Writing Behaviour among Ninth Graders Composing in Swedish as a First Language (L1) and English as a Foreign Language (FL):

[A Topic-Related Functional Perspective]

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1. Introduction

Multilingualism is rapidly growing in the global community as is the need to communicate in a foreign language in both speech and writing. Foreign language instruction has developed from a focus on reading, prior to the Second World War, to audio-lingual and communicative approaches in the post-war period and, from the 1980’s onward, to a greater interest in foreign language writing. This is due largely to the demands of the globalized informational society (Warschauer, 2006). Proficiency in English is particularly important in this global society since English is the dominant language of communication in many parts of the world. English language skills are essential for higher studies, as well as in almost all kinds of professions in an increasingly international labour market. Writing in English is an important part of the all-round communicative skills needed in this day and age.

To our knowledge little research exists on Swedish speaking children’s writing in English as a foreign language. However, there is one thesis which includes studies involving a group of 13-year old participants who write in Swedish (L1) and English (FL) namely Lindgren’s thesis from 2005. Lindgren has used a combination of keystroke logging, stimulated recall and visualisation in order to interpret keystroke log files and, in so doing, gain an understanding of the cognitive processes involved in L1 and FL writing. In her thesis a taxonomy for the analysis of on-line revision is proposed. In an empirical study she found that 13 year old writers revised more when they wrote in English as a foreign language than in Swedish as a first language. This corresponds with the findings of other studies (Thorson, 2000; Broekkamp & Van den Bergh, 1996). Writers revised more in EFL and they revised more on a linguistic level and not as much on a conceptual level.

Other studies that focus on children’s and teenagers’ writing in L1 and FL (or more frequently, L1 and L2) are, for example: “Reading and Writing in a Foreign Language” (Stevenson, 2005), and “First Language and Second Language Writing: The Role of Linguistic Knowledge, Speed of Processing, and Metacognitive Knowledge” (Schoonen, van Gelderen, de Glopper, Hulstijn, Simis, Snellings, Stevenson, 2003). Stevenson (2005) found that more attention was devoted to linguistic processing and less attention to conceptual processing in FL than in L1. Schoonen et al’s study was a longitudinal, interventional study in
which the results showed, among other things, that L2 writing proficiency is “…highly correlated with L1 writing proficiency, more than with either L2 linguistic knowledge or the accessibility of this knowledge” (Schoonen et al, 2003, pg. 166).

This paper is a study of the writing behaviour of some (n=23) Swedish speaking 14-15-year olds when composing in Swedish (their first language – L1) and in English (as a foreign language – FL). Swedish children learn English from an early age at school (between the first and third grade). They also pick up a lot of English by watching TV, using the Internet, etc. English is very commonly used in Sweden and in this regard can almost be said to have the status of L2 (second language). Thus, much of the research applying to L2 is also applicable to FL in this case. However, the term L2 is used when the foreign language being learnt is an official language of the country in which one resides, so the term FL is the one used in this paper.

Hopefully the present study will throw some more light on questions such as the importance of writing skills in L1 for the development of writing skills in FL, and the ways in which L1 and FL writing processes are connected. Furthermore, perhaps we can identify the strategies used by students when their language abilities are insufficient, the linguistic devices they use to create coherence, and the kinds of strategies that could be taught in order to facilitate foreign language writing. Naturally these are likely to differ depending on the needs of the individual.

The approach taken in this paper will be a psycholinguistic/cognitive approach using the key-stroke logging tool, ScriptLog (Strömqvist & Karlsson, 2002; Strömqvist & Malmsten, 1998. See www.scriptlog.net for more information). ScriptLog has been used in several research projects, sometimes in combination with other tools such as eye-trackers. For other studies using ScriptLog see also Holmqvist et al. (2002), Wengelin (2002), and Strömqvist, Ahlsén, Wengelin, Grönqvist, and Hagman (1999).

There will also be in-depth studies of two of the subjects writing in L1 and FL. The aim of these in-depth studies will be to evaluate the use of the qualitative analysis tools described below. These tools will be used to examine the writing in L1 and FL of the two subjects from the point of view of the emerging text and so possibly gain a greater understanding of the association between the textual structure of output and the underlying cognitive processes of planning and formulating (Spelman Miller, K., 2006). The analytical tools used here are called ‘framing devices’ and ‘potential completion points’ and they will be explained in more detail in Section 4. Suffice it to say, meanwhile, that the category of
‘framing devices’ was introduced by Spelman Miller in order to observe the ways in which the writers introduce new topics. The aim is to see whether there is a difference in the use of framing devices and thus in the potential discourse function of certain grammatical units between the L1 and FL writing of these individuals. The other tool of analysis, ‘potential completion points’ is used to investigate the location of pauses (made possible by ScriptLog) in the emerging text. According to Wengelin (2002) (long) pauses are more likely to occur at discourse boundaries between large units such as paragraphs than they are at smaller units. Such pauses (at, for example, boundaries that are typically realized as paragraphs) may form units that have potentially significant discourse roles in introducing, maintaining or developing topic (see KSM, 2006). Pauses at more local levels seem to indicate lexical disfluencies while pauses located at discourse boundaries (for example paragraph and sentence boundaries) may indicate planning with regard to content, as well as monitoring of text already written. The analysis of potential completion points may allow us to see where in the text the writer has paused to plan, revise etc. (based, nonetheless, on qualified speculations) in a way that is not possible to see in the final edited text. Also, perhaps there is a correlation to be found between certain potential completion points and final completion points. Furthermore, these analyses will be combined to see whether or not there is any correlation between framing devices and potential completion points, and, if so, if in turn there are any similarities or difference between the L1 and FL writing of these particular individuals in this regard. As mentioned earlier these analytic tools have been introduced by Spelman Miller (2006) (from now on referred to as KSM). KSM has used various keystroke logging tools to investigate the writing processes of, amongst others, 21 academic writers who either have English as a first language (L1) or as a second language (L2). Her analysis is based on a pausological study made possible when using keystroke logging. Her focus is on the emerging status of the language. KSM’s analysis is threefold: firstly, the definition of word level locations (of pauses) is made more precise than in previous studies (divided into, for example, noun, determiner, disjunction, conjunction, etc). Secondly, the location of the pause is analysed from the point of view of its ‘potential completion point’. This point may change during the writing and revising process – for example, a pause may be at the word-level location and then, followed by a deletion and a full stop, turn out to be at a sentence completion point. Thirdly, KSM uses the concept of framing devices (based on Halliday’s theory of theme, (e.g. 2004) and on Goutsos’ categorizations (e.g. 1997)) to study the pause location from the perspective of its function in establishing or introducing topic (KSM,
The introduction of this analytical device will hopefully allow for a combination of a functional text analysis and a pausological analysis which may facilitate the tracking of mental activities as they unfold thus leading to a greater understanding (albeit by no means a comprehensive understanding) of the cognitive processes of writing.

Issues such as the social context within which FL writing is learned and performed, as well as issues concerning motivation and goals, although very important issues and essentially inseparable from the cognitive perspective, will only be treated marginally. However, the intention is for these issues to be the focus of a future study.

In order to study differences and similarities between L1 and FL writing, it is necessary to have an understanding of writing processes in general. According to Kellogg, 2006, writing draws on three major cognitive systems: Thinking, memory and language. These three systems are depicted by Kellogg as three overlapping, interdependent circles with ‘written composition’ in the centre. Naturally there are many similarities to be found when comparing factors that can lead to good L1 and FL writing. Knowledge of the conventions of writing is important in both cases (these conventions are likely to be culturally specific, or at least genre specific). Linguistic knowledge about language as “meaning”, as well as meta-linguistic knowledge, about language as “form”, is naturally important. Proficiency in the use of this knowledge is also essential. The term: “Writing is a complex task” is perhaps a cliché, but it is nonetheless true. This complexity necessitates the activation and specific control of writing processes, taking into consideration aspects such as knowledge of topic, audience, genre; planning, translation/generation of text (from concept to linguistic form), and revision/editing’; terminology from, amongst others, Hayes and Flower (1980). In order to reach fluency in FL writing, sufficient knowledge of the target language on the lexical, orthographic and syntactical levels is also required (Ransdell & Barbier, 2002, pp. 1-10). Much of the research being done in foreign language writing points to the need for the acquisition of specific skills, such as, for example spelling.

2. Background

Up until the 1980’s, writing research was primarily focused on the final, edited product. With the development of computer tools that enable the study of the actual process of writing, the perspective has changed. Recently the tide has once again turned and writing research is now more integrated, dealing with both the product and the process. As in many other fields concerned with the study of complex tasks, the concept of working memory and cognitive
load is an aspect that has received considerable attention. Many researchers are now also focusing on the social dimension of writing (for example, Hayes, 1996) which, as has already been mentioned, will only be treated marginally in this paper.

2.1. Theories used in FL writing research:

2.1.1. Models for process-oriented writing research:

The most extensively used model of the writing process is that of Hayes and Flower (1980).

Fig. 1: Hayes and Flower’s (1980) process model of writing (taken from images, Google)

Much of the process-oriented research on writing that has been done since then has had this model as a frame of reference. Also, the vocabulary fixed in this model has been the vocabulary most commonly used in dealing with the composing process, especially the three major processes of “planning, generating/translating, and revising/editing”. Amongst these three processes, planning and revising have received the most attention. The process referred
to as “translation” in the early model of Hayes and Flower (1980) and as “text production” in Hayes' model of 1996 is more rarely mentioned in the research literature (see Wengelin, 2002, pg. 75, and Witte & Cherry, 1986, pg. 123).

Another model often mentioned is that of Bereiter and Scardamalia (1987). They see writing as being comprised of two qualitatively different processes i.e. “knowledge-telling” and “knowledge-transforming”. This dichotomy may be compared to the concepts of “linear processing” (knowledge-telling) and “all-in-one processing” (knowledge-transforming), that Ransdell, Lavelle and Levy (2002) refer to. In comparing factors that can lead to good writing in L1 and L2, Ransdell et al. suggest that good writing is associated with all-at-once strategies characterized by continuous planning, text generation, and revision. Poor writing, on the other hand, would seem to be associated with step-by-step strategies i.e. planning first, then generating text and, finally, revising. The idea here is that non-linear processes (knowledge-transforming processes) change thinking. A revision is made on-line, which leads to another formulation, which leads to other associations, which leads to new ideas etc. This dichotomy between knowledge-telling and knowledge-transforming is also referred to in the studies dealing with working memory and writing (McCutchen, 1996, 2000).

2.1.2. The processing demands of writing:

Torrance and Galbraith (2006) refer to McCutchen’s (1994) analogy of the writer as a switchboard operator, continually trying to coordinate inputs and outputs between different senders and receivers. In order for this high level of coordination to be achieved it is necessary to overcome some processing constraints. Torrance and Galbraith suggest that a writer aspiring to succeed at this high level of coordination should proceed as follows:

1. Practice low-level skills that have to do with transcription and spelling
2. Develop task- and domain-specific skills in order to maximise the efficient use of transient memory resources.
3. Take strategic steps such as preplanning, making notes, rough drafting, etc.

Let us now take a brief look at each of these strategies and the effect they might have on the writer’s ability to overcome some of the processing constraints:

The automatization of low-level skills: It goes without saying that transcription proficiency should facilitate the task of writing. By the same token, a number of studies (e.g. Wengelin,
2006) have shown that if a writer has spelling difficulties this is likely to narrow down the range of vocabulary used. Presumably, this would even more likely be the case in FL writing. Spelling difficulties can interfere with lexical retrieval processes and an active chain of thought might be broken, thus disturbing the higher-level process of creating coherence in the text. Also, mid-word pausing (for example due to spelling difficulties) “results in the loss of lexical items that are awaiting transcription but that are less common and therefore have a lower level of activation” (ibid, pg. 75). Therefore, spelling training might help overcome some constraints. Another factor that might help overcome processing constraints, especially for writers with learning difficulties, could be the use of assistive technology such as spelling checkers and word prediction software.

**Efficient memory-management:** In order to get to the end of a sentence without forgetting what it was that one intended to write, it is important not to be too easily distracted. Distractions might, for example, be in the form of irrelevant associations. Torrance et al. also refer here to Ransdell and Levy who contend that people with high reading comprehension skills (1999) or, writers who are multilingual (2001), have been found to be particularly good at suppressing information that is irrelevant to the task at hand. In his work of 1996, Hayes argues that reading practice provides a fertile ground for the development of writing skills. Most skilled readers show a greater versatility in shifting between various sub-processes than unskilled readers do. By the same token, practice in foreign language reading should facilitate the foreign language writing process. FL writers who lack sufficient knowledge of the foreign language are likely to interrupt their writing trying to find a linguistically suitable way to express their ideas more often and for longer than they would in their L1 (Chenoweth & Hayes, 2001).

**The effects of writing strategies on processing demands:** The choices which a writer makes with regard to divisions of the major task into subtasks and the ordering of the same (the writer’s strategy) is likely to have important consequences for the writing process. It is unclear which strategy is the most effective and it surely depends on the task, the writer’s personality, the genre, the modality, the social situation, the imagined reader, etc. Torrance and Galbraith argue for a dynamic model of the writing process. They claim that working memory capacity is dependent on task- and domain-specific memory management skills.
2.1.3. Comparisons between L1 and FL writing; writing profiles and 'signatures', similarities and differences:

Seminal empirical research on the relation between personality and writing has been carried out by Galbraith and Torrance (1996, 1999). Their tests were based on the intuitive assumption that some writers perform better under certain circumstances whereas other writers would perform better under other circumstances. They hypothesized that there would be a difference between writers they chose to call “high self-monitors” and so-called “low self-monitors”. The former they describe as writers “…who control their expressive behaviour in order to present themselves desirably to others”. This can be seen in extensive planning before inscription. The latter they describe as writers who “…express their affective state directly”, and plan in the course of writing.

Not very much research has been done on writing profiles in general and even less research has been done with regard to the consistency (or lack thereof) of these profiles in L2 or FL writing. According to Ransdell, Lavelle, and Levy (2002), there had been no studies of “writing signature” (as they call writing profiles) data in L2 writing at the time of their study. A writing signature is “associated with persistent differences in writing quality and fluency” which largely depend on “…individual differences in working memory ability that promote or inhibit nonlinear processing” (Ransdell et al, 2002, pg.135). They have studied the effects of the training of working memory strategy on writing performance among four subgroups of students, writing in either English as L1 or L2. They have thus not studied the consistency of individual writing profiles across languages as is the aim of this study. However, they found that there were clearly more similarities than differences when comparing the factors that can lead to good quality writing in L1 and L2. They also found that an all-at-once strategy facilitates higher fluency in both L1 and L2 writers.

As far as transferring writing skills from one language to another is concerned, the theoretical construct of Cummins (1980) (in Ransdell and Barbier, 2002) has been widely used. This is a notion of “common underlying proficiency” (basically meaning that there is a common set of abilities underlying both first and second language performance).

In her study of 2006, Spelman Miller found that L2 writers paused more frequently than L1 writers. The results of her study also showed that productivity and rate of production were lower in L2. “The task of producing texts appears to be slower and more effortful…” (Spelman Miller, 2006, pg.143). This observation is supported by Thorson (2002) who found
that the participants in her study tended to write less in their foreign language (German) but revised proportionately more than when writing in their first language.

An interesting study of writing profiles is that of van Waes and Schellens (2003) in which they investigate the ways in which writing profiles are affected by “physical aspects of the task environment” specifically the use of a word processor vs. the use of pen and paper. They distinguished five writing profiles namely: 1) the *initial planner*, 2) the *fragmentary Stage I writer*, 3) the *Stage II writer*, 4) the *non-stop writer*, and 5) the *average writer*. They found that the adopted profiles depended largely on the constraints of the writing environment and that there was a strong tendency for writers to change their profile when they changed writing mode. The differences in the profiles were, amongst others, to be found in the following areas:

- The level at which revisions are made
- The way the revisions are distributed throughout the writing process
- The degree of fragmentation of the writing process.

(pan.847)

The observational methods and research approach developed by Van Waes and Schellens can be very useful for this study. Where they have focused on revisions the focus in this study will rather be on pauses. In the same way as they investigate the ways in which writing profiles are affected by task environment, this study focuses on the way in which writing profiles change or remain consistent when writing in L1 and FL.

Hyönä, Lorch, and Kaakinen (2002) have investigated ‘reading profiles’ (using evidence from eye fixation patterns). They distinguished four qualitatively distinct reading strategies among competent adult readers: 1) *fast linear readers*, 2) *non-selective reviewers*, 3) *slow linear readers* and 4) *topic structure processors*. Hyönä et al argue that “…the particular global processing strategy adopted by a reader will surely have pervasive effects on micro-processing and on the nature of the mental representation constructed by the reader” (pg.44), and thus on overall comprehension and recall. By the same token, different writing strategies will surely affect the overall writing process and product. Hyönä et al found that the ‘topic structure processors’ paid close attention to headings, had the largest working-memory capacity and showed the best comprehension and recall.
In sum, the study of writing profiles may help us uncover the effectiveness of certain strategies vis-a-vis other strategies which, in extension, can lead to more individualized and effective classroom instruction.

3. Research Questions

- What are the differences/similarities, with regard to the writing process, between L1 and FL writing? For example: Are the pauses to be found in the same types of location/the same textual levels in L1 and FL (see Wengelin 2002, 2006; Spelman Miller, 2006; and, with regard to location of revisions, van Waes & Schellens, 2003)?
- Are there individual profiles and, if so, do they remain consistent in FL writing? If not, in what way do they change?
- Is there a difference between the final edited L1 texts, on the one hand, and the final edited FL texts on the other hand?
- Can the analysis tools used in the case studies (potential completion points and framing devices) enable us to gain an understanding of individual writing profiles and their consistency (or lack thereof) when writing in English as a foreign language?

Many investigations into processing behaviour are based on small numbers of subjects and may thus not readily reveal generalizable differences. This study is also limited in that respect and the more fine-grained qualitative analyses of four of the texts can merely provide us with some complementary information. A more comprehensive study using qualitative analyses of a greater number of texts would perhaps allow us to make some generalizations.

3.1. Predictions of outcome:

There will be no hypotheses stated in this paper since it is an exploratory study. However, on the basis of intuition and taking into consideration the results of previous studies (e.g. Chenoweth and Hayes, 2001; Hyönä, Lorch, and Kaakinen, 2002; Ransdell, Lavelle, and Levy, 2002; Spelman Miller, 2006; Lindgren, 2005; Thorson, 2000; Van Waes and Schellens, 2003), the following predictions can be made:
a) There will be fewer tokens in the linear texts in English (FL) than in Swedish (L1).

b) The ratio of pausing time to total time will be greater in the English texts than in the Swedish texts (this may be interpreted as lower production and lower fluency).

c) More attention will be given to lower level concerns, such as spelling etc. in the FL texts. This, in turn, can be expected to increase the working memory load of the writer, thus leading to less cognitive capacity left to deal with higher level concerns, such as global planning.

d) There will be differences in the use of framing devices in L1 and FL. The nature of these differences remains to be seen. However, KSM found in her study (2006) that “…the L2 writers of English will generate more simple subject theme pauses than L1 writers.” (Spelman Miller, 2006, pg 141). Considering the near-L2 status of English as a foreign language in Sweden, KSM’s finding is likely to be replicated in this study. Spelman Miller also found that L2 writers paused for longer at subject theme locations than at non-subject theme locations. “A possible interpretation of these findings is that the L2 writers appear to make use of the subject theme-framing device location to produce longer pauses, whereas in the case of the L1 writers, in general, the subject theme location does not attract substantial pausing” (Ibid, pg 145). However, there was a relatively high degree of variation in her data just as there is likely to be in mine.

e) There will be fewer tokens in the final edited texts in English than in Swedish.

4. Method and Analyses

In this study narrative essays composed using the keystroke logging tool ScriptLog were analyzed quantitatively for comparisons between English and Swedish, and the texts of two of the subjects were analyzed qualitatively.

The quantitative analyses were analyses of productivity and fluency based on the statistics generated by ScriptLog.

The qualitative analyses, which were performed on the texts of two of the subjects were based on Spelman Miller’s potential completion points and framing devices. The pause length chosen was 5 seconds and longer since pauses shorter than 5 seconds are mostly found at character and word potential points and seldom use framing devices to introduce topic. However, it is nonetheless of interest to examine the frequency of pauses between 2 and 5 seconds long. These frequencies are accounted for in the qualitative analysis section. The
analysis of these texts can be seen as an attempt to find out whether or not these analytical tools would prove fruitful for the analysis of individual FL writing profiles on a larger scale. Therefore, this part of the study may be regarded as a sort of pilot study within the larger context.

4.1. Participants

The participants in this study were 30 high school students, (15-16 years old) with Swedish as their L1 and English as FL. They came from two different ninth grade classes and they have all had the same teachers in English and Swedish. The participants were asked to fill in a form with language details (see Appendix). They were also assigned an individual code on this form, such as, for example, ‘edefgh’. Those who had English as a home language or who had spent more than six weeks in an English speaking country were removed from the study. 21 students remained for the analysis. All of the subjects were informed that participation was voluntary, that they were free to leave the study at any time and that their texts would be treated anonymously. They were asked to complete a form of consent as were their parents (see Appendix).

4.2. Data Collection

The data collected was as follows:

30 completed forms with questions pertaining to language spoken in the home, language learnt in other countries, etc (see Appendix)

30 narrative essays on the topic: “When I saved someone’s life or saved him/her from a tricky situation” or “When someone saved my life or saved me from a tricky situation.”

30 completed questionnaires with questions pertaining to the test situation, reading and writing experience in English and Swedish etc (see Appendix). The participants were asked to fill in the questionnaires after having written both of the texts. These questionnaires were initially collected so as to provide information with regard to, for example, reading and writing habits in L1 and FL. However, during the progress of the study, a decision was made only to use the questionnaires with regard to the case studies. The information remains, nonetheless, and could be used in a future study, for example to investigate any eventual correlation between reading habits and writing performance.

The experiment took place on two separate occasions in the computer room in ‘The Humanities Laboratory’ in the ‘Centre for Languages and Literature’ (SOL) in Lund, Sweden.
All of the computers (19 PCs) had ScriptLog installed. The computers were prepared so that the windows for entry of personal details were open (see appendix for instruction sheet). The participants were asked orally, as well as in written instructions, to write about an occasion in which they had helped someone who was in trouble or someone else had helped them. Half of the group wrote in English first and the other half wrote in Swedish first. They were given approximately half an hour in which to complete the task with quarter of an hour’s break with refreshments in between. The subjects have each received a certificate for their participation in the study. The names assigned the subjects in the analyses are naturally fictitious. Attention has not been paid to gender differences in this study.

4.3. Analyses

ScriptLog consists of three main modules: a module for implementing a text-writing task, a recording module for logging the writing activity, and an analysis module allowing the researcher/teacher/user to play back the recording in real time and to perform a number of analyses on the process. The quantitative analyses in this study are based on the statistics generated by ScriptLog.

4.3.1. Statistical analyses:

All of the statistical analyses were carried out in the SPSS statistics package.

- For the comparisons between L1 and FL writing paired sample t-tests were performed.
- Correlation tests were conducted by means of Pearson’s bi-variate correlation tests.
- A control for interaction effects between order and language was also done by means of two-way Anovas. No interaction effects were found and order will thus not be mentioned in the results.

4.3.2. Potential completion points:

These locations are called ‘potential’ because they are constantly open to alteration and adjustment by the writer. These points are defined with regard to their location at a number of levels:

- character completion points (XCP) – after a morpheme or non-morpheme, but at a point which does not constitute a word in that context (i.e., word-internal);
- word completion points (WCP) – after a recognisable word, but at a point, which does not constitute a phrase (i.e., phrase-internal);
intermediate constituent completion points (ICP) – after a nominal, verbal, adverbial or adjectival group, which is recognisable as a complete phrase (also after non-nuclear elements such as disjuncts and conjuncts), but at a point which does not constitute a clause (i.e., clause-internal);

clause completion points (CCP) – after a clause unit, but which is not marked as a sentence;

sentence completion points (SCP) – after a unit marked as a complete sentence.

(Spelman Miller, 2006, pg 133)

4.3.3. Framing Devices

Spelman Miller defines a framing device as “an element or structure (single word, phrase or clause) which serves to establish the starting point of the message at the clause/sentence level. A framing device may be used in one of a number of ways, either in constituting the topic itself, or in preparing the scene for the introduction of the topic” (Spelman Miller, 2006, pg. 136). There are five types of framing devices in the framework proposed by KSM fulfilling these functions:

• subject theme – consists of elements that are both grammatical subject and initial sentence constituent, e.g.:
  1) This hypothesis …  2) This is obvious …

• adjunct theme/complement theme – (often sentence-initial adverbials) – e.g.:
  1) Around puberty, …
  2) With reference to …

• non-experiential theme – e.g.:
  1) To start with, …
  2) Moving on to …

• empty theme (it, what and existential there structures) – e.g.:
  1) There are debates …
  2) What is needed …

• thematic structure (e.g., finite/non-finite clauses) – e.g.,
  1) If the teacher knows …
  2) Since I was a child …
5. Results

5.1. Quantitative Data:

5.1.1. Process data

As can be seen in Figure 2, there is a difference between the mean number of tokens in the linear texts in English as opposed to the Swedish texts.

Paired sample t-tests revealed a significant difference between L1 and FL writing with regard to the number of tokens in the linear texts \((t(20)=5.601, p=0.000)\). This result reveals a quantitative difference in the writing process.

Figure 3 and Figure 4, below, illustrate the ratio of pausing time to total time in English and Swedish. A paired sample t-test revealed a significant difference between total pausing time and total time \((t(20)=-4.577, p=0.000)\). No effect was found for the total time spent on the tasks in the two languages. Thus, although the amount of time spent on composing the texts in Swedish and in English was not significantly different, the productivity was. Pausing time was greater in FL and tokens were fewer. It is reasonable to conclude that cognitive load was greater in FL than in L1.
Figure 3: Ratio of pausing time to total time (calculated on the basis of pauses 2 seconds and longer). 1=L1, 2=FL

Figure 4: Ratio of pausing time (calculated on the basis of pauses that last for 5 seconds and longer).
Controls were done for interaction effects between order and language by means of two-way Anovas but no interaction effects were found.

5.1.2. Product data
With regard to the number of tokens in the final texts (excluding one outlier) the result was also significant (t(19)=5.070, p=0.000). However length of texts perhaps tells us more about the process than it does about the product. A long text is not necessarily better. A more comprehensive study of product goes beyond the scope of this paper. Nevertheless, an attempt has been made to assess the four texts that were studied in more detail.

5.2. The Case Studies: Subject Alec and Subject Dennis
The principal aims of this study are to investigate the similarities and differences between writing in L1 and writing in FL, and to investigate whether or not there are ‘writing profiles’ that remain consistent across languages. Another research question is whether or not the analysis tools used for this study enable us to gain an understanding of these issues. Does the use of these tools further a comprehension of the dynamics of writing in L1 and FL? The focus here has been on pauses and their relation to potential completion points and framing devices. The pauses studied here have been those that are longer than 5 seconds (a preliminary impressionist study of the shorter pauses shows that the majority are to be found at local levels). However it can nonetheless be of interest to look at the frequency of these shorter pauses. The subjects chosen for these analyses will be called Alec and Dennis. They both wrote about a situation in which they had been saved by somebody else or they themselves had saved someone (as did all the other participants). However, Dennis wrote two different stories which can perhaps give us some clues as to what remains consistent in spite of the two different stories and languages.
First, some figures:

<table>
<thead>
<tr>
<th></th>
<th>Alec, L1</th>
<th>Alec, FL</th>
<th>Dennis, L1</th>
<th>Dennis, FL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokens in final text</td>
<td>2957</td>
<td>2071</td>
<td>1990</td>
<td>1762</td>
</tr>
<tr>
<td>Tokens in linear text</td>
<td>3257</td>
<td>2275</td>
<td>3781</td>
<td>3461</td>
</tr>
<tr>
<td>Total time</td>
<td>29.12 m</td>
<td>22.29 min</td>
<td>31.49 min</td>
<td>32.25 min</td>
</tr>
<tr>
<td>Pause time, 5s</td>
<td>4 M</td>
<td>2.3 min</td>
<td>7.28 min</td>
<td>8.31 min</td>
</tr>
<tr>
<td>No. of pauses, 2-5s</td>
<td>92</td>
<td>71</td>
<td>61</td>
<td>72</td>
</tr>
<tr>
<td>No. of pauses, 5-15s</td>
<td>30</td>
<td>16</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>No. of pauses &gt;15s</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 1: Tokens, times, and pause frequencies in Alec’s and Dennis’ L1 and FL texts respectively.

As we can see from the table above Alec and Dennis both wrote more in L1 than in FL. This is consistent with the other findings in the study. They are thus representative of the group in this regard. However, neither the frequency nor the length of pauses in Alec’s writing is in accordance with the predictions of outcome. The analysis of potential completion points as well as some of Alec’s answers in the questionnaire may provide us with a clue as to what Alec is paying attention to during these pauses.

<table>
<thead>
<tr>
<th></th>
<th>Alec, L1</th>
<th>Alec, FL</th>
<th>Dennis, L1</th>
<th>Dennis, FL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pauses, 5-15s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCP</td>
<td>15</td>
<td>2</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>CCP</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ICP</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>WCP</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>XCP</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Pauses, &gt;15s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCP</td>
<td>1</td>
<td>-</td>
<td>5-6</td>
<td>3</td>
</tr>
<tr>
<td>CCP</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
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<tr>
<td>ICP</td>
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<td>1</td>
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<tr>
<td>WCP</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>XCP</td>
<td>-</td>
<td>-</td>
<td>1-2</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2: The correlation of potential completion points and pauses 5-15 s, and >15 s.
From the figures in Table 2 we can see that Alec paused more at Sentence Completion Points in L1 than he did in FL (15 times in Swedish and only twice in English). This gives us an indication that he paused proportionately more frequently at higher levels, i.e. topic management, than at lower levels such as Word Completion Points in L1 than he did in FL. This finding is more consistent with the predictions of outcome than if we were only to look at pausing times and frequencies. The prediction referred to here is that FL writing is more cognitively demanding thus leaving less working memory capacity available for higher level activity. It was also interesting to note that Potential Completion Points more often changed into other completion points in Alec’s English text than in his Swedish text. His transition times were also longer in English. This could be due to not being able to find the keys as easily, although this phenomenon was not commonly found among the others. It could also be due to hesitancy, spelling difficulties, etc.

Let us now go on to studying the four texts individually.

5.2.1. Subject: Alec:
(See Appendices for both the linear and the final edited texts)

Alec wrote the Swedish text first. He enjoyed participating in the experiment. He wrote that he found thinking about what to write took longer than thinking about how to write it. He wrote the Swedish text first and, judging by the long pauses in the beginning, he seemed to take some time to plan.

Alec finds it easy to write in English and he reads a lot of books in English.

As mentioned in the method section, I have chosen to focus on pauses longer than 5 seconds and will give examples of pauses correlating with framing devices that either introduce a new topic or that contribute to the development of a topic:

Starting with the Swedish text and looking at the location of pauses that are longer than 5s, we can trace the way in which Alec has primarily used the Subject framing device at sentence completion points to introduce and develop the topic. For example:

1. 

   `<START>`<0.24.093> `VAD har hänt, sa du`<BACKSPACE7>?<BACKSPACE9>`sa du hade hänt?`

Alec started with a long pause (24 seconds) in which he was presumably planning what to write (a general assumption based, among other factors, on what he answered in the
questionnaire). He then wrote the first sentence which he proceeded to change by deleting, so instead of writing “VAD har hänt?” (WHAT happened?) he wrote “VAD sa du hade hänt?” (WHAT did you say had happened?)

He reformulated the first question with a more effective formulation as a result. (In the English text he does not have this long pause, at least not after he has pressed the start button), but rather writes the question straight away. The next long pause is after the first sentence, at a sentence completion point and introducing a new topic using a subject theme framing device. I have chosen to add the two pauses and see them as one since there is only a backspacing of the return between them which he then altered after the next pause.

<!--0.07.016--> Er chef har blivit tagen som gisslan...

The next long pause, also made up of two consecutive pauses is also at a sentence completion point and further elaborates the topic using the subject framing device and a question:

<!--0.06.422--> <!--0.09.844--> <BACKSPACE> <RETURN>- Och nä<BACKSPACE2> hur lång tid kommer det att ta?

After some less important information, shorter pauses, backspaces, mouse events and deletions there is an answer to the question and a closure of the dialogue: First there is a conceptual change in the emerging text from “about a month” to “about a year”. After the following pause which is at a sentence completion point and which uses a subject framing device, there is a change of topic and paragraph – “I had stopped listening”. This can be interpreted (in accordance with KSM) as awareness of paragraphs, and of the use of framing devices to introduce new topics.

6. <!--0.06.765--> <RETURN><BACKSPACE2> Så om ungefär en månad kanske...<RETURN><0.06.765><BACKSPACE><UP><RIGHT11><DELETE E11> honom<0.05.875><DOWN><BACKSPACE19> ett halvår kanske...

<!--0.05.562--> <RETURN><0.05.562><BACKSPACE> Jag hade slutat lyssna.

Alec continues to give some background information and then, without a pause immediately preceding it, he writes a sentence that gives a new direction:

9. Jag bestämde mig för att ta saken I egna hander. "I decided to take matters into my own hands". He continues to ‘think aloud’:

16. <!--0.06.516--> Vår fabrik hade fått första priset...
Further on, after a long pause at a sentence completion point, before a new paragraph, introducing a new topic with a subject theme framing device: “I had a plan”.

18. i.<0.13.172><RETURN> Jag hade en plan.

Other examples:

20.i. <0.06.734><RETURN>Klockan elva...

21. <0.09.203>När det blivit tyst igen...

Further on once again a sentence completion point, a new topic, but this time introduced using a non-experiential theme framing device: tydligen (apparently).

<0.14.547>Tydligen fanns det en bomb inne i fabriken...

(Apparently there was a bomb inside the factory)

In this case the 'bomb' is the new topic being introduced. After that there are no more pauses that are more than 15 seconds long.

25. <0.06.453>Men att göra oss av med den....

26. <0.06.375>Chefen hade en privat helikopter på taket....

Finally:

30. <0.05.281><MOUSE EVENT>av chefen<0.03.923><END SCRIPTLOG

In the Swedish text a majority of the longer pauses (longer than 5 seconds) were at sentence completion points and nearly all introduced new topics, mostly by using the subject framing device. Two of the longer pauses mark new paragraphs in the final text whereas there is no new paragraph after the long pause before introducing the new topic 'bomb'. There is one new paragraph in the final text that is not preceded by a pause and four new paragraphs that are preceded by pauses longer than 5 seconds. There is a lot of pausing in the dialogue section and after that there are only two pauses longer than 15 seconds. There are no word internal potential completion points (that correspond with pauses longer than 5 seconds). This can be interpreted as Alec having the capacity, in the Swedish text, to overcome the processing constraints of lower level skills such as: transcription and spelling, task- and domain-specific skills, and that he takes strategic steps such as pre-planning (the abundance of pausing in the beginning of the text) (see Torrance & Galbraith, 2006). He seems to be aware of the reader, for example when he writes: “I had stopped listening” and then 'turns to the reader' in order to give the reader some more background information.
In comparison with the reading profiles of Hyönä et al (2002), Alec’s writing profile would correspond to a “topic structure reader”, that is, a “topic structure writer”.

Alec did not seem to have very much trouble writing in English either. This is in conformity with Schoonen et al.’s findings (2003) that L2 “writing proficiency is highly correlated with L1 writing proficiency”, as well as with Cummins’ (1980) theoretical concept of “common underlying proficiency”. Alec also reads a lot in English (see Ransdell et al., 2002, with regard to the relation between reading and writing proficiency). The main difference to be found between the writing processes in Swedish and in English, observed when studying the text in real time, was that some words that Alec seemed to have difficulty finding in English were preceded by longer pauses (in this case longer than 10 seconds) e.g. a rival company, and Police Chief. At these points it seems that Alec had difficulties at the lexical level (this becomes apparent when observing the emerging text in real time). However, the pause before the Police Chief also preceded the introduction of a new topic. The pausing pattern is different in the English version. Apart from these pauses mentioned above there are no other pauses that are longer than five seconds to be found at sentence completion points. Hence there are no pauses longer than 5 seconds to be found before sentences marking new paragraphs in the final edited text. There are three long pauses, adding up to 35 seconds at the end of the text, combined with many mouse events. The distribution of pauses in the two texts suggests a pattern of planning in the beginning of the Swedish text and revision at the end of the English text, as well as some backspacing, shorter pauses and deletions around the middle. This partly recursive pattern seems to be somewhere in between the linear processing and the non-linear processing proposed by Ransdell et al (2002). In this analysis it is not seen as ‘knowledge transforming’ (see Bereiter & Scardamalia, 1987) in the full sense of the term, but then again it is a narrative text and the author seems to be clear about what he wants to write after the initial period of planning.

In the English text the only two pauses that are longer than 15 seconds are the following: The first one is to be found at a word completion point, introducing a new topic, the “Police Chief”:

6. Well, first the Police Chief has to come back from his vacation on the moon, and then he will have to recruit a new police force...
The second long pause is right at the end of the text before and after a number of mouse events and deletions. One can reasonably conclude that the writer is reading through the text and revising at this point.

25. \textit{and got a huge bonus.} (See linear text in Appendix)

After this section a few more mouse events, returns and deletions are recorded before the end button is pressed.

One notable difference between the Swedish and the English texts of this writer is the impression one gets when observing the emerging text in real time of a lower level of fluency in English.

This writer seems to have some slight difficulties with accessing English words and possibly also with accessing the correct spelling, although this is not visible in the final edited text. As mentioned earlier, and as can be seen in the appendix, the texts are very similar in Swedish and English (although the English text is quite a lot shorter) but the pausing pattern is not. There are far more pauses at the sentence and paragraph level in Swedish and at the word level in English. However the overall writing pattern seems to be quite similar in LI and FL. In both of the texts there is a section in the middle with considerable backspacing, deletions and mouse events. The writing of the Swedish text seems to involve more planning in the beginning (working out what to write) whereas the writing of the English text seems to involve more revision at the end. This can be interpreted as a greater need to check the language in English. Less planning time in the beginning in the English text is probably due to the fact that Alec already knew what to write. Alec's writing in the Swedish text also seems to be more recursive and less linear than it does in the English text. In spite of the two texts being so similar in the final versions there seem nonetheless to be many differences in the actual processes.
5.2.2. Subject Dennis:

(See Appendix for both the linear and the final edited texts)

Dennis wrote the English text first.

Some answers from the questionnaire:

Dennis enjoyed participating in the experiment. Planning what to write took the longest time. He found writing the English text relatively easy. In answer to the questions on what was the most difficult or the easiest in the Swedish and the English text respectively he wrote that the ‘story’ was the most difficult in both cases. In the Swedish text spelling was the easiest and writing the ending was the easiest in the English text. If he couldn’t find the right word in English he used another or other words. He thinks English is easy and he often uses English on the computer, when watching TV or films, and in connection with music, but he does not read very much in English.

General observations:

Dennis writes coherently in both the Swedish and the English texts. He seems to have an awareness of the reader, i.e. of the decontextualized nature of the writing situation. He introduces new topics so that the reader will be familiar with them and gives enough descriptive background for the reader to understand. He has an introductory and concluding paragraph in both texts. This writer answered in the questionnaire that the most difficult part of writing both texts and which also took the longest time was working out what to write. In both of the texts he wrote a lot, backspaced, deleted, and paused a lot before writing the sentence that would be the first sentence in the final edited text. So it seems that he uses a planning strategy in both languages.

In the English text Dennis wrote many sentences that were deleted, reformulated etc. and finally wrote the first sentence of the final edited text after 8 minutes. To introduce the whole text Dennis uses what KSM would call the non-experiential theme category of framing device:

11. <BACKSPACE2>?!<0.11.203><BACKSPACE44><UP><LEFT>
   <RIGHT><DOWN><RIGHT<LEFT><RIGHT<LEFT6> again
   <BACKSPACE5><RIGHT26>

12. <RETURN2>The whole thing starde<BACKSPACE2>ted
One can assume by studying the linear text or the emerging text in real time that he was trying to find a way to write an introductory sentence and paragraph. In the Swedish text Dennis wrote a lot of nonsense for the first two and a half minutes and then, after half a minute more he wrote his first sentence which came quite easily. My interpretation of this time spent initially is that Dennis found it difficult to find the appropriate formulation in English whereas this came quite quickly and easily to him in Swedish once he had set his mind to it. There are also marked differences between the two texts. This may or may not depend largely on the different nature of the stories.

The English text seems either to be based on personal experience or perhaps the experience of a peer. Out of the 43 pauses that are longer than 5 seconds, there are only 13 that occur at potential sentence completion points and of these there are only 7 that are realized by subject framing devices. For example:

18. \(<0.05.531>They\ offered\ me\ and\ Ben\ drugs\ and\ ....</0.05.531>\n
And:

33. \(<0.05.343>I\ became\ a\ big\ help\ for\ him\ ....</0.05.343>\n
The framing device most commonly used by Dennis in the English text is that of the adjunct theme/complement theme i.e. new topics are introduced by sentence initial adverbials – mostly adverbials of time such as: After a few weeks …, One day… etc. (see KSM's definition of framing devices). Even negations of previous topics are introduced in this way, for example in the following sequence where a potential word completion point changes into a sentence completion point:

20. qa took the \(<0.42.313><BACKSPACE11>oSo\ she</0.42.313>\n
\(<0.05.953><BACKSPACE7><RETURN2>The\ next\ day\...\ we\ didn't\ say\ a\ word\ about\ the\ drugs.\ It\ seemed\ like\ it\ never\ happened...,\ etc.</0.05.953>\n
There does not seem to be a direct and general correlation between these framing devices and pauses of any particular length or type. However, these framing devices are almost always preceded or followed, or both, by a number of backspaces, mouse events or else pauses. In some cases by all three of these, suggesting that a certain amount of both revision and planning takes place at these locations.

As was the case with the first sentence in the final text, the last sentence also starts with a non-experiential theme:

35. …..<0.07.641>This\ whole\ story\ really\ put\ our\ friendship\ to\ a\ test.</0.07.641>
According to Witte and Cherry’s (1986) analysis of framing strategies, Dennis uses the narrative framing strategy in the English text—“… Description of place (is) subordinated to narrative of events, experiences; e.g., first we went into the front hallway…” (pg131).

The Swedish text is about a car accident. Everything happens very quickly.
In the Swedish text there are very few nouns or pronouns that do not refer to or revolve around the first person singular, “I”, the third person singular “he”, or “the road”, ”the car” or “the hospital”.
There are three paragraphs – the first one starts with – “Plötsligt stod en man mitt i vägen…”. (“All of a sudden there was a man standing in the middle of the road”). The second paragraph starts with – “Jag sprang så snabbt jag kunde…”. (“I ran as fast as I could…). The last paragraph starts with – ”Jag satte mig i förarsätet”…”. (I sat down in the driver’s seat…”).
In the paragraph starting with “a man”, there are six instances of man or pronouns referring to man, and four instances of “I” or pronouns referring to I. In the paragraphs starting with “I” there are altogether twenty three instances of “I” or referrals to the same, as opposed to fifteen referrals to “a man”.
The first sentence in the final edited text is preceded by (supposedly) a period of thinking and planning, while writing, pausing, and so forth, that lasts for 2.58 minutes and is then realized with the use of non-experiential theme:

2. Plötsligt stod en man mitt i vägen.

This is then followed by a pause at a sentence completion point and a subject theme - In the Swedish text the framing device primarily used is that of the subject theme – e.g.:

Jag tryckte så hart jag kunde på gasp men han var för nära.

The first sentence of the second paragraph is preceded by a pause at a sentence completion point and is realized in the text using a subject framing device:

Så jag spa rang så snabbt jag kunde ti till min movi biltelefon fanns.
The first sentence of the final paragraph is also preceded by a long pause at a sentence completion point and then realized by using a subject framing device:

\(<\text{RETURN}2>1.06.953\text{ BACKSPACE}2\text{ RETURN}2>\text{jag körde}\\
\text{t_BACKSPACE7_h_BACKSPACE6 satte mig io BACKSPACE2 förar}\\
\text{BACKSPACE6 sätet och 0.09.344_BACKSPACE4 och backade}\\
bild_BACKSPACE12\text{körde bilden tillbaka BACKSPACE}>, \text{BACKSPACE2 mot}\\
mannen, så nära det fi_BACKSPACE2 gick, och BACKSPACE4_innan jag}\\
\text{BACKSPACE12}.

Another example of a correlation between a sentence completion point and subject framing device is to be found in the middle of the second paragraph:

\(<0.06.047>\text{jag va_BACKSPACE3 blav BACKSPACE3 ebv}\\
>\text{BACKSPACE3 b_BACKSPACE2 v tb_BACKSPACE2 vungen att}\\
\text{This is followed by a long pause, a lot of deletions and a new start, again at a sentence completion point and a subject framing device:}\\
\(<0.20.203>\text{BACKSPACE21 m_BACKSPACE2 jag gick fg_BACKSPACE2 fram till}\\
mannen\text{BACKSPACE7 den medvetslösa menn_BACKSPACE3 annen för att kolla}\\
efter telefon\text{BACKSPACE}, men inte heller han hade någon}\\
\text{BACKSPACE2 p_BACKSPACE på sig}.

All in all there are eight cases of correlation between a sentence completion point and a subject framing device, which is by far the dominant pattern in this text.

There are very many deletions, a lot of them being due to typing errors.

There are three main areas of “planning, monitoring, revision, editing”, or whatever it is that occurs when there are long pauses, deletions and mouse events. We cannot be completely sure which process is involved. A tentative conclusion might be drawn, however, and that is that this writer has a recursive writing pattern in L1.

There is a long section in the middle of the text where Dennis is possibly planning or monitoring and where there are plenty of backspaces, deletions, pauses and nonsense words.

These two texts do not confirm the prediction that writers will tend to use the subject framing device to a larger extent in their FL than in L1 (see KSM, 2006, pg.146). On the contrary, I found the opposite to be true. However, this is just a sample and by no means representative, not necessarily even representative of this individual since the texts had quite a different character.
The styles are very different in the Swedish and English texts, but in both cases they seem appropriate to the topic. In the Swedish text everything happens very quickly and as such there is a predominance of verbs and adverbs.

As has been mentioned earlier, Dennis took a long time to get started in both of the texts, writing nonsense, backspacing, deleting, etc. However this procedure was quite a bit shorter in the Swedish text and was not carried out in the same way as in the English text. In the English text it seemed more like he was trying to get it right whereas in the Swedish text maybe he was thinking about the text but writing anything – like swear words etc. He did this for 2.58 minutes before he wrote the sentence that turned out to be the first sentence in the final edited text.

6. Discussion and Conclusions:

Have we learnt any more about the relationship between writing in L1 and FL and were the tools we used to analyze the texts sufficient? Let us first take a look at these results in relation to the research questions:

6.1. What are the differences/similarities with regard to the writing process, between L1 and FL writing?

As is apparent in previous studies (see for example, KSM, 2006; Lindgren, 2005; Thorson, 2000; Stevenson, 2005), the task of producing text seems to be both cognitively more effortful and slower in FL than in L1. This is also shown in the present study. As predicted, there were fewer tokens in the linear texts in FL than in L1. This difference was statistically significant (see t-test results in the previous section). Our case studies of Alec and Dennis show that they were representative of this pattern.

The ratio of pausing time to total time was greater in the English texts than in the Swedish texts (this may be interpreted as lower production and lower fluency). This finding was also statistically significant and confirms a prediction of outcome of this study as well as the predictions and findings of several other studies. However, in this regard, Alec was not representative. He paused proportionately more when writing the Swedish text than when writing the English text. It seems that in his case order might have had an effect. He wrote the Swedish text first and then used exactly the same story for the English text.

It was difficult to discern, by way of the quantitative data, whether or not more attention was given to lower level concerns, such as spelling etc. when writing in English
(FL) than in Swedish (L1). This is where an extensive qualitative study of a much larger group of participants would allow us to arrive at a more generalizable conclusion with regard to similarities/differences between FL and L1 writing. However, in the case of Alec, the longer transition times and the intuitive conclusion arrived at while observing the process in real time seems to show that there was slightly less fluency when writing the English text than there was in the writing of the Swedish text. Alec also paused proportionately far more frequently at the word completion point in the English text (8 out of 18 pauses longer than 5 seconds) than he did in the Swedish text (8 out of 31 pauses longer than 5 seconds). There were no character completion points in the Swedish text. In Dennis’ case, pauses at the word level were proportionately more frequent in the English text (11 out of 43) than in the Swedish text (4 out of 28). However, this is not a significant difference and can depend on a number of factors.

There were also differences in the use of framing devices in L1 and FL. In the case of Alec the subject frame device was by far the most commonly used framing device in the Swedish text. Alec’s texts were very similar in Swedish and English and so was the use of framing devices, although the correlation of pauses was not. Alec had more pauses at the potential word completion point in the English text than he did in the Swedish text, and far more pauses at the sentence completion point in Swedish than in English).

In the case of Dennis there were longer pauses at sentence completion points and subject theme framing devices in the Swedish text. In the English text the adjunct theme was the most commonly used framing device while the non-experiential theme was used in the beginning and the end and was then preceded by a period of backspacing, mouse events, deletions, etc., but not as extensively directly by pauses.

The quantitative results of this study when analyzed across the whole group are consistent with the predictions of outcome, both with regard to the number of tokens in the linear texts and with regard to the ratio of pause time to total time. There was no significant difference between the total time spent for the different tasks. These results reasonably seem to indicate that the writing process in FL is more effortful than in L1, and that productivity and fluency were greater, in general, in the L1 texts than in the FL texts. The fact that there was no significant difference in the total time spent consolidates the prediction that writing in a foreign language is a cognitively taxing task compared to writing in L1. As has been mentioned previously, there were no interaction effects to be found between order and
language, and therefore the order in which the tasks were performed will not be taken into account.

6.2. Are there individual writing profiles and, if so, do they remain consistent in FL writing? If not, in what way do they change?

The correlation tests performed by means of Pearson’s bi-variate analyses showed statistic significance with regard to tokens in the linear texts and the final texts, as well as with regard to the pausing ratio. That is, there was a correlation in the within-subjects analyses in Swedish and English. This indicates that there is some consistency in the writing profiles in L1 and FL.

The qualitative results, on the other hand, were far more difficult to define and analyze. The analysis of potential completion points is by no means a simple and clear-cut task, particularly with regard to pauses at intermediate (i.e. phrase external/clause internal) vs. word completion points (i.e. phrase internal). It was also difficult to determine the type of completion point due to the numerous backspaces, deletions and mouse events preceding the pause.

I found it interesting to take a closer look at Dennis’ texts even though the actual texts were so different. This difference was the result of a mistake on my part. I was asked whether or not the stories had to be exactly the same and I said that they did not as long as they were about the same the story in Swedish and in English. Rather I said that as long as the story was about the same theme. However, even though Dennis’s texts were so different one could nonetheless see a similarity in the writing profile – with apparently (although we may never know for sure) “planning” in the beginning, some extra “revision and monitoring” in the middle and “editing” at the end. Both texts were divided into three paragraphs with an introductory paragraph in the beginning and a conclusive paragraph at the end – he used a narrative structure to be seen in the final product and, in the process a “knowledge-transforming” pattern of writing. In both of the texts, Dennis seemed to be aware of the reader. This could be seen in his way of introducing new topics or events and then elaborating further once the reader had been introduced.

Alec also seemed to be aware of his reader and formed coherent texts both in English and in Swedish.
6.3. In general, is there a difference between the final edited L1 texts, on the one hand, and the FL texts on the other hand?

The prediction that there would be fewer tokens in the final edited texts in English than in Swedish was also borne out by the data. Considering the ratio of pausing time to total time it is a logical consequence that there would be fewer tokens in the final text in English than in Swedish. However, a shorter text in itself does not necessarily mean that it is a ‘poorer’ text. When it comes to the evaluation of ‘good’ vs. ‘poor’ writing as well as ‘skilled’ vs. ‘unskilled writers’, there is undoubtedly a lack of consensus. In Sweden the most recent curriculum that has been drawn up by The Board of Education (Skolverket) for compulsory education is called LPO’94 and it entered into effect in 1994. LPO’94 states the following expected learning outcomes with regard to writing in English for ninth graders:

Pupils should
- be able to ask for and provide information in writing, as well as relate and describe something,
- be able to choose and use aids when reading texts, writing and in other language activities,
- be able, on their own and together with others, to plan and carry out work tasks, as well as draw conclusions from their work.

(See: http://www.skolverket.se)

The main focus in the subject of English is on all-round communicative skills. These goals are rather vague, but the assessment criteria for the grades equivalent to ‘Pass’, ‘Very good’ and ‘Excellent’ can be found on the following webpage: http://www.ped.gu.se/sol/ep9ex.htm.

Although the focus of this paper has been on the process rather than on the product, an attempt has been made at a general assessment of the texts written in English. As in the observations of Pennington and So (1993), it is indeed necessary for process and product to be separately assessed in order to gain a comprehensive measure of writing ability. A tentative assessment has been made of the four texts used for the case studies in accordance with the criteria put forward by the Board of Education. However, since these assessments were not very performed in a very precise manner I prefer not to include them here. Suffice it to say that both of the subjects would at least pass in English in the ninth grade in Sweden. With regard to the number of tokens in the final texts both Alec and Dennis were representative of the group at large. Alec had 2071 tokens in the English text and 2957 tokens...
in the Swedish text while Dennis had 1762 tokens in the English, and 1990 tokens in the Swedish text.

6.4. Can the analysis tools used in the case studies (potential completion points and framing devices) enable us to gain an understanding of individual writing profiles and their consistency (or lack thereof) when writing in English as a foreign language?

I found these tools to be a step in the right direction (enabling a combination of a functional topic analysis of pauses). It was also interesting to study the correlation of pauses and topic introduction in this way. However, as I have mentioned earlier it was difficult to be precise and I am not sure that the amount of work required reaps a comparable benefit. But perhaps this is a personal preference. The combination of these tools with the quantitative analyses, although providing more information than either type of analysis on their own, does not either really tell us what the writers are doing when they are pausing. Their off-line activity may not have anything whatsoever to do with the task at hand. A combination of these tools with, for example, stimulated recall or collaboration with peers might prove more fruitful. The analyses of profiles performed by van Waes et al. (2003) and Hyönä et al. (2002) were based on cluster analyses which I think could also be a productive route to take. However there would be a need for a far more extensive and comprehensive data collection than was the case in this study in order for a cluster analysis to be applicable.

Findings from the analyses of individual writing episodes i.e. potential completion points and framing devices, may be of interest and use to the individual writer and teacher, even though these results may not be statistically significant. This information can be useful as a point of departure for learner-tutor as well as learner-learner discussions in a collaborative learning environment. They may help lead to an awareness of difficulties, use of strategies, potential aids etc. Above all, these insights can raise the awareness among writers of the processes of writing in general and foreign language writing in particular. According to Spelman Miller (2000b), the interpretation of location from a topic related perspective, gives an added dimension to the determination of which elements in the text have the function of establishing or developing the topic of the discourse. However, there need to be many more studies of this kind in order to be able to draw any general conclusions regarding writing
profiles and L1 and FL. On the individual level if one finds that a writer frequently pauses at sentence completion points then one should give instructional support with regard to the activity of planning. For example, if the writer develops an awareness of the notion of the conceptual paragraph this is likely to alleviate sentence-level planning pressures and, in so doing, help to increase fluency and productivity (ibid). Frequent pauses at potential character or word completion points indicates difficulties with low level concerns such as spelling, etc.

According to KSM (2006), some features of Hyland’s scheme (in KSM, 2006) overlap or crosscut some of the framing devices proposed by the former. These features are for example, “hedging (it may be that), emphatics (it is obvious, definitely, of course), relational markers (it is seen that), and person markers (we report)” (KSM, 2006, pg. 155). On the other hand, focus on these features would lead the analysis of data in the direction of a discussion of ‘the different social practices of disciplinary communities in constructing knowledge’ (Hyland, pg. 121 in KSM 2006, pg. 155). Thus although these features seem very similar to framing devices they nevertheless lead to results of a very different, though not uncomplimentary nature. The focus of the study of framing devices is on topic introduction and continuation. Awareness of such constructions might promote among learners an awareness of the impact of such devices on the progression and coherence of the whole text.

7. Future Research

This study has focused on the cognitive processes of writing, and the socio-cultural and emotional processes have not been considered. Such a concentration on one specific area can be valuable from a point of view of research but if one is to take the process one step further and think of ways in which one can support these cognitive processes then one needs to take an inclusive rather than an exclusive perspective.

Since the study of writing is such a complex field there are bound to be a number of contradictory studies, results and conclusions. However, one view that the majority of theorists seem to have in common is that writing is indeed a complex, time-consuming, cognitively demanding activity. Writing in a foreign language is naturally even more complex. Another aspect which seems to be relatively uncontroversial is that this demanding activity can be facilitated by learning some skills, such as typing/handwriting, spelling, lexical retrieval etc. (Schoonen et al., 2003; Snellings et al., 2002). Finding the best way in which to enhance efficient lexical retrieval, however seems to be a more complex
achievement. Some training of strategies designed to help specific individuals should prove fruitful. Individually adapted training of key skills is also likely to improve students’ motivation and self-efficacy. By studying various patterns of writing behaviour in L1 and FL with the use of, for example, ScriptLog, KSM’s analysis tools and stimulated recall, one might be able to discern the individuals’ strengths and weaknesses and, in so doing, be able to strengthen them where they are weak and help them become aware of their strengths. Spelman Miller has recently (2007) co-authored a study together with Lindgren, Sullivan, and Lindgren. In this study the tool for visualization and data mining, GIS, has been used together with framing devices to show how one can “…support analysis of the interaction of cognitive processes during writing focusing on the individual writer, differences between writers or the writing processes in general” (pg.83). An interesting idea to pursue would be the use of multilingual online dictionaries and their effect on the process of FL writing. A discourse analysis of the final product with the intention of studying lexical cohesion and lexical diversity could also provide valuable information. It would also be interesting to look at the research being done with imaging techniques to learn about encoding and retrieval structures (see Wagner et al., 1999: When Encoding Yields Remembering: Insights from Event-Related Neuroimaging).

Another idea for future research would be the development or application of existing software in order to help students (ca. 15-18 years old) overcome difficulties that become apparent when using keystroke logging and so develop fluency in FL or L2 writing.

If one were to specify, for example, five different problem areas in foreign language writing one could then perhaps develop interactive educative programs for foreign language learning. Essential to these programs would, I believe, be the issue of motivation and self-efficacy. These are vital components in all learning situations. The notion of self-efficacy can be defined as people’s beliefs that they are capable of producing designated levels of performance for a specific task (see Bandura, 1997). The development of self-efficacy in writing has been studied by, amongst others, Braaksma, Rijlaarsdam and Van den Bergh (2002); Pajares and Valiante (2007); Torrance, Fidalgo, and Garcia (2007); and, Zimmerman and Kitsantas (2002).

Finally, perhaps this research focusing on the interaction between cognitive processes and text may give us some idea of how to connect with research being done from a more socio-contextual perspective.
In one of the studies in Lindgren’s thesis, a learning method, peer-based intervention (PBI), is used as a tool for reflection and discussion based on the keystroke logged data. “PBI includes writers’ observations of how they undertook a writing task as well as observation of how a peer solved the same task” (Lindgren, 2005, pg. 32). The results show that students who are guided to discuss with peers and reflect on their own and other’s work become more self-confident and more aware of both linguistic and extra-linguistic features. Proficiency in self-assessment and reflection on one’s own work is intrinsic in all successful learning.

Finally, when working with this paper I have become more and more convinced that in order to support academic development at all levels (i.e. also among children with learning difficulties, or rather, especially among children with learning difficulties, or, as in this case, among students writing in a foreign language), one needs to take an inclusive rather than an exclusive approach. That is, one needs to take into account socio-cultural as well as cognitive factors. An approach that I believe would provide the right kind of support would be that of observational learning, with emulation, and regular and constructive feedback.
References:


APPENDIX 1

Deltagande i undersökningen om skrivprocessen 8/3, humanistlabbet, SOL-centrum, Lunds Universitet:

Hej!


**Det är helt frivilligt, du får vara anonym, och du får avbryta när som helst.**

Du kommer att få intyg efteråt om att du har varit med i undersökningen.

Om du vill vara med behöver jag få tillbaka den ifyllda talongen så snart som möjligt. Du kan lämna den till xxx (senast mån 5/3).

TACK!

Christina Nilsson-Posada
Lund, 2007-02-20

Jag har fått information om att:

– jag får vara anonym

– det är frivilligt att delta

– jag får avbryta när som helst

  – att materialet kommer att användas i Christinas uppsats och som underlag för vidare forskning

Namn:______________________________________________________________________

Underskrift:_________________________________________________________________

Ort och datum:_______________________________________________________________
Hej!
Jag heter Christina Nilsson-Posada och jag läser lingvistik vid Lunds Universitet. Jag skall skriva en magisteruppsats om skrivprocessen och är då framförallt intresserad av att studera skillnaderna mellan processen på det första språket och på ett främmande språk (i det här fallet, svenska och engelska).
Jag ber nu om Er tillåtelse att genomföra en undersökning med Er son/dotter (under förutsättning att han/hon själv är intresserad av att delta).
Eleverna kommer att få skriva en text på svenska och en text på engelska. Undersökningen äger rum i datorsalen i humanistlaboratoriet på SOL-centrum (Språk- och litteraturcentrum vid Lunds Universitet) 2007-03-08.

**OBS! Detta är frivilligt för eleverna och uppgifterna skall behandlas anonymt.**

Min förhoppning är naturligtvis att så många som möjligt vill vara med i studien.
Jag vore tacksam om ni kunde fylla in den medföljande talongen och lämna den till xxx senast måndag 5/3. Om Ni har några frågor är Ni välkomna att ta kontakt med mig eller med min handledare, Åsa Wengelin:

Christina Nilsson-Posada
046-24 84 41 (hem eller fax)
0730-33 23 19 (mobil)
nilsson_posada@msn.com

Åsa Wengelin, Ph.D.
Inst. för Lingvistik, Lunds Universitet
046-222 8449, 046-222 4210 (fax)
Asa.Wengelin@ling.lu.se

Tack på förhand!
Med vänliga hälsningar,

Christina Nilsson-Posada
LUND, 2007-02-20
Instruktioner:

På skärmen framför dig finns en ruta som ser ut ungefär så här:

Fyll i det som fattas, tryck på OK och VÄNTA! Läs sedan vidare nedanför den här rutan.

![Diagram](Image)

**OBS!** Fyll i här också **Se** (utan mellanrum)

Uppgiften:


Tryck på Startknappen — OBS! BARA EN GÅNG! Nu kan du börja med att tänka och skriva. När du känner dig helt färdig klicka på Endknappen — OBS! BARA EN GÅNG!

**Tack, och lycka till!**  

*Christina*
- VAD sa du hade hänt? sa jag till mannen som stod framför ingången till strumpfabriken där jag arbetade.

- Er chef har blivit tagen som gisslan av er konkurrent Raggsockor AB och är inne i fabriken tillsammans med deras utsända specialtrupper. Ingen får komma in i fabriken förrän polisen har kommit och löst situationen.
- Och hur lång tid kommer det att ta? frågade en annan arbetare.
- Jag vet inte riktigt. Först måste polischefen komma tillbaka från sin semester på månen och sedan måste han anställa nya poliser, eftersom de förra blev avskedade efter att ha vunnit över honom i fia med knuff. Så om ungefär ett halvår kanske...


Jag kom dock snart på en ny idé. Vår fabrik hade fått förstapriset i Fabriksgalan i kategorin "Flest soptunnor på baksidan" med 145 st. Jag kom på att jag kunde stapla soptunnorna i en pyramid och på så sätt komma upp. Mot alla förväntningar lyckades det och jag var inne i fabriken.


Appendix 4b

Alec, linear file, Swedish, showing pauses longer than 5seconds


2. <RETURN>-<0.07.016> Er chef har blivit tagen som giss<BACKSPACE>blivit tagen som gissan av er konkurren<BACKSPACE>nt och är <BACKSPACE>i Raggs<BACKSPACE>ockor AB och är <BACKSPACE>r inne i fabriken tillsammans med <BACKSPACE>ders utsända specialkommando<BACKSPACE>cialtrupper.

3. A<BACKSPACE>Ingen får komma in i fabriken förrän polisen har kommit och löst situationen.

4. <0.06.422> <0.09.844><BACKSPACE><RETURN>- Och när<BACKSPACE>hur lång tid kommer det att ta? frågade en annan arbetare.

5. <RETURN>- Jag vet inte riktigt. Först måste polischefen komma tillbaka från sin semester på månen och sedan måste han anställa nya poliser, eftersom<BACKSPACE>om de förra <0.05.188>blev avskedade efter att ha vunnit över polischefen i fläk med knuff.

6. <RETURN><BACKSPACE> Så om ungefär en månad kanske...<RETURN><0.06.765><UP><RIGHT11><DELETE11>honom
ett halvår kanske...<RETURN>- <RETURN>Jag hade slutat lyssna.


i. Jag avlägsnade mig från gruppen med upprörda<br>arbetare och smög runt till baksidan av<br>fabriken.

10. En som jag hade väntat mig var bakdörren låst, men<br>jag såg ett öppet fönster på tredje våningen.

11. I trots<br>s mot mitt<br>allt mitt<br>sunt<br>klättrade<br>blivit tvättad med såpa,<br>gav jag snart<br>uu<br>pp.<br>omöjligt.

12. Ö<br>omöjligt.

13. Tydligen var att klättra omöjligt.

14. <RETURN><BR>

15. S Jag kom dock snart på en ny idé.<br>

16. Vår fabrik hade fått förstapriset i Fabriksgalan i kategorin "Flest soptunnor på baksidan" med 145 st.

17. Jag kom på att jag kunde stapla soptunnorna i en pyram<BR><BR>omöjligt.

18. Mot alla förväntningar lyckades det och jag var inne i fabriken.

i. Jag hade en plan.

19. När jag hade varit på ansökningsintervjuer på hos olika företagen hade jag la att hos Raggsokor AB hade alla anställda haft kaffe rast vid exakt samma tidpunkt, klockan elva.
20. Nu var klockan fe<BACKSPACE>arton minuter över et<BACKSPACE>tio och jag gömde mig i en låda strumpor som paketerats för sändning till affären för att vänta.

   i.  Klockan elva hörde jag en tredje<MOUSE EVENT>assistent<MOUSE EVENT>pflera personer gå mot fikarummet.


22. Jag förklarade snabbt situationen för chefen, som berättade att vi behövde göra en sak till innan vi tog oss ut.

23. Tydligen fanns det en bomb inne i fabriken, som vi behövde hitta och göra oss av med på något sätt.


   i.  Efter en stunds tänkande kom jag på en lösning.


27. Sedan flög vi ut över den närliggande sjön och släppte bomben där.

28. När Specialspecialtrupperna från Raggsockor AB upptäckte att varken chefen eller bomben fanns kvar blev de så snopna att de kvar för<BACKSPACE>vann de snabbt från landet för att unvika vreden från chefens as chef.

29. Som tack för min hjälp blev jag befordrad inte bara till tredje, utan till andra maskinassistent.

30. av chefen
Appendix 4c

Alec, final edited text, English

-WHAT did you say had happened? I almost screamed at the man standing before the doors of the sock factory where I worked.
- Your boss has been taken hostage by a rival company and is being held inside the factory. Nobody is allowed inside before the police arrives and solves this situation.
- And how long will that take? asked one of the other workers.
- He fired the old one after he lost to one of the policemen in tic-tac-toe.

I had stopped listening. Why today of all days? Today was the day when I was going to be promoted to third sock counter's assistant, and since the police force was the most incompetent in the country, the estimate of half a year would most likely be far below what it really would take. I decided that it was time for me to do something myself. I sneaked around to the other side of the factory. Exactly as I had thought, the back door was locked, but I saw an open window on the third floor. I tried climbing up to it, but since the wall was made of a new kind of perfectly flat, non-stick plastic, I couldn't even get up a centimetre. So climbing was out of the question.

Then, I had another idea. Our factory had a huge number of big garbage cans standing behind it. I managed to put them in a pile which looked almost, but not entirely, unlike a pyramid. I managed to climb it up to the open window. At last I was inside.

I had a plan. I had read in a newspaper article about the rival factory that they always had their coffee break at the exact time of 11.00. Now my watch showed 10.18 and I hid behind a sock-making machine to wait.

At exactly eleven o'clock I heard steps going towards the lunch room. When the steps had faded I ran quickly to the boss's room and we escaped in the boss's personal helicopter which stood parked on the roof. For my help, I got promoted not to third, but second sock counter's assistant, and got a huge bonus.
Appendix 4d

Alec, linear file, English, showing pauses longer than 5 seconds

1. <START>Wha<BACKSPACE>-WHAT did you say had happened?

2. i almost <BACKSPACE>i almost screamed at the man standing before the factory doors.

3. <RETURN>- Your boss has been taken hostage by <0.10.531>a rival company<MOUSE EVENT>doors of the sock factory <BACKSPACE>0.05.375>ory where I worked.<MOUSE EVENT>0.05.375>, <BACKSPACE>2 and i sb<BACKSPACE>2s being held inside the factory.

4. No one is allowed inside before the police arrives and so<BACKSPACE>2 solves this siti<BACKSPACE>uation.

5. <RETURN>- And how long will that take? asked one of the other workers.

6. <RETURN> <BACKSPACE>- Well, first the <0.24.109>Police Chief has to come back from his vacation on the moon, and then he will have to recruit a new police force <BACKSPACE>0.05.968><BACKSPACE>...<RETURN>. Why does he need a new police force<LEFT30><HOME><DELETE><BACKSPACE>-<END>?<RETURN>- He fired the old i<BACKSPACE>one sft<BACKSPACE>after he lost to one of the policemen in tic-tac <BACKSPACE>-<MOUSE EVENT><BACKSPACE>-<RETURN><MOUSE EVENT><RETURN>I had stopped listening.

7. Why today of all days?

8. Today i <BACKSPACE>2I was going to be promoted to third machin<0.06.875>9>machin ass<LEFT4>e<END>istant.

9. W<BACKSPACE><MOUSE EVENT> <MOUSE EVENT>was the day when a<BACKSPACE>i <BACKSPACE><MOUSE EVENT><0.05.375><MOUSE EVENT>sock counter's<MOUSE EVENT>s?<DOWN><0.05.000><RIGHT16><BACKSPACE>2, and since the police force was the most incompetent in<LEFT><RIGHT> the country, the estim<0.06.468><MOUSE EVENT><MOUSE EVENT> So <0.06.281>in about half a year...<MOUSE EVENT><BACKSPACE><RETURN><MOUSE EVENT>ate of half a year would most likel<LEFT5><BACKSPACE><END>y be <0.06.422>far below what it really would take.

10. I decided that it was time for me to do something myself.

11. <RETURN>I sneaked around to<BACKSPACE>2to the <0.07.015>other side of the factory.

12. Exactly as I had thought, the back door was locked, but I saw an open window on the third floor.
13. I tried climbing up to it, but since the wall was made of perfectly flat plaster, I couldn't even get up a centimeter.

14. Then, I had another idea.

15. Our factory had a huge number of big garbage cans standing around behind the pile, which almost, but not quite, looked like a pyramid.

16. I managed to climb it up to the open window.

17. At last I was inside.

18. For my help, I got promoted to third, but second Sok coi's assistant.

19. Then, I had another idea.

20. Our factory had a huge number of big garbage cans standing around behind the pile, which almost, but not quite, looked like a pyramid.

21. I thinned out a pyramid big garbage cans standing around behind the pile.

22. At exactly eleven o'clock I heard steps going towards the lunch room.

23. When the steps had faded I ran quickly to the boss's room and we escaped in the boss's personal helicopter which stood parked on the roof.

24. I had read in a newspaper article about the rival factory that they always had their coffee break at the exactly time of 11.00.

25. Now my watch showed 10.18 and I had behind a sock-making machine to wait. At exactly eleven o'clock I heard steps going towards the lunch room.

26. For my help, I got promoted to third, but second Sok coi's assistant.
Appendix 5a

Final edited text: Dennis, English text first:

The whole thing started the second year of upper secondary school. My best friend Ben, who's the same age as me, started being very strange. At first, we met some new friends at a party, called Allan and Paul. We started to hang around a little bit with our new friends, doing different things together. But one day when we met to see a movie at the local cinema, something seemed wrong with both Allan and Paul. They offered me and Ben drugs and I realized that both Allan and Paul were high. I didn't want any of the drugs, but Ben said he wanted to.

The next day, we didn't say a word about the drugs. It seemed like it never happened. Allan and Paul tried to call us a few times, but we didn't answer, and they must have realized we no longer wanted to be friends with them. As time went by, Ben got more and more strange. He started by missing a few lessons in school, and nobody knew where he was. Not even me, his best friend. After a few weeks, he almost never appeared in school and we didn't spend much time together. When I tried to confront him about everything, he just wouldn't listen.

One day he came to me, late in the evening, and told me. He was using drugs. I was shocked. Apparently he still had contact with Allan and Paul, from whom he bought the drugs. He told me he realized that he needed help, but he was too afraid to talk to his parents. I became a big help for him the next few weeks when I helped him with his drug problem. When he had been drug-free for a couple of weeks he was strong enough to tell his parents, and then we all helped him. Now he has been drug-free for a whole year and he has good grades. This whole story really put our friendship on a test, but it worked out fine and now it's much stronger.

Appendix 5b

Dennis, linear text, English, showing pauses longer than 5 seconds

1. The whole thing started sometime on the fourth grade.
2. I liked my friend.
3. Ben, my beloved neighbour, came to my house.
4. <BACKSPACE43>ghappern<BACKSPACE2>nen
   <BACKSPACE14>LOL<0.12.266><BACKSPACE3>SSometing<BACKSPACE3>fhinfg<
   BACKSPACE2>g was wrong.
5. <BACKSPACE2>g<LEFT20>I could feel
   <RIGHT2><LEFT>g<LEFT>heid <RIGHT2>.<RIGHT2>
6. My <BACKSPACE3>Ben, my neihbour<BACKSPACE4>ghnour and
   <BACKSPACE9>bour and frien<BACKSPACE7>d, had a cols look<BACKSPACE7>ld looks<
   BACKSPACE3> on his face.
7. <0.13.922>I asked him again<UP><0.07.703><RIGHT83><LEFT>
   nand it was really obvious that he was hiding somethin<BACKSPACE3>g for me.
8. <BACKSPACE6>rom me<RIGHT32>; .<BACKSPACE3>:<RETURN>- Do
tou<BACKSPACE11>n<BACKSPACE17>"Do you use drugs"?" i <BACKSPACE2>I asked him again.
9. <0.06.234> <0.32.484>He denied it, but I couls <BACKSPACE2>d see
   v1<BACKSPACE2>clesrl y <BACKSPACE24>but i c<BACKSPACE3>U<
   BACKSPACE2>I morst<BACKSPACE2>st <BACKSPACE12> but I knwew he was
   lying <BACKSPACE2>g. "PLzzzzZZZ<BACKSPACE12> "plz omg"<ai<BACKSPACE2>I said., <BACKSPACE3>.<BACKSPACE3>.<BACKSPACE3>
10. WHAT THE FXXX DO U WANT=!
11. <BACKSPACE2>???!!<0.11.203><BACKSPACE44><UP><LEFT><RIGHT><RIGH
   T><LEFT><RIGHT><LEFT26>again<BACKSPACE5><RIGHT26>
12. <RETURN2>The whole thing starde<BACKSPACE2>ted
   <0.06.266>hth<BACKSPACE3>thw <BACKSPACE2>e second yerar of upper
   seconday school.
13. My <0.06.640>best friend Ben, the same <BACKSPACE9>who was the
   same age as me, star<BACKSPACE4>started beeing very
   stranf<BACKSPACE2>ge.
14. At first, we met some <0.08.250>new fciriens <BACKSPACE2>ds at a
   party, abd <BACKSPACE3>nf <BACKSPACE2>d<BACKSPACE2>
   <0.07.563><0.06.890><LEFT><MOUSE EVENT><BACKSPACE4>
is<BACKSPACE3>"s <MOUSE EVENT><0.06.625><MOUSE EVENT><LEFT> I
   guess Ben had more in<BACKSPACE2>incommen <BACKSPACE3>.
15. Becn <BACKSPACE3>v ligf<BACKSPACE2>ked them more
   tgen<BACKSPACE3>hen me, and me star<BACKSPACE4>44> We started to
   hang around a little bit with our new friend s ,<BACKSPACE2>,
   doing different stuff together.
16. <0.11.578>But Ben <BACKSPACE8>I
gel<BACKSPACE3>flel<BACKSPACE3>elt li<BACKSPACE2>that these
person s were kindof offd a ' craza mafakkas.

17. plek pklz <0.08.094>plek <BACKSPACE4>pkplz <0.08.094>plek <BACKSPACE4>pklz <0.08.094>plek 

thinf gs <RIGHT10>But one day t I got the feeling og that these newpwo eole ple wasnät 't 

plek pk ple wasnät 't really one datrty, after we had seen a movie, One one one one one 

ogf the <0.06.937>One, called Allan and Paul. when me met to see a movie at the local cinema, 

thinf g seem <BACKSPACE2>t really one <BACKSPACE2>emed wriong with both Allan and 

<0.05.609>Paul.

18. They offered me and Gustav drugs and i. I realized that they were high both Allan and Paul er 

and we were high. I didn't wan't t aby any of the drugs, even though the any, but Ben said he wanted to. 

19. qI took the <0.42.313>So she 

20. The next day, we didnn's t say a word about the drugs. It was like it never happened d. 

21. We didn't stopped calling WA Allan and Paul. but so they stoppe 

n and calling us. 

22. We didn't stopped calling WA Allan and Paul. and we no longer were friends with them. 

23. We UP MOUSE EVENT and we no longer were friends with them. 

24. tryied to call us some a few times but we didn'r 

times but we didn'r 

they must have realızed we anted to be fr 

The time went by, but and Becn
As time went by, Ben got more and more stang range. He started by missing a few lessons in school, and nobody knew where he was, not even me, his best friend. After a few weeks, he almost never appeared in school and we almots trst never togetther. When i tried to confront him about everything, he just wouldn't listen. On One day, he came to me. He was using drugs. Apparentely he still had contact with Allan and Paul, from which me bought drugs. He came to me. After he tried it that time at the first time, he was totally stuc. Though i was Thw He tolsd me he realizxes d the at he needen but he was to afraid to talk to his parentsts. I became a big help for him the next few weeks as iwhen I helped him with his drug-problem. When he had been drug-free for a couple of twweeks he was stng enough to tell his pareannts, and then we all helpend him. No we he has been drug-free for a whole year and has no problem school is had goos d grades.


Appendix 5d

Dennis, linear text, Swedish, showing pauses 5 seconds and longer

1. <START>Jag heter Kalle<BACKSPACE15>Morgonsole <BACKSPACE3>len låg tåt över de små <BACKSPACE4>xxxx ssssss<BACKSPACE3>VISA PO<BACKSPACE23>xxxx xxxxxxxx!<0.08.828><BACKSPACE15>1czl <BACKSPACE3>z<BACKSPACE>lz 0mg fxxxc3fr<BACKSPACE2>r <BACKSPACE5>kkl<BACKSPACE2>k3r P1Zz <BACKSPACE5>p1Z<BACKSPACE5>p1Z<BACKSPACE>zz st0e<BACKSPACE>p<BACKSPACE>P<BACKSPACE4>St0p sp3<BACKSPACE>4a<BACKSPACE>mm1nf<BACKSPACE>g m3<0.21.391><BACKSPACE6>Massa text massa tezt<BACKSPACE24><PASTE><PASTE>hej <LEFT4><COPY><BACKSPACE><PASTE>v<BACKSPACE><PASTE><BACKSPACE11><PASTE><PASTE> <PASTE><PASTE><PASTE><PASTE><PASTE><PASTE><PASTE><PASTE><PASTE><PASTE>0.07.047><BACKSPACE3>Mina föräldrar skulle skijs<BACKSPACE30>Plötsligt låg at<BACKSPACE2>tanten <0.10.140><BACKSPACE7>han där på gatan, men ingen <BACKSPACE42>

2. Plötli<BACKSPACE2>sligt stod en man mitt i vägen.

3. <0.17.218>Jag tryckte så hårt jag kunge<BACKSPACE2>de på gasp<BACKSPACE4>bl<BACKSPACE>romspef<BACKSPACE>dalen men han var för nära.
4. Det hördes en dov duns och mannen slägdes
   
5. En prins vkom fram och äggade min mamma.

6. <0.08.421>Tio meyNär bilen öntligen stannade låg mannen tio meter bakom mig.

7. Jag satt chockade kvar i bilen innan verkligheten kom.


9. Han låg på gatan, medvelt tslös med <0.05.188>Ag på gatan, <0.07.203>och av blod rinnade från huvudet och ena benen.<0.07.203>och <0.05.188>

10. Jag Jag spa rang så snabbt jag kunde till
min bil för d'r är min mobilbiltelefon fanns.

11. Mern en n <BACKSPACE>
s l il, där jag visste att min mobil hade min mobiltelefon.

12. Men inte fanns den MEn en där fanns inf hur mycket jag än letade hittade jag den inte.


14. Ja! Panik blandart t med ångest fick mig att olla Pxxxxxx Oxxxxx.

15. Paniks fylld ko såg kollade jag ut över den öf da lane e e landsvägen, utan något spår av andra r n dra människot.


17. p på sig.

18. Jag fårtod rstod att jag var tvungen att lyfta in köra mannen till

20. Sedan lyfte jag så försiktigt jag kunde upp mannen och han fic klifga. Där han fic fick han i bilen.


22. Jag körde så snabbt jag kunde mot det närma sjukhuset påbjudde själva sjukhusen, om han skulle ha någon chans att överleva.
Mannen låg och sov ;)

Mannen gav ifrån sig små tysta stående nora n, vilket bar ett bra tecken, för då visste jag i alla fall att han levde.

Han s rum var lol.

min var fga ganska lol.

Efyer ter mouse event, två mil ivåg en stund närmat de kom jag in i staden och hittade sjukhuset.

Jag sprangf in och hämtade hjälp läkare som kom ut med en bår att lägga mannen på.

Vi När jag fälde med in och hjälpte de till att hitta ringam me annens familj, medan läkarna kollade hur det var om mannen behöve de
op mannens tillstånd.

Familgen fe jen, bbeståd estående av fru och två barn, kom snabbt till sjukhuset.

Det vi och jag föll klarade vad som hade hänt.

32. Operationen gick väldigt bra och mannen fick inga beståndande skador.

33. Familjen he ge D Det var ingens fel att. Krocken ansågs inte vara någons fel, snarade re mannen s än mitt, och jag kom undan hela situationen men d mannens någons fel, jag såf gs som Familjen var oerhört glassa da för att jag ghaad hade hjälp männen.

34. mannen, och det det visade det ansågg det gty s inte vara någrons gel fel fel men och krocken och krocken.

35. Jag kom undan Jag gick t igen till min bil Allt jag fik betala ck betala, a bara vara männens, och jag fick lite pengar för skador på bilen.

36. Allt jag behövde betala var fel parkeringsbötern för felpra arketin ringen utanför sjukhuset.
37. THE END! Snipp snapp <0,11.031> snut <BACKSPACE4> snut, så tog sagan slut.
38. <BACKSPACE> <BACKSPACE2>!
   <SHIFT+BACKSPACE2>y<SHIFT+BACKSPACE>t! <BACKSPACE35>
ENKÅT

Din kod är:

1) Hur tycker du att det var att delta i undersökningen?

1

Väldigt roligt

Väldigt träkigt

2) Vilket av följande tog längst tid?

a) att tänka ut vad du skulle skriva

b) att tänka ut hur du skulle skriva det?

3) Om du svarade (b) på fråga 2, vilket var svårast?

a) att hitta rätt ord

b) att kunna skriva grammatiskt korrekt

c) att kunna stava rätt

d) annat:

4) Hur tycker du att det var att skriva den engelska texten jämfört med den svenska texten?

1

Väldigt lätt

Väldigt svårt

5) Kan du säga vad som var svårast/lättest med den svenska texten?

Svårast:

Lättsamt:

6) Kan du säga vad som var svårast/lättest med den engelska texten?

Svårast:

Lättsamt:
7) Vad gjorde du om du inte visste hur du skulle skriva någonting på engelska?
   a) använde dig av andra ord
   b) formulerade om hela meningan
   b) låt bli att skriva det du ville

8) Tycker du att det är lätt eller svårt med engelska?
   1
   Väldigt lätt  Väldigt svårt

9) Använder du engelska på din fritid?
   1
   Ja, mycket  Nästan inte alls

10) I vilka sammanhang använder du engelska? (Du kan kryssa för flera alternativ)

   ( ) dator
   ( ) TV, film
   ( ) tidningar
   ( ) böcker
   ( ) annat: ____________________________

   Om du kryssade i ( ) framför böcker, hur ofta läser du på engelska?
   1
   Väldigt ofta  Väldigt sällan

11) Skriver du någonsin på engelska på din fritid?

   ( ) ja
   ( ) nej

   Om du svarade ja, vad skriver du?

   ( ) brev  ( ) dikter
   ( ) dagbok  ( ) annat: ____________________________

   tack för dín medverkan!