Swedish translations (English test) or Swedish definitions (Swedish test) were offered in chronological order.

Table 1. The distribution of answers on Texts A, B, E and F.							
Out of 660 tokens							
	No info offered about test item	Indicated as known		Indicated as not known		Items inferred	
		correct info given	incorrect info given	correct info given	incorrect info given	successful	not successful
English test	19.55%	27.12%	8.03%	14.24%	1.36%	21.06%	8.64%
Swedish test	17.27%	51.97%	7.12%	11.21%	0.30%	8.79%	3.33%

It can be seen here that more attempts at making inferences were made in the students' second language (29.7%, 21.06% of which were successful; 8.64% unsuccessful) than in their mother tongue (12.12%, 8.79% of which resulted in a correct answer and 3.33% of which resulted in an incorrect answer). The lower percentage of inferences in Swedish can mainly be ascribed to the fact that a great many more of the L1 test items were already known (compare a correctness rate of 51.97% for the test items indicated as already acquired on the Swedish test to 27.12% on the English test).

Table 2 presents a more detailed analysis of the inferences made by the students in Texts A, B, E and F.

Table 2. The students' inferencing results on Texts A, B, E and F.

Inferencing on Texts A, B, E and F.										
Successful					Not successful					
	%	Mean	SD	t	Standardised score	%	Mean	SD	t	Standardised score
English test	70.92% (=139/196)	9.27	7.68	0.23	highest: 2.18 lowest: -1.20	29.08% (=57/196)	3.80	5.68	0.36	highest: 2.67 lowest: -0.67
Swedish test	72.50% (=58/80)	3.87	4.37		highest: 2.32 lowest: -0.88	27.50% (=22/80)	1.47	2.97		highest: 2.53 lowest: -0.49

As can be seen, the informants display similar high success rates (Eng: 70.92%; Swe: 72.50%) (and consequently similar failure rates (Eng: 29.08%; Swe: 27.50%)) in both languages, with the learners' L1 having a slight advantage over their L2 (a difference which is confirmed statistically at a significance level of 0.05). Also, especially the differences between the SDs but also the standardised scores confirm the more difficult nature of making inferences in a second language than in a first.

Table 3. The distribution of answers on Texts C and D.

Out of 840 tokens									
	No info offered about test item	Indicated as known		Indicated as not known		Recognised, but still inferred		Items inferred	
		correct info given	incorrect info given	correct info given	incorrect info given	successful	not successful	successful	not successful
English test	8.93%	17.38%	3.69%	27.02%	2.86%	5.12%	4.64%	15.24%	15.12%
Swedish test	8.57%	31.43%	7.26%	18.33%	2.62%	7.14%	3.69%	9.05%	11.90%

Table 3 shows the distribution of the students' answers in relation to Texts C and D. These were the texts that represented a more traditional inferencing test in which the students were asked to give the meanings of words indicated in bold. As with Texts A, B, E and F discussed above, the informants here made more inferences in their L2 (30.36%, 15.24% accurate; 15.12% inaccurate) than in their native language (20.95%, 9.05% of which were successful and 11.90% of which were unsuccessful). Again the L1-L2 difference can mainly

be attributed to the higher percentage of already acquired items in the learners' first language (31.43%) than in their second (17.38%). Another reason for this difference may be that the students made more use of a weaker form of inferencing in their L1 (7.14%) than in their L2 (5.12%), indicating that they recognised the item in question but still made use of its context in order to ascertain its correct meaning.

Table 4 focuses entirely on the inferences made by the students in Texts C and D (only the ones where the informants indicated that the test item was unknown to them, i.e. not the weaker form of inferencing mentioned above).

Table 4. The students' inferencing results on Texts C and D.

Inferencing on Texts C and D.										
	Successful					Not successful				
	%	Mean	SD	t	Standardised score	%	Mean	SD	t	Standardised score
English test	50.20% (=128/255)	8.53	5.68	0.14	highest: 1.49 lowest: -1.50	49.80% (=127/255)	8.47	6.71	-0.02	highest: 2.47 lowest: -1.26
Swedish test	43.18% (=76/176)	5.07	4.36		highest: 2.05 lowest: -1.16	56.82% (=100/176)	6.67	7.08		highest: 3.01 lowest: -0.94

The table shows that the students made more successful inferences in their L2 (50.20%) than in their L1 (43.18%), a difference which is confirmed statistically at a significance level of 0.05. (Nevertheless, the differences between the SDs underscore how difficult inferencing can be in a second language for some students.) This means that in both languages, the informants achieved higher scores on the more unorthodox test discussed above. It thus seems that introducing an inferencing test in which students are forced to read the entire text, making use of all the clues available as was the case with Texts A, B, E and F where the success rates were 70.92% and 72.50% respectively, may be a fruitful way of initiating lessons on inferencing in the L2 classroom, rather than starting with a more traditional test as discussed in the present paragraph.

Furthermore, the results in Table 4 can be compared to the results seen in the Albrechtsen et al. (2008) study discussed previously, where the university students performed considerably better in their L1 (58%) than in their L2 (48%). There may in fact be several reasons why the informants in the present investigation did not achieve higher scores in their mother tongue than in their second language. Firstly, as shown by the comparatively high percentage of items indicated to be known but which in reality were not known (7.26%, see Table 3), some students may have been overly confident about their L1 knowledge and might instead have benefitted from trying to infer the meanings of some of these words.

The reader is also reminded that the informants worked with the whole English test first and only when they had completed this and had handed it in did they move on to the Swedish test. This means that the students were probably rather tired once they started working on the L1 test. After the testing some of the students also reported that they had worked with all of the texts making up the more unconventional test type first (Texts A, B, E and F), saving the longer texts for last. Students working in this way were probably even more exhausted once they got to the more conventional inferencing part of the Swedish test (Texts C and D). Lastly, a few students reported that they had generally put more effort into the L2 test than the one testing their L1 since they, in their own words, 'were studying English, not Swedish'.

It needs to be pointed out here that, although great effort was made to use L1 and L2 texts that were similar as to content and difficulty, these factors could not be controlled fully and may thus have affected the results discussed above.

Furthermore, as discussed previously the learners were asked to describe what it was in Texts C and D that had helped them figure out the meaning of the inferred item. In general, even though they were prompted to do so, the students offered few explanations of their inferences. On the English test, however, there was a slight tendency for the more successful inferencers to attempt to use other clues than those in the immediate proximity of the unknown word. As discussed earlier, this was also seen in Albrechtsen et al. (2008). No conclusions can be drawn in this respect concerning the Swedish test, since the participants here offered even fewer explanations of their inferences.

Lastly, in another study by the present author (Karlsson, 2012), the same 15 students involved in the present investigation were tested on their L1/L2 vocabulary knowledge in four different areas: 1) vocabulary usually taught to Swedish third-year upper secondary school students (100 items) 2) specialised vocabulary (100 items divided among vocabulary used in work/school, business, medicine and technology) 3) idiomatic expressions (80 items such as *pass the buck* and *a flash in the pan*) and 4) highly infrequent vocabulary (100 items). All items were presented to the students in a contextualised form and in one part of each test they were asked about to what extent they had used the context of the item in question to be able to give its correct meaning. Here, with the exception of advanced vocabulary where the students only displayed a success rate of 39.0%, the results on the tests in their L2 ranged from 48.5% of successful inferencing with specialised vocabulary to 55.3% with idioms, vocabulary taught at upper secondary school level displaying a success rate in between of 52.1%. This gives an average success rate of 46.7% for the English test items. This can be compared to the informants' inferencing in their first language where the success rates ranged from 45.0% for vocabulary taught at upper secondary school level to as high as 77.0% for idiomatic expressions, advanced vocabulary and specialised uses of vocabulary displaying success rates in between of 45.9% and 70.4% respectively. For the Swedish test items, this then gives an average success rate of 56.7% which is 10 percentage

points higher than in the subjects' L2. Comparisons can here again also be made with Albrechtsen et al.'s (2008) study in which the university students' results, displaying success rates of 58% and 48% in their L1 and L2 respectively, are remarkably similar to the ones presented here.

PEDAGOGICAL IMPLICATIONS OF THE RESULTS

As indicated by the results in the present investigation and from the study discussed above, inferencing indeed appears to be a commonly used strategy when learners try to figure out the meanings of previously unknown contextualised words. Since the students included in the present investigation had never been taught how to go about making inferences (information conveyed to the present author directly after the inferencing tests), success rates of 72.50%/43.18% and 70.92%/50.20% in the learners' L1 and L2 respectively clearly indicate the potential of possessing the skill to make successful inferences. What learners do subconsciously with great success is, however, not made use of in Swedish schools today, i.e. to the present author's knowledge, there is no part of the syllabus which is set aside for teaching how to make inferences of the meanings of unfamiliar words in context. In order to confirm the validity of what already appears to come naturally to many learners, there is thus an urgent need for introducing this kind of instruction. However, as Nation (2001) states,

[g]uessing from context is a complex activity drawing on a range of skills and types of knowledge. It is worth bearing in mind that it is a subskill of reading and listening and depends heavily on learners' ability to read and listen with a good level of proficiency. Learning a complex guessing strategy will not adequately compensate for poor reading or listening skills and low proficiency. Developing these reading and listening skills is the first priority. (p. 261)

Since research shows that 95%-98% of the words of any text have to be known to a learner in order for that learner to be able to make successful inferences of unfamiliar words (see Previous research), the first measure that needs to be taken is to find spoken and written texts that are of appropriate levels of difficulty on an individual basis. Some of the students in the present investigation, for example, probably felt the texts to be too difficult, which in turn means that these students were not really given the opportunity to show their full potential in this respect. Furthermore, since a great deal of research also shows that 'development in the second language tends to follow and mirror development in comparable areas in the first language' (Albrechtsen et al., 2008, p. XV), instruction on inferencing needs to start in the learner's mother tongue, hence calling for cooperation between teachers in students' L1s and L2s. This is of course quite an undertaking on the part of instructors, but it is a prerequisite if students, especially low-achievers, will ever have a sporting chance of developing and strengthening their L1 inferencing skills and finally transferring these skills into the L2 they are trying to learn.

REFERENCES

- Albrechtsen, D., Haastруп, K., & Henriksen, B. (2008). *Vocabulary and writing in a first and second language: Processes and development*. New York: Palgrave Macmillan.
- Artley, A. S. (1943). Teaching word-meaning through context. *Elementary English Review*, 20, 68–74.
- Bensoussan, M. & Laufer, B. (1984). Lexical guessing in context in EFL reading comprehension. *Journal of Research in Reading*, 7, 15–32.
- Carnine, D., Kameenui, E. J., & Coyle, G. (1984). Utilization of contextual information in determining the meaning of unfamiliar words. *Reading Research Quarterly*, 19, 188–204.
- Cederholm, P. & Danell, A. (2007). *Känslan för ord*. Svenska B. Malmö: Gleerup.
- Chihara, T., Oller, J., Weaver, K., & Chavez-Oller, M. A. (1977). Are cloze items sensitive to discourse constraints? *Language Learning*, 27, 63–73.
- Daneman, M. & Green, I. (1986). Individual differences in comprehending and producing words in context. *Journal of Memory and Language*, 25, 1–18.
- Haastруп, K. (1991). *Lexical inferencing procedures or talking about words: Receptive procedures in foreign language learning with special reference to English*. Tübingen: Gunter Narr.
- Herman, P. A., Anderson, R. C., Pearson, P. D., & Nagy, W. E. (1987). Incidental acquisition of word meaning from expositions with varied text features. *Reading Research Quarterly*, 22, 263–284.
- Horst, M., Cobb, T., & Meara, P. (1998). Beyond a Clockwork Orange: Acquiring second language vocabulary through reading. *Reading in a Foreign Language*, 11, 207–223.
- Huckin, T. & Bloch, J. (1993). Strategies for inferring word meanings: A cognitive model. In T. Huckin, M. Haynes, & J. Coady, (Eds.) *Second language reading and vocabulary learning* (pp. 153–180). Norwood, NJ: Ablex.
- Jenkins, J. R. & Dixon, R. (1983). Vocabulary learning. *Contemporary Educational Psychology*, 8, 237–260.
- Karlsson, M. (2012). *Quantitative and qualitative aspects of advanced students' L1 (Swedish) and L2 (English) knowledge of vocabulary*. Research report. Halmstad: Halmstad University.
- Kim, H. (2003). *Vocabulary comprehension of advanced ESL learners in academic reading: A collective case study*. MA thesis, University of Ottawa.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. New York: Cambridge University Press.
- Laufer, B. (1988). What percentage of text-lexis is essential for comprehension? In C. Laurén & M. Nordmann, (Eds.) *Special language: From humans thinking to thinking machines*. Clevedon: Multilingual Matters.
- Laufer, B. (1997). What's in a word that makes it hard or easy?: Some interlexical factors that affect the learning of words. In N. Schmitt & M. McCarthy, (Eds.) *Vocabulary: Description, acquisition and pedagogy* (140–155). Cambridge: Cambridge University Press.
- Laufer, B. & Sim, D. D. (1985). Taking the easy way out: non-use and misuse of clues in EFL reading. *English Teaching Forum*, 23(2), 7–10, 20.
- Lessing, D. (1992). To room nineteen. In G. Övergaard, R. Lundén & S-J Spånberg, (Eds.) *Short fictions: Stories from the English-speaking world of today* (pp. 62–91). Stockholm: Natur och Kultur.

- Leys, M., Fielding, L., Herman, P., & Pearson, P. D. (1983). Does cloze measure intersentence comprehension? A modified replication of Shanahan, Kamil, and Tobin. In J. A. Niles & L. A. Harris, (Eds.) *Searches for meaning in reading/Language processing and instruction*. 32nd Yearbook of National Reading Conference. New York: Rochester.
- Liu, N. & Nation, I. S. P. (1985). Factors affecting guessing vocabulary in context. *RELC Journal*, 16, 33–42.
- Nagy, W. E., Anderson, R. C., & Herman, P. A. (1987). Learning word meanings from context during normal reading. *American Educational Research Journal*, 24, 237–270.
- Nassaji, H. (2004). The relationship between depth of vocabulary knowledge and L2 learners' lexical inferencing strategy use and success. *Canadian Modern Language Review*, 61(1), 107–134.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Odlin, T. (2003). Cross-linguistic influence. In C. J. Doughty & M. H. Long, (Eds.) *The handbook of second language acquisition* (pp. 436–386). Malden, MA: Blackwell.
- Palmberg, R. (1988). On lexical inferencing and language distance. *Journal of Pragmatics*, 12, 207–214.
- Paribakht, T. S. (2005). The influence of first language lexicalisation on second language lexical inferencing: A study of Farsi-speaking learners of English as a foreign language. *Language Learning*, 55, 701–748.
- Paribakht, T. S. & Trévillé, M. C. (2007). L'influence lexicale chez des locuteurs de français et des locuteurs de persan lors de la lecture de textes anglais: Effet de la lexicalisation en première langue. *The Canadian Modern Language Review*, 63(3), 399–428.
- Paribakht, T. S. & Wesche, M. (2006). Lexical inferencing in L1 and L2: Implications for learning and instruction at advanced levels. In H. Byrnes, H. Weger-Guntharp, K. A. Sprang, (Eds.) *Educating for advanced foreign language capacities: Constructs, curriculum, instruction, assessment*. (pp. 118–135). Washington, DC: Georgetown University Press.
- Qian, D. D. (2004). Second language lexical inferencing: Preferences, perceptions, and practices. In P. Bogaards & B. Laufer, (Eds.) *Vocabulary in a second language. Selection, acquisition and testing* (pp. 155–172). Philadelphia: John Benjamins Publishing Company.
- Reaney, J. (1986). The bully. In M. Atwood & R. Weaver, (Eds.) *The Oxford book of Canadian short stories in English* (pp. 152–161). Toronto: Oxford University Press.
- Ringbom, H. (1987). *The role of first language in foreign language learning*. Clevedon: Multilingual Matters.
- Rye, J. (1985). Are cloze items sensitive to constraints across sentences? A Review. *Journal of Research in Reading (UKRA)*, 8, 94–105.
- Schmitt, N. & McCarthy, M. (Eds.) (1997) *Vocabulary: description, acquisition and pedagogy*. Cambridge: Cambridge University Press.
- Shefelbine, J. L. (1990). Student factors related to variability in learning word meanings from context. *Journal of Reading Behavior*, 22, 71–97.
- Språkbanken. (2013). [Language corpora]. Retrieved from <http://spraakbanken.gu.se/>.
- Stahl, S. A. & Fairbanks, M. M. (1986). The effects of vocabulary instruction: A model based meta-analysis. *Review of Educational Research*, 56, 72–110.
- Sternberg, R. J. (1987). Most vocabulary is learned from context. In M. G. McKeown & M. E. Curtis, (Eds.) *The nature of vocabulary acquisition*. Erlbaum: Hillsdale, NJ.

- Süskind, P. (1986). *Parfymen. Berättelsen om en mördare*. (U. Wallenström, Trans.). Stockholm: Wahlström & Widstrand.
- Swanborn, E. & de Glopper, K. (1999). Incidental word learning while reading: A meta analysis. *Review of Educational Research*, 69, 261–285.
- Webb, S. (2008). The effects of context on incidental vocabulary learning. *Reading in a Foreign Language*, 20, 232–245.
- Wesche, M. & Paribakht, T. S. (2010). *Lexical inferencing in a first and second language: Cross-linguistic dimensions*. Buffalo, NY: Multilingual Matters.

APPENDIX

The items in the following lists (given in the form they were found in the texts) are presented according to the number of correct answers irrespective of whether the words were already known, inferred correctly from context or simply guessed, starting with the item that received the most correct answers.

THE ITEMS SOUGHT IN TEXTS A, B, E AND F (ENGLISH TEST)

- | | |
|---------------------|------------------------|
| 1. slacker | 23. takes its toll on |
| 2. misogynists | 24. lamented |
| 3. copycats | 25. gumption |
| 4. hoaxers | 26. thugs |
| 5. poachers | 27. spawned |
| 6. teemed with | 28. mayhem |
| 7. crestfallen | 29. hotbeds |
| 8. wiggled through | 30. pterodactyl |
| 9. antlers | 31. chagrin (noun) |
| 10. deforestation | 32. parity with |
| 11. dean | 33. apparition |
| 12. disparity | 34. untold |
| 13. murky | 35. plight (noun) |
| 14. retirees | 36. alumni |
| 15. mishmash | 37. succinct |
| 16. pilfer | 38. bigotry |
| 17. was in stitches | 39. dereliction |
| 18. crime-infested | 40. judicious |
| 19. matter (noun) | 41. affirmative action |
| 20. play down | 42. litigious |
| 21. epitomizes | 43. forays |
| 22. tenacious | 44. telltale |

ARTICLES

THE ITEMS SOUGHT IN TEXTS A, B, E AND F (SWEDISH TEST)

- | | | | |
|--------------------|------------------------------------|----------------------|-----------------------------|
| 1. tjudra | (=tether) (verb) | 23. intimt | (=intimately) |
| 2. provokativ | (=provocative) | 24. fränder | (=kinsmen) |
| 3. deserterade | (=deserted) | 25. benägna | (=inclined, willing) |
| 4. initial | (=initially) | 26. velocipeden | (=the bicycle) |
| 5. skärskådade | (=examined) | 27. kuriositet | (=peculiarity) |
| 6. förolyckade | (=those who have lost their lives) | 28. välbelagt | (=well-proven) |
| 7. av första rang | (=leading) (adj) | 29. imperativ | (=imperative) |
| 8. likar | (=equals) | 30. mylla | (=earth) (noncount) |
| 9. artikulera | (=articulate) | 31. amnesti | (=amnesty) |
| 10. fragmenten | (=the fragments) | 32. uttryckshorisont | (=the extent of expression) |
| 11. eggar | (=stimulate) | 33. bedrägliga | (=deceptive) |
| 12. umbäranden | (=hardships) | 34. har bäring på | (=have bearing on) |
| 13. suggereras | (=is stimulated) | 35. illusorisk | (=imaginary) |
| 14. instruktioner | (=instructions) | 36. last | (=bad habit, vice) |
| 15. exponerats för | (=was exposed to) | 37. härdade | (=patient) (adj) |
| 16. sedermera | (=later on) | 38. älskog | (=love-making) |
| 17. animal | (=animal) | 39. kontroverser | (=controversies) |
| 18. fabricerade | (=fabricated) | 40. i god ordning | (=as intended) |
| 19. diminutive | (=diminutives) | 41. liderliga | (=lecherous) |
| 20. nihilist | (=nihilist) | 42. disparata | (=different) |
| 21. penetrera | (=penetrate) | 43. taxonomi | (=taxonomy) |
| 22. erinra sig | (=remind themselves) | 44. patologisk | (=pathological) |

THE ITEMS INFERRED IN TEXTS C AND D (ENGLISH TEST)

- | | |
|---|-----------------------|
| 1. raspberries | 29. gaunt |
| 2. ginger | 30. alluringly |
| 3. shears | 31. pettish |
| 4. leather thong | 32. sober-suited |
| 5. currants | 33. connivance |
| 6. pitcher (to put liquid in) | 34. charwomen |
| 7. minced | 35. fiends |
| 8. toppled off | 36. simpleton |
| 9. dimples | 37. nettles (noun) |
| 10. limelight | 38. perfunctorily |
| 11. downtrodden | 39. inextricably |
| 12. bridle | 40. trammelled |
| 13. tinkling | 41. furnace |
| 14. is not a patch on | 42. sullen |
| 15. besieged | 43. dismal |
| 16. constellation | 44. rectitude |
| 17. slipped | 45. sultry |
| 18. in cold storage (used symbolically) | 46. grimy |
| 19. bondage | 47. arid |
| 20. remonstrated | 48. connubial |
| 21. stoutly | 49. dingy |
| 22. gymnasium | 50. coy |
| 23. succumb | 51. buckwheat |
| 24. denounced | 52. abeyance |
| 25. infallible | 53. wistfulness (0) |
| 26. stale | 54. canvassing (0) |
| 27. listlessly | 55. chafe (0) |
| 28. planed (wood) | 56. wool-gathered (0) |

THE ITEMS INFERRED IN TEXTS C AND D (SWEDISH TEST)

1.	måhända	(=maybe)
2.	eskalerade	(=escalated)
3.	dispyten	(=the argument)
4.	odören	(=the odour)
5.	tynande (adj)	(=fading away)
6.	stundom	(=sometimes)
7.	spirande (adj)	(=growing)
8.	allmosa	(=alms)
9.	botanic	(=botany)
10.	expedieras	(=be sent away)
11.	falsarier	(=falsifications)
12.	bastarden	(=a child born out of wedlock)
13.	understår sig	(=dares)
14.	tvådde sig	(=washed himself)
15.	oraklen	(=the oracles)
16.	luttrats	(=have been tested)
17.	katakomber	(=catacombs)
18.	torftig	(=plain and shabby)
19.	infernalsk	(=intense)
20.	gravare	(=more damaging)
21.	amulet	(=amulet)
22.	genmälde	(=replied)
23.	Vämjdes	(=made him feel sick)
24.	Inkorporerat	(=have incorporated)
25.	näpst	(=have been rebuked)
26.	entledigad	(=dismissed)
27.	bryderiet	(=tricky situation)
28.	förvillelse	(=aberration)
29.	fabulerande	(=giving her imagination free rein)
30.	vanmakt	(=powerlessness)
31.	inskränkte sig	(=were limited to)
32.	enfaldigt	(=silly)
33.	gungfly	(=quagmire)
34.	i vardande	(=future) (adj)
35.	grifterna	(=the graves)
36.	vederstyggliga	(=abominable)
37.	relativiserar	(=compare)

- | | |
|--------------------------|--------------------------|
| 38. i högönsklig välmåga | (=in the best of health) |
| 39. alltjämt | (=still) |
| 40. altruistisk | (=altruistic) |
| 41. misskund | (=compassion) |
| 42. snöpliga | (=disappointing) |
| 43. effektuerades | (=were executed) |
| 44. priggav | (=did not reveal) |
| 45. undfick | (=received) |
| 46. indignerade | (=indignant) |
| 47. kaxade | (=nagged) |
| 48. räntabelt | (=profitable) |
| 49. vederbörligen | (=in due form) |
| 50. förhärdad | (=callous) |
| 51. rundlig | (=a great while) |
| 52. fryntlig | (=jovial) |
| 53. genstörtighet | (=recalcitrance) |
| 54. tillhållna | (=were urged) |
| 55. priorn | (=the prior) |
| 56. mörkmän | (=obscurantists) |