Alena Rizvanovic

Spelling Correction in Collaborative Writing in English Project Work

Stavningskorrigering i kollaborativt skrivande inom engelskspråkigt projektarbete

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Supervisor / Handledare: Nigel Musk

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Title (svensk översättning)
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Författare
Alena Rizvanovic

Sammanfattning
Summary (in English)

In this study it is argued that spelling correction as a collaborative process benefits students. It is also argued that the correction process is a structured process which means that pupils tend to follow a pattern when it comes to who initiates and who executes the correction. As a teacher student within the subject of English as a foreign language, I find it interesting and useful to know more about spelling correction in collaborative writing and what pedagogical implications it has. Correction and repair from a Conversation Analytical point of view is a phenomenon which has been the main object of investigation for many researchers. I noticed that correction is used a lot in written assignments among the students as well as in conversational contexts. In the literature it is also clear that research about written correction is limited and hard to find. Hence, there was a need to investigate this area in the field of correction and repair.

The process of spelling correction was investigated using conversation analysis and from a sociocultural point of view the pedagogical implications of this process were considered. The study is based on video-recordings of four pairs in an upper secondary school in Sweden within the subject of English as a foreign language. I found that there is a preference for self correction and that the pupils only intervene in the correction process when necessary. I also found correction to be a collaborative process which benefits the construction of knowledge as students scaffold each other during a correction sequence.

Nyckelord
Keywords
Correction, Conversation Analysis, Sociocultural Theory, Collaboration
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1. Introduction
Correction in collaborative writing is a phenomenon which is very useful to know more about, especially for teachers. As a teacher student with English as a foreign language as my subject I found it interesting to investigate how pupils handle spelling errors in English project work and if the collaboration between them is helpful for the purpose of correction. Correction and repair from a Conversation Analytical (CA) point of view is a phenomenon which has been the main object of investigation for many researchers. I noticed that correction is used a lot in written assignments among the pupils as well as in conversational contexts. On the other hand, the research about written correction is limited and hard to find in the literature, which is why it is of interest to investigate this area in the field of correction and repair. In this study the focus was on spelling corrections in particular, since these occurred very often and are an important part of learning to write in a foreign language.

1.1. Aim and Research Questions
The aim was to investigate the process of correcting spelling in collaborative writing in English project work using CA and from a sociocultural point of view consider the pedagogical implications of this process. The research questions I asked were:
- What are the characteristics and categories of correction?
- Is there a connection between the different categories?
- What part does the collaboration process play in relation to correction?

My co-researchers and I video-recorded pupils while they were working together on a project and I used this data to answer these questions. Collections from the data were then made to identify specific characteristics and to create robust categories which could describe pupils spelling correction practices. Transcriptions are used to present the findings and as a basis for discussion. The correction process does have specific stages and these results are confirmed by previous studies. Furthermore, we can see that there is a preference for self correction, which means that pupils tend to give each other the chance to correct themselves before intervening in the correction process. The results also show correction to be a collaborative process which benefits the construction of knowledge as students scaffold each other during a correction sequence.

1.2. Outline
The essay consists of five main chapters. The first is an introduction, in which an overview of the essay and presentation of the research questions is given. The second chapter is a
theoretical section, in which the theoretical frameworks which I have based this essay on are explained. In this section there is also a part which consists of previous studies related to this study. The third chapter is a data and method section, in which I walk the reader through how the data was collected and worked with. The fourth chapter is the actual analysis of data where the results of this study are presented and the fifth deals with a discussion of the data in relation to previous studies and the theoretical frameworks. It also includes a conclusion of my findings. At the end of the essay one can find the reference list and the appendices.

2. Theoretical Framework

In this section I will explain the two different theories which set the framework for this essay: conversation analysis and sociocultural theory. These two supplement each other; conversation analysis provides a means for analyzing the data and the organization of talk-in-interaction while sociocultural theory provides a means for interpreting the data from a pedagogical point of view, focusing on the importance for the collaboration process. I will also give an account of some previous studies which are relevant for the discussion of the results of this study.

2.1. Conversation Analysis

In brief, Conversation Analysis (CA) is the study of talk. However, it includes a lot more than just the study of talk. Here I give a general overview of the basic principles of CA and then explain news receipt, repair, collections and transcriptions.

The aim of CA is to analyze everyday talk in human interaction in situations that are as natural as possible. Hutchby & Wooffitt (2008: 11-12) argue that CA is so much more than just the study of talk even though the term itself excludes any other form of interaction. Hutchby & Wooffitt would rather call it the study of talk-in-interaction, as they believe that the main object of CA is to find out, in settings as natural as possible, how people understand and respond to each other. The responses and reactions from participants in a conversation give the analyst an opportunity to see how people understand each other but also a chance to discover the organizational structure of talk-in-interaction, for example repair. This means that body gestures and facial expressions also can be an important aspect. These are not studied in their own right but as an important part of talk-in-interaction. As described in Hutchby & Wooffitt, the perspective on CA as a study of talk-in-interaction is wider than that of conversation. In this concept of talk-in-interaction, other modes of interaction are often included, for example the interaction through computers, which gives scope to studies about
group assignments among pupils for example, or online interaction on the web as in Markman’s study from 2010 which one can read more about in the previous studies section of the paper.

Hutchby & Wooffitt (2008: 13-14, 41) mention the next-turn proof procedure as one of the most basic tools used in CA. This tool is used in the analysis in this study. Basically this means that when people take turns at speaking, the next turn is a displayed understanding of what was said in a prior turn in the conversation, which otherwise can often be ambiguous. This procedure gives the analyst information about how the prior utterance was interpreted by the other participant. This is an important tool for the analyst and a way to avoid assumptions and personal opinions.

An important conception is the news receipt. It is simply a verbal marker which in some way displays that the producer has received some kind of information or knowledge and that his/her perception has changed in some way (Hutchby & Wooffitt, 2008 p. 122).

Repair is the name of an organized way for handling troubles in achieving a mutual understanding which occur during interaction. Another word which is sometimes used interchangeably with repair in studies of classroom-based second and foreign language learning is correction (Hall 2007:511). Hall (2007: 512-514) argues that from a CA point of view these are not the same. Repair, on the one hand, is a wide and general concept which includes all kinds of trouble sources even troubles with misunderstandings, ambiguous pronouns or mishearings. Anything that threatens the participant’s mutual understanding can be considered a source of trouble in the discussion of repair. Schegloff (2000:208) argues that since a repair procedure can only supersede any ongoing conversation to deal with the current trouble source, it indicates that the repair phenomenon is an organized interaction. Since repair is used to establish a mutual understanding it is an important phenomenon for people to be able to continue the interaction on the same premises in both verbal and written interaction. Hall (2007:512-514) goes on to argue that correction, on the other hand, is a type of repair (a tool) which deals with fixing an error. This correction could be replacing one word with another or adjusting a word morphologically.

In CA, one important tool is making transcriptions of collected data. The data itself can be some type of audio or video recordings and then a transcription is made to reproduce the recorded material in written form, as a representation of the data. Transcriptions serve as means of reference so that the analyst can show readers what is happening in a sequence along with the interpretation of it. Despite making transcriptions it is important to bear in mind that it is the recordings that are the actual data and that even these are a reproduction of
a specific social occurrence (Hutchby & Wooffitt 2008:69-70). According to Jenks (2011:11-12) there are two different approaches to transcription. He calls them open and closed transcripts. An open transcript is when the analyst transcribes in detail the actual talk and interaction as it unfolds in the recordings. The analyst is not looking for a particular phenomenon and all features are equally important. A closed transcript on the other hand is when an analyst is looking for a particular idea or phenomenon and transcribes these parts only when encountered in the data. In this study, a closed transcription approach was used since the object of investigation was decided before the detailed transcriptions were made. However, since this study is about corrections in writing I have supplemented the basic transcription conventions for talk with additional symbols which represent typing and erasing. In the method section of this essay I explain more closely the conventions used in the transcriptions in this study.

Building collections is a useful method in CA. According to Hutchby & Wooffitt (2008:89-90) there are three different stages CA research goes through. The first is to identify an interesting phenomenon in the data (correction processes for example) and then find some examples of this. It is important to have in mind that the data is not always approached with a specific question in mind. It is common for conversation analysts to approach the data more open mindedly to any phenomenon that can be found. Secondly one describes one of these examples in detail (order, signs etc.). The third step is to build a collection. In this step one goes back to the data and to see whether one can find other examples that can be described the same way. If one can find patterns, a robust description is beginning to form. By doing this and refining the description along the way, a pattern can be detected. The purpose of this technique is to create formal descriptions of large collections of data, in which all examples of the same phenomenon can be illustrated through a couple of archetypical examples. In that way the researcher can illustrate his/her findings through patterns that have been found in the collections.

2.2. Sociocultural Theory

In addition to CA, some aspects of a sociocultural perspective are used to discuss the findings in this study. Here I give a general overview of the basic principles of sociocultural theory and then explain scaffolding and zone of proximal development.

Sociocultural theory was first developed by Lev Vygotsky in the 1920’s and 1930’s. After his death, his work was suppressed many years but was introduced again in the 1960’s (John-Steiner & Mahn (1996:191-192). The theory was at that time a new perspective on
learning. The basic principle of this theory is that learning is mediated with the help of tools: both physical and symbolic artifacts. People use computers for example as a physical means but also their language and pictures for example as symbolic means. They integrate these artifacts into thinking, which helps them develop higher mental capacities such as problem solving and learning in different cultural contexts (Lantolf 2000:1-2). Lantolf (1994:418-419) explains Vygosky’s view of symbolic tools, which empower people to organize different mental processes such as planning, evaluation and problem solving to mention a few. Firstly people carry out mental tasks under the guidance of a representative of the culture or someone with more experience concerning the specific task. The guide is initially almost completely responsible for organizing the task. Over time, however, people increase their responsibility to ultimately be able to carry out the task themselves. John-Steiner & Mahn (1996:192) state that every activity in human development is situated in social interaction but is not limited by it. The authors claim that “when beginning an activity, learners depend on others with more experience. Over time they take on increasing responsibility for their own learning and participation in joint activity” (John-Steiner & Mahn 1996:192).

In a sociocultural context, the kind of guidance mentioned above is referred to as scaffolding. Scaffolding emerges when something happens in the frame of a planned task. There are two steps for a teacher and a learner to take in order to achieve scaffolding. As described by van Lier (2004:162), firstly there are structures set up in a safe and familiar context with access to guidance. Secondly, both parties look for opportunities to work and process the task and eventually through this process hand over/take over the responsibility. Lantolf & Thorne (2006:282) have a different perspective on scaffolding. They argue that it does not have to include an expert-novice interaction but instead it can be among equally capable peers, in which case the participants have different parts of the knowledge needed to solve a problem and so they scaffold each other and mutually construct assistance.

Vygotsky as described by Lantolf (2000:17) argued that the zone of proximal development (ZPD) is the difference between what a person can achieve on her own and what can be achieved when this person is working with support from someone else in an expert-novice relationship. Van Lier (2004:156-158,162) argues that there should be a wider definition of the ZPD which consists of four different processes. People learn by scaffolding (an expert helps a novice within the ZPD), by teaching (clarifying one’s own thoughts in order to explain to a novice), in interaction with equal peers (where none of the participants has an answer but in collaboration they achieve progress) and lastly through inner resources (self-access, process knowledge and experience). John-Steiner & Mahn (1996:192) share this
definition of development as they argue that cultural development is not limited by social interaction.

2.3. Previous Studies

Cekaite’s (2009:320, 337) investigation concerns correction on screen with a computer software spell checker as an aid. Her study is based on a sociocultural theory of learning and uses a Conversation Analytic approach to illustrate what meaning-making practices the pupils engage in when they are given technological tools, and how they use these tools in collaboration. The study was carried out among Swedish 8th grade pupils as they worked in pairs during an English-as-a-second-language class. The difference between my study and Cekaite’s study is that in her study a spell checker was activated on the computer and was used as an aid by the students in the correction process. She found that the procedure of correction was “shaped as a multipartite routine-like sequence” and that it included different steps like: an identification of a trouble source, an effectuation of the correction and a confirmation of some kind.

Cekaite (2009:336) also found that the spell checker said just enough to indicate to the pupils that something was wrong but not too much so as to reveal everything, which provided a space for the students to collaborate and together find a solution which both students were satisfied with. It was also concluded that there were some limitations to the spell checker. To avoid a passive attitude among pupils in relation to the program it is necessary to discuss the weaknesses of the software and raise critical awareness together with the pupils.

Storch (2005: 153, 166-167) made a study about collaborative writing and came to the conclusion that collaborative writing gave positive results for the final product. She believes that from a social constructivism perspective, collaboration should be encouraged because knowledge is co-constructed in group work. Her findings also confirm that the students’ attitudes (through qualitative interviews) towards collaboration are mostly positive since they consider that they learn more by discussing and correcting each other. The students who were working in pairs also produced better but shorter texts than the students who worked individually.

Storch (2005:165) also mentions collective scaffolding where the students together (instead of student-teacher) combine their linguistic resources and together manage to form a text that is grammatically accurate. Although Storch’s study is not based on a CA approach, I have chosen to include it here, since she brings up important aspects of the collaboration.
process which are important for the repair and correction concept, particularly from a pedagogical point of view.

Hall (2007:513-515) investigated the concepts of repair and correction in relation to CA and second and foreign language learning. What she found was that these concepts differ depending on the type of theoretical focus. In CA, repair is used to create mutual understanding among participants. Any trouble source or difficulty that threatens understanding can be considered a repairable. Correction, on the other hand, is a mechanism within the concept of repair which is used to fix errors in a turn. Hall argues that even if a repair can involve the correction of a trouble source, it does not have to do so since repair can be much more than that; it is also used where there are no actual errors to be corrected. In CA the concepts of repair and correction therefore differ in meaning.

Correction and repair in instructional purposes in second or foreign language learning is treated differently than in CA. Hall (2007:515-516) claims that there are two different bodies of research in this area. Both concern corrective feedback: one with its roots in the interaction hypothesis (interaction between a proficient language user and a novice language learner facilitates the language acquisition by drawing the learner’s attention to what he/she needs to learn in order to get a complete knowledge of the target language’s linguistic forms) and one with its roots in discourse analysis. In both strands of research the focus is on how a teacher or a more proficient target language user steers the attention of the learner to errors in his/her language production. Hall claims that in this type of research the concept correction refers to a specific kind of corrective feedback such as repetitions and prompts. Even though the term repair is less used in this kind of research, when it appears it is used in the same way as correction. Last but not least Hall investigated how these two concepts, correction and repair, are used in studies which practice CA to study second language learning (SLA). She concludes that it is important for researchers that are using CA in SLA to be aware of the distinction between these two concepts. She argues that analysts should make a distinction between instructional correction and CA repair, which should therefore be referred to as “co-operating organizations” that are both needed to achieve learning in classrooms (Hall 2007: 522-523).

Markman (2010:220-224) carried out a study about conversational repair in computer-mediated team meetings, which is relevant to my study, as it has a CA framework but also includes written repair. What she wanted to show was how repair is used as a tool for creating norms in virtual team meetings. The data came from a case study of conversation in virtual team meetings, where Markman studied five university students. Their activity was recorded
by computer software and the chat logs were saved. She detected that self-initiated self-repair was the most frequent repair strategy, and that this form of repair was a way to settle their interactional norms as a group. What she means by settling interactional norms is that a communicative environment is established. Since they did not have the possibility to use other communicative resources such as body language they used repair for trouble sources that would normally not even be considered as such, to establish a relaxed environment where they showed that mistakes could be made but also fixed. Even though conversational repair in computer-mediated team meetings was the main aim of the study it still provides a general understanding of written repair characteristics in computer-chat interactions.

3. Data and Method
In this section the process and method of gathering the data as well as the process of analyzing the data will be explained.

3.1. Data Collection and Context
This is a project in the subject of English that took place in the second year of an upper secondary school in Sweden during the autumn of 2012. My co-researchers, Helena Honti, Nathalie Wigardt and I worked with two different classes and we had two pairs in each class which we video-recorded and who constitute the subjects of this study.

Before we started video-recording we had to take into account some ethical considerations. First we handed out a letter of consent to all the pupils in both classes, which was signed by the pupils and handed in. The letter was created to address the four ethical principles established by the Swedish Research Council (2002): information, usage of the data, confidentiality and consent. Firstly, the letter informed the pupils about what the purpose of the investigation was, who was in charge of the investigation, the task and that there would be recordings. Secondly, we assured them that the data would be used for research only. Thirdly, we assured them that they were going to be completely anonymous and fourthly, we gave them the information that it was voluntary and that they could cancel their participation whenever they wished to do so. At the bottom they signed if they wanted to participate in the investigation (appendix II). Secondly we asked the pairs we video-recorded to make up false names in order to maintain their anonymity. We also changed the names on all the papers that were handed in by the pupils.

In the next step, the teacher was video-recorded giving the instructions about the project to the whole class. Then we recorded four pairs (two of the pairs were girls and two were
boys), two from each of the two classes we worked with. The recordings took place in two separate small rooms at the school. We recorded during four lessons from 30-90 minutes each time.

To record this activity we used two video cameras for each computer and an additional microphone for each. One of the cameras was located behind the pupils and was zoomed in on the screen. In the first video-recording of one pair the camera was not zoomed in properly on the screen which made it difficult to view what they were doing. This was a problem that we solved in the next recording session. An ongoing problem throughout the video-recordings was that the pupils moved and their heads blocked the view or caused the camera to change focus. We chose not to be in the room with the pupils during the sessions since we noticed in the first recordings that they seemed to be uncomfortable and as a consequence they communicated less. However, we did enter the room from time to time to check the cameras.

The other camera was placed to record the pupils from the side to capture the students, the portable computer and the material they were using for the task (printed instructions, notebook etc.). At the beginning of the first recording session the pupils were asked to sit down (the shortest one next to the side camera) to enable us to put the cameras in the right positions to get a clear picture. During the first two sessions we had a problem with one of the additional microphones. There was a disturbing sound that affected the quality of the recordings. We therefore decided that we did not need an additional microphone for that camera since the sound was good enough without it. In addition to the video-recordings we also collected notes, reports and presentation material from all pairs in the two classes.

3.2. The Task and Focus

The original task was called Famous People created by Nigel Musk and Simone Setterberg. We changed the name to Famous American People, because the ordinary English teachers asked for an American focus on the task, and we changed the lists of people to only famous Americans.

At the top of the instructions there were suggestions of famous people from different categories (e.g. explorers, musicians etc.). There were also links to different webpages with lists of additional suggestions to choose from. They were free to choose whatever search engines or webpages they wanted to use. They were also encouraged to use English at all times, both in writing and speaking. They were also encouraged to take notes and to hand them in at the end of the task. The task continued with questions for them to answer. The first six questions were straight forward ones about facts that did not demand any analyzing. The
last question marked as an extra activity in italics was a question that demanded that the pupils be more analytical. This task resulted in a written report and an oral presentation, which was also video-recorded.

3.3. **Method and Transcription**

I have worked with an inductive approach in my study; first the data was collected and then studied. The first step was to watch the recordings and identify interesting phenomena that could serve as a good point of investigation. After I found a couple of these phenomena, a choice was made on the basis of interest. Since there was not much written about correction in written assignments I chose to focus on that. The next step was to watch the first recording session with the first pair to see how many examples of corrections there were and thereafter decide how much of the recorded material would be enough to show a pattern and make an analysis. This decision led to a log of examples made from the second recording session of all four pairs. The log consisted of the name of the video, the exact time where the phenomenon occurred and a short description of what was happening in that specific sequence. Furthermore, I identified different features which occurred in the examples of the recorded phenomena and divided all the examples that shared the same features into different categories. All corrections included some kind of initiation process and an execution process, and I noticed that these had five different combinations. When I had collected all the examples of correction in the recording sessions I had decided to use, a selection among the examples was made based on the representative characteristics of each category. We had recorded approximately 16 hours and I needed to limit my work so that it would be manageable for the time given to complete it. I found that there were many examples of correction in each recording session and therefore I decided to analyse the second session of each pair. I chose these specific recordings since all the pairs had started writing their assignment in the second recording session.

The next step was to create detailed transcriptions of the representative examples which I had chosen for each category. The transcription conventions from Musk (accepted) have been used to capture different aspects of the interaction. The symbol \( \text{} \) is used to show speech and the symbol \( \text{} \) is used to show computer usage. When somebody types something it is shown with **bold** letters. Furthermore, text in brackets in *italics* is information given by the author to explain something of interest or to capture the scene. Furthermore, pauses are displayed as a number in tenths of a second in brackets. If the pause is shorter than 0.2 seconds, a dot in brackets is used. Square brackets are used as a sign of overlapping talk and
encompassing dollar signs are markers of laughter. Full conventions can be found as appendix I at the end of this essay.

4. Analysis
In this section of the essay there are five main categories of correction to be explained and interpreted. The five main categories are self-initiated self-correction (SI SC), self-initiated other-correction (SI OC), other-initiated self-correction (OI SC), other-initiated other-correction (OI OC) and computer initiated computer correction (CI CC). There is one case which distinguishes itself from the rest which I will present as a category of its own, computer-initiated self-correction (CI SC). Here I have chosen to focus on typos and spelling errors. At the end of this section a table is presented to give an overview of the cases.

4.1. Self-Initiated Self-Correction
Self-initiated self-correction (SI SC) is the most common variety of correction. There are 3 different stages in this kind of correction: a trouble source, initiation process and the actual correction. Out of 37 examples of written correction, 21 cases belong to this category, which would indicate that this is the most common approach to solving a written trouble source. In all cases except four (where there are several attempts) there is only one attempt to correct and it succeeds in all these cases. In this category no news receipt is given after the correction is executed (as is the case in one of the other categories). In this category there are 21 typos and spelling errors. I have chosen to exemplify one example of a spelling error.

All SI SC cases concern typos and spelling errors. All 21 cases of SI SC are some kind of misspelling. When a typo occurs the writer of the trouble source notices this almost instantly in most cases and changes it. In some cases there is a computer correction of some kind, which will be illustrated further on in the paper. One thing which is common during typo cases is saying the word aloud. The writer often says what he/she is writing during the whole writing session. In some cases it works as a reminder of what to write or in some cases he/she says the misspelled word out loud the way he/she has written it to acknowledge the trouble source.

Ex. 1 (Arnold (Ar) & Adolf (Ad) 10.10.2012, 06:58 – 07:05)
1 Ar:  Ø classes
In excerpt 1 above one can see that while typing Arnold also says out loud what he is writing (line 1). However, he says “at” out loud after he has already typed it. In line 3, however, he pronounces it the right way in English saying “at” even though he has spelled it the wrong way in line 1. The wrong spelling is with two “t”s and then it is pronounced in Swedish as “att” [at]. The saying of the word out loud ([æt]) helps him realize that he has spelled it according to the Swedish spelling. The word spelled “att” ([at]) happens to be a Swedish infinitive marker and is pronounced differently from the English “at” ([æt]). Therefore, when he says the English word “at” ([æt]) in line 3 he instantly erases the extra “t” in line 4. As we can see there is no reaction at all from his peer who is sitting next to him the whole time, and he does not notice the mistake. Instead he continues looking at the screen as if nothing has happened.

4.2. Self-Initiated Other-Correction
Self-initiated other-correction (SI OC) is not very common. From the 37 cases found only two fit this category. The common feature for both of these is that a question is asked. The self-initiator finds a trouble source and is insecure about whether the spelling is right and therefore asks his peer for assistance. The peer answers the question, giving the initiator the right answer and then the initiator changes it in the document without commenting on it further. It is also possible for the peer to give the initiator an incorrect answer which they both adopt as “the right answer” but in the excerpts in this paper it happens to be correct. No news receipt is given in this category from either of the two peers. Both cases have to do with a spelling error. There are no typos.

Firstly the boys decide on which word to use in the particular context. Then the trouble source initiator begins writing and notices that he might have compounded the word wrong (though he is not sure), and he decides not to trust what he has written and asks his peer for the right answer by formulating a question which is aimed directly at dealing with the trouble source word. The peer answers the question giving the initiator a direct solution to the trouble source. The initiator deletes the error in the document and writes what his peer tells him.
In excerpt 2 above we see an example of a SI OC case. In lines 1 and 2 both boys are agreeing on using the word “air force” in the context and Syd, who is in charge of the keyboard, starts typing. However, in line 6 he stops at the second word “force” and writes only half of the word. Doubting his own spelling he deletes what he has typed in line 7 and types another variation of the word in line 8, this time spelling it as one word without a space between. This correction sequence is also a part of and an illustration of the SI SC category as there are several loops or attempts. In this particular attempt Syd tries to correct the trouble source himself, but he is not sure how to correct it, which creates a new trouble source. Therefore he begins a new loop and he asks Bruce in line 8 if it is spelled as one word (with “or” indicating a question). At the same time as Bruce is correcting him and giving him the answer to his question, Syd deletes the one word spelling in line 9. In line 11 he writes it as two words since he has now heard the answer from Bruce but he accidently writes the “O” with a capital letter, which the computer changes automatically without Syd noticing at first. Syd goes back to delete it (line 12) but then notices that it has already changed since he does not delete the “O” which was the capital letter and swears and laughs which indicates that he has noticed the change. This is an example of computer correction, which will be clarified further on in CI CC. He finishes off the sequence by filling in the rest of the missing word. We also do not get a news receipt from Bruce in the end, which could be a result of the question as he has given him the right answer and sees that Syd changes it himself.
4.3. Other-Initiated Self-Correction

Other-initiated self-correction (OI SC) is the second largest category of correction. Out of 37 cases, 5 cases belong to this category. In the least complex cases and the most common ones, it begins with a trouble source being detected by the “other” (the peer), followed by an acknowledgement of some kind, and then a correction is executed by the typist and finally some kind of epistemic marker acknowledges the correction. These cases are not restricted to a specific kind of error but rather they consist of different types: three spelling errors and two typos. Although they all follow the same pattern, I will illustrate one error which has to do with spelling.

The example of an OI SC is a simple case. It consists of only one loop and has all the features mentioned above (trouble source, acknowledgement, correction and epistemic marker). This example has to do with a spelling error.

Ex. 3 (Sara (S) & Anna (A) 12.10.2012, 18:21 – 18:29)

1 A: um (. ) cer (0.8) tain (0.2) themes
2 A: cetain themes
3 S: certain ((she stresses the “r")
4 A: oj
5 A: oops
6 A: ((she goes back and adds the “r") [ce]r [tain themes]

In excerpt 3 above we can see that Anna is typing and she creates a trouble source in her typing in line 1. Sara discovers this quickly and says the misspelled word out loud with a stress on the missing letter, the letter “r”, in the next turn in line 2. This is an indication to Anna that there is a trouble source, which causes Anna to make a pause in the typing (line 3). In line 4 Anna acknowledges the error with a news receipt “of” (oops) which is followed by another pause where she finds the error and adds the letter “r” (line 5). As a conclusion Anna pronounces the word again but this time with a stress on the added letter “r” (line 6).

4.4. Other-Initiated Other-Correction

Other-initiated other-correction (OI OC) does not occur as often as the other varieties of self-correction (Self-initiated self-correction and other-initiated self-correction). The process of correction functions like a loop where there is a trouble source, an initiation process, a negotiation or dictation sequence of some kind, which does not solve the original trouble.
source and therefore new attempts follow. From 37 found cases of written correction, only three fit this category, which could be an indication that this kind of intervention is avoided unless necessary. One feature which is found in all the cases of the category OI – OC is that there is more than one attempt to repair the trouble source. The first attempt to carry out the correction is given to the writer of the trouble source, which leads to him/her creating a new trouble source or failing to correct the original trouble source. As a consequence the other initiator can either give another correction opportunity to the trouble source writer or correct the trouble source himself/herself. If another opportunity is given to the trouble source writer and once again he/she fails to carry out a successful correction, the other initiator then steps in and corrects the trouble source himself/herself. In the last part of the correction sequence the writer of the trouble source gives feedback to let the initiator know that he/she has perceived or understood the nature of the correction. Another feature which these have in common is that they are all spelling errors.

4.4.1. Verbal Correction

When talking about “other correction” in written correction, there are two different approaches to solving a trouble source. One approach is the one we see in excerpt 5 where the other initiator takes control of the keyboard and makes the correction. The other approach is that the other initiator identifies the trouble source and dictates the right answer (directly giving the answer) but still lets the trouble source writer make the correction him/herself by erasing and typing the letters. This is illustrated in excerpt 4 below.

Ex. 4 (Bruce (B) & Syd (S) 12.10.2012, 03:45 – 04:02)

```plaintext
1 S:  "uh (.) through his
2 B:  throughout
3   (0.3)
4 S:  throughout yeah that’s what I thought
5   (1.8)
6 S:  ((Syd continues writing)) throughout
7 B:  uhm (0.3) the spelling the spelling is wrong
8   (1.7)
9 S:  ((continues writing the word)) throughout
10 S:  ((realizes what Bruce just said)) throughout
11 B:  you’re missin’ a ’r’ an ’r’ ((the letter “r”))
12   (2.1)
13 S:  ((Syd changes the spelling)) throughout
14 S:  thor
15 B:  no
16 S:  tho th [th] r
17 S:  $hahahaha$
18 S:  $hahahaha yeah$
```
By telling the writer of the trouble source that the spelling is wrong, Bruce has located the
trouble source but also initiated a correction sequence (line 7). This is, however, ambiguous
and can be interpreted in the two following ways: the first interpretation could be that the
beginning of the word is misspelled. The second interpretation could be that the second part
of the word, which would be the –hout in throughout, is misspelled. Syd continues typing the
word in line 9 but then interprets that what he just wrote is wrong and therefore erases only
the second half of the word in line 10. Bruce’s perception is that the first part of the word is
misspelled. When Syd (the trouble source writer) erases the wrong part, Bruce (the initiator)
points out verbally in line 11 that there is an “r” missing so that the writer also locates the
trouble source and then corrects it. Bruce does not pin-point where the trouble source is
exactly, but by giving Syd the letter which is missing he makes it easier for Syd to locate the
trouble source. However, Syd misinterprets this as well. He types the “missing r” in the wrong
place in the word again in line 14. Bruce then gives a negative assessment in line 15
indicating that this has created a new trouble source yet again. Syd deletes and corrects the
new trouble source in line 16, succeeding this time. While correcting the trouble source,
Bruce confirms that this is what he had in mind in line 17. Syd laughs and confirms that he
has understood the change in line 18. The confirmation from the trouble source writer to the
initiator is present in all the cases. However, a confirmation from the initiator is only present
in the case where he is not the one executing the written correction himself as a confirmation
that the peer is doing it right. In this excerpt the other initiator gives the writer of the trouble
source two opportunities to correct the error which indicates that correcting it himself is not
the first priority.

4.4.2. Written Correction

In excerpt 5 below, we can see a failed case of OI SC but also a successful OI OC. The other
initiator gives the writer of the trouble source a chance to correct himself before taking control
of the keyboard. However, when the writer of the trouble source fails at correcting his or her
own mistake and in turn creates a new trouble source, the other initiator takes it a step further.
In the case below Bruce corrects Syd, by locating the trouble source and verbally pointing out
what should be changed. The correction fails because of ambiguity in the initiation process,
and so Bruce (the initiator) tries to point out the new trouble source but this attempt is also
ambiguous and fails a second time. As a result of two failures the initiator then takes control of the keyboard and changes the error himself in a third attempt.

**Ex. 5 (Bruce (B) & Syd (S) 12.10.2012, 06:50 – 07:02)**

1. B: led
2. S: in in
3. S: which led to
4. B: lead to a
5. S: =
6. (1.6)
7. S: big
8. S: bigger
9. B: no no no no
10. S: big
11. B: skip the ‘a’ in lead ((takes over the keyboard))
12. B: lead to a
13. B: that so led
14. S: oh led]
15. B: it’s led yeah

In excerpt 5 above a problem with ambiguity occurs since Syd types “lead to a” in line 3 right before Bruce tells him to “skip the a” in line 4. There are two different interpretations of this action. One could interpret that Bruce is referring to the letter a in the word “lead” or that he is referring to the indefinite article “a”. Bruce’s perception is that the word “lead” is spelled the wrong way as we can see in line 11. However, Syd’s perception is that Bruce is referring to the article and makes a correction in line 5 that becomes a new trouble source, hence creating a new loop. The next attempt from Bruce is to initiate a new correction and he does this by giving a repeated negative assessment in line 9. This is the second attempt to correct the original trouble source but the negative assessment can also be interpreted in two different ways. One could either interpret it as an objection to the elimination of the article in line 5 or as an objection to the newly written word “big” in line 7. Bruce’s perception is that the article should not have been eliminated (as well as not fixing the original problem) while Syd, however, interprets this negative assessment as an objection to the word “big” that he has just typed in line 7, which we can see when he deletes the word “big” in line 10, hence creating yet another trouble source and therefore another loop. In the third attempt Bruce is looking at the screen and when he sees yet another failed attempt he takes control of the keyboard, by pushing Syd’s hands away from the keyboard, and types it the right way, whereas Syd in line 14 lets Bruce know that he has understood by using the epistemic marker “oh”. Bruce in turn confirms Syd’s utterance by once again telling him what he meant in line 15.
4.5. Computer-Initiated Computer-Correction

Computer initiated computer correction (CI CC) is a category which distinguishes itself from the rest. In this category the computer program has the most important role in correcting the trouble source. What happens is that the program detects the trouble source (which consists of a letter being put in the wrong place, a missing capital letter or a capital letter where there should be a lower case letter). Before the typist detects the error, the computer corrects it. When the typist presses the space bar the correction is carried out by itself. Out of the 37 cases, five belong to this category. In most cases the typist does not give a response to the correction, but in one example which we saw above in excerpt 2, the typist actually notices the correction in line 13. However, the typist is not the one who corrects the trouble source since the computer corrects the error before the typist notices it.

In excerpt 6 below the most common type of CI CC is illustrated. Anna is typing notes and says out loud everything she types. There are three cases that follow this pattern in the data collection.

Ex. 6 (Sara (S) & Anna (A) 12.10.2012, 31:12 – 31:18)

1  A: hard (0.6) to (.). co (.). mmuni (.). cate
   A: hard to comunicate
2  (0.8)
   ((computer automatically adds another “m” when Anna presses space on the keyboard)) [com]m[unicate]
3  A: with
   A: with

Anna types and also says out loud what she types in line 1. During the pause in line 2, the computer adds another “m” to the word “communicate” when Anna presses the space bar on the keyboard. As if nothing has happened, she continues typing in line 3 and also saying out loud what she types.

4.6. Computer-Initiated Self-Correction

Computer-initiated self-correction (CI SC) is a case which I chose to give a heading of its own because it differs from the rest of the cases. There is only one case which belongs to this category in the data collection. What characterizes this category is that a red underlining is made by the computer. Since there is only one case one can draw the conclusion that the spelling program on the computer was not switched on or was not available during the rest of
the recordings. Nevertheless, it is an important feature in correction which could be significant for further studies.

In excerpt 7 we can see what impact the red underlining has on the typist and also how the correction attempt is carried out. There is also an example of SI SC here in the first attempt but then it continues with a CI SC attempt.


1  Ad: ♤ personal life ((looking at a Wikipedia page about Chuck Norris))
2  (2.2)
3  Ar: ♤ hmm (1.7) so
4  (10.4) ((scrolling on screen and switching between documents))
5  Ar: ♤ personale life ((he pronounces the e at the end))
6  (2.2)
7  Ar: ☞ pers
8  Ar: ☞ [pers]e
9  Ar: ☞ [personale] e
10 Ad: ♤ oh: ((sighs and looks up at the ceiling stretching his arms))
11 Ar: ☞ life
12 (3.5)
13 Ar: ☞ (goes back and erases the e in personale))
14 Ar: ☞ [personale] e
15 9 Ad: ♤ hrm ((clears his throat))
16  Ar: ☞ (moves the marker to the end of the line and presses enter))

Firstly we see a case of SI SC which is followed by a case of CI SC. The first trouble source appears in line 5 when Arnold writes two “s” instead of one. He notices his mistake immediately and corrects his own trouble source. However, in the same line we can see that he creates a new trouble source which he does not notice. The computer acknowledges the trouble source when Arnold presses enter and underlines the word “personale” in red. Arnold continues writing in line 6 and then in the pause (line 7) he notices the error which the computer has highlighted for him and he goes back to correct the trouble source by deleting the final “e”.

4.7. Overview of Cases

To make it clearer of how many cases there are per category a table was made to display the numbers of cases. The categories are listed the same order in which they are treated in the analysis of this essay.

Table 1. Overview of the Cases
<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI SC</td>
<td>21</td>
</tr>
<tr>
<td>SI OC</td>
<td>2</td>
</tr>
<tr>
<td>OI SC</td>
<td>5</td>
</tr>
<tr>
<td>OI OC</td>
<td>3</td>
</tr>
<tr>
<td>CI CC</td>
<td>5</td>
</tr>
<tr>
<td>CI SC</td>
<td>1</td>
</tr>
</tbody>
</table>

It should be noted that a correction sequence can contain more than one of these categories. The cases which are complex consist of several loops, which means that one loop could be a case of SI SC and another loop could be a case of CI SC like in excerpt 7.

5. Discussion and Conclusion

This study has found that the spelling correction process consists of three main steps: a trouble source, an initiation of some kind and a correction. These are the solid steps in the first four categories which are all initiated and corrected by the participants. However, there are some steps which are particular for specific categories. An epistemic marker (such as the word “yeah” in excerpt 4, line 18), which according to Hutchby & Wooffitt (2008:122) is a display of change in the producer’s understanding, is only present in cases where there is another initiator. It is also present in an exception where the computer corrects the trouble source, but since that was the case in only one example one can draw the conclusion that it is usually not acknowledged. Cekaite (2009:337) also found a routine-like pattern which differs somewhat from the one I found. Unlike her findings of trouble source identification, a correction and a confirmation, I also found that confirmation is a part of the correction, but that its presence depends on who initiates the correction. Her study was based on computer initiations only, which could be considered as an “other”, but the one example which I had of a spell checker did not include the confirmation step.

Another important finding, which confirms what Markman’s study (2010:223) also acknowledged, is that there seems to be a preference for self-initiated self-correction. We can see from the analysis that the creator of the trouble source is always given a chance to correct himself/herself before any further intervention from the “other”. When the creator of the trouble source corrects the error, the sequence is short and without any complications. There is often only one “loop” (trouble source, initiation of some kind and attempt to correct) and no explanations are needed as is the case in self-initiated self-correction and other-initiated self-correction (e.g. excerpt 1). As soon as the creator of the trouble source fails to correct the error on first attempt, however, it starts to be more complicated; several loops can take place.
to clear up ambiguity and the “other” intervenes more by dictating, suggesting solutions and, in the most extreme cases, taking over the keyboard like in excerpt 5, line 11 in other-initiated other-correction and excerpt 4, line 11 in self-initiated other-correction.

I also found that when the computer is both the initiator of the error and the executor of the spelling correction, students remain passive and seldom display any acknowledgement of the correction. There was however one exception in the data which showed acknowledgement from the student, but that could have been an exclamation of surprise since the student was about to correct the mistake himself and then noticed that the computer had already done so.

This passiveness from the students, which occurs when the computer corrects the errors, brings the discussion to our rare category of one example which differs from all the other cases, computer-initiated self-correction. As portrayed in Cekaite’s study (2009:336) spell checker software has proved to be useful and pedagogical in its construction. She argues that it shows the students that something is wrong (initiates a correction) but lets the students correct the mistakes themselves. The case which illustrated working with a spell checker in my study also confirms that the spell checker lets the student think for himself and that he corrects it without any more help from the software. This software could, however, cause some disturbance in the learning process. In some recording sessions of the data, the software was programmed for the wrong language and therefore it underlined almost everything in red. This could cause students to try to solve trouble sources which are not actual trouble sources or cause them to ignore all the potential trouble sources since it becomes hard to distinguish between them. These reflections are, however, based on assumptions and could be the subject for further studies.

Another useful utilization of spell checkers is that they provide scaffolding opportunities for the students. Trouble sources that students would normally not even notice are noticed by the computer and as Cekaite’s study (2009:326) shows, the software also provides examples of corrections if the student chooses to use that function. Together with the spell checker software and the peer the student solves the problem by discussing possible remedies.

Scaffolding is used in correction in collaborative writing. What we can see is that when the students try to correct a trouble source together, the sequences are longer and they consult each other trying to co-construct a solution where both participants are satisfied. The pupils interpret and work jointly to fix the problem. The epistemic marker shows in the other-corrections that the student has understood something and that his/her information somehow has been changed or updated. Storch (2005:165) also argues that collective scaffolding in
collaborative writing gives better results when it comes to the final outcome. The texts that the students who collaborated produced were more grammatically accurate than the texts from students who were working alone. My study indicates that collaboration improves spelling. We could see that trouble sources were also detected by the “other”, which could easily have been missed if the pupils worked alone. Instead we could see that by helping each other, they jointly constructed a solution to spelling errors. To confirm what this essay indicates, a comparative study between pupils collaborating and pupils working alone with spelling correction might offer further evidence of this. Such a study could be carried out by video-recording both situations mentioned above, making an analysis based on Conversation Analysis and then comparing the results.
Reference List


Markman, Kris M. (2010). Learning to work virtually: Conversational repair as a resource for norm development in computer-mediated team meetings. In J. Park and E. Abels (Eds.) Interpersonal Relations and Social Patterns in Communication Technologies:
Alena Rizvanovic


Musk, Nigel (accepted) “Doing avoiding the target language with the help of Google: Managing language choices in gathering information for EFL project work.” *TESOL Quarterly*


Appendix I

**Transcription Conventions**

- (.5) Pauses in speech of tenths of a second
- (.) Pause in speech of less than 0.2 seconds
- 🎉 Opening square brackets between adjacent lines: overlapping talk or other activity (between different participants)
- mm Closing square brackets between adjacent lines: closure of overlapping talk or other activity
- [happy] Square brackets with letters in bold: previously typed word
- sh::: Colon: prolonged previous sound
- men vänta but wait Words in grey: translation of line above
- ((slaps desk)) Double brackets and text in italics: comments on contextual or other features, e.g., non-verbal activities
- $hi$ Encompassing dollar signs: smiley or chuckling voice
- **because of** Bold letters which are used together with the computer icon: words typed on the computer
- 🎤 Talking head: speech
- 🔄 Computer icon: involving the computer screen
Våra namn är Helena Honti, Alena Rizvanovic och Nathalie Wigardt och vi är lärarstudenter i engelska vid Linköpings universitet. Just nu forskar vi om hur man lär sig engelska med hjälp av datorn och Internet som ett underlag för våra C-uppsatser.

För att genomföra forskningsprojektet behöver vi ett antal elever som kan tänka sig att delta i undersökningen. Deltagandet innebär att ni i par gör ett projektarbete om en känd person med hjälp av Internet. Undersökningen kommer att äga rum på skolan som en del av den vanliga engelskundervisningen.

För att kunna beskriva hur ni arbetar behöver vi spela in er på video. Men endast vi och andra forskare kommer att titta på inspelningarna och de kommer bara att användas i forskningssyfte. Forskningsprojektet ingår i ett större projekt om lärande och minnande i samarbete med tre andra svenska universitet.

Inga verkliga namn, namn på skolan, ortnamn eller andra avslöjande uppgifter kommer att användas när vi redovisar resultaten.

Medverkan i undersökningen är frivillig och du har rätt att avbryta ditt deltagande när du vill.

Kontakta oss gärna om du har några frågor eller funderingar.

Helena Honti, Alena Rizvanovic och Nathalie Wigardt
Studenter vid Inst. för kultur och kommunikation
Linköpings universitet
581 83 Linköping
epost: Helena helho650@student.liu.se, Alena aleri730@student.liu.se och Nathalie natwi363@student.liu.se

Jag kan tänka mig att delta i undersökningen

(Namnteckning) (Namnförtydligande)

(Ort och datum)