This article involves a psycholinguistic experimental study of how speech rate and filled pauses affect the identification of Australian English by the advanced students of English as a foreign language (EFL). 30 EFL students in total (further referred to as participants) were recruited for the study at Stockholm University (15 participants) and at Lund University (15 participants) respectively. All the participants were university students enrolled at English II university programmes. All the participants indicated that their first language (L1) was Swedish. Bilingual participants were excluded from the experiment. The participants were asked to listen to four audio files in English and to identify the variety of the English language the audio files were presented in. Two of the audio files were read-alouds and two were free recalls. Free recalls contained filled pauses, whilst no filled pauses were present in the read-alouds. The manipulated variables in this study involved filled pauses and speech rate. The aim of the study was to examine whether those variables would impact upon the participants’ identification of Australian English. The results of the study suggest that filled pauses and the difference in the speech rate map onto a high degree of variability in Australian English identification. Data analysis indicated that only 10% of the participants identified the speakers’ variety as Australian English. The results indicate that those participants who have experienced stays abroad in the English-speaking countries identify Australian English consistently. These findings are further presented and discussed in the article.

**Key words**: Australian English, EFL, accent identification, filled pauses, speech rate

**Introduction**

The present article involves an empirical experiment which aims at determining whether or not filled pauses and speech rate would impact upon the EFL participants’ identification of Australian English. The study is based upon an assumption that filled pauses and speech rate contribute to creating a ‘noisy’ environment for the
EFL students’ (further in the article – participants) accent perception, thus exacerbating the participants’ perceptions and judgements. To elucidate this assumption, two identical experimental sessions have been conducted with the participants, one at Lund University and another at Stockholm University. All the participants are advanced EFL students, enrolled at English II programmes at their respective universities at the time of the experiment. The participants have been asked to identify a variety of the English language in a series of the audiofiles, stored on a laptop and presented to them via loud speakers. Whilst all the audio files are in Australian English, two audio files out of four involve filled paused and a faster speech rate compared to the rest of the files. Hence, the manipulated variables involve filled pauses and speech rate.

Further in this article, it will be elucidated how these variables impact upon the participants’ perception and identification of Australian English. The article is structured as follows: First, the notions of Australian English perceptions by EFL students will be provided. Second, an outline of filled pauses and speech rate in accent perceptions will be given. Third, there will be presented a psycholinguistic experiment aimed at establishing the impact of filled pauses and speech rate upon the identification of Australian English by EFL participants.

**Australian English Perceptions by EFL Students**

Research interest in Australian English as a variety of the English language has practical and, quite often, pedagogical implications (Pouriran et al., 2016; Yanagi & Baker, 2015). As indicated by Yang (2016:119),

In light of growing intercultural exchange, it is no longer appropriate to present Standard English (SE), which is often associated with General American English (GAE) and Standard British English (SBE...), as the only variety of English needed for international and intra-national interaction, because such an agenda does not respond to the fact that English is used more frequently as a lingua franca between nonnative speakers than for communication with native speakers.

The role of Australian English as a means of intercultural exchange has been growing, especially within the context of Asian students attending Australian universities. As posited by
Yanagi & Baker (2015), oral comprehension of Australian English by EFL students studying in Australia poses significant challenges. Specifically, 36% of EFL students from Japan enrolled at Australian universities report oral comprehension of Australian English as a problem (Yanagi & Baker, 2015:626). This figure is higher when applied to specific EFL classroom situations. In particular, 76% of the participants in the study by Yanagiand Baker (2015) have indicated their problems with understanding Australian English in whole-class discussion, and 70% have reported problems with understanding dialogues among peer study groups (ibid.).

It should be noted that oral comprehension of Australian English poses problems not only for Asian EFL students. In an experiment conducted by Ladegaard (1998a), it has been found that EFL students with Danish L1 background have experienced difficulties with the identification of Australian English. To illustrate, Ladegaard (1998b) indicates that eight per cent of the whole total number of the EFL participants have correctly identified Australian variety of the English language in a series of experimental tasks. The participants in Ladegaard’s study (1998b) are able to identify American and British English with much more ease. Similar findings are reported by Jarvella et al. (2001), who have conducted an experiment with advanced EFL students in Copenhagen (Denmark). Ladegaard (1998b) assumes that the low number of EFL Danish participants being able to identify Australian English stems from an insignificant presence of Australian media products (films, TV series, music, etc.) in Denmark. It can be generalised from Ladegaard’s findings (1998a; 1998b) that insufficient language exposure to Australian English maps onto the low number of participants, who can correctly identify Australian English. In more general terms, these findings are in concert with previous research (Kapranov, 2009), which emphasises the role of language exposure in successful oral comprehension of a foreign language.

An Outline of Filled Pauses and Speech Rate in Accents Perceptions

Previous research (Huang et al., 2016; Munro & Derwing, 1998) indicates that listeners’ perceptions involving an accented speech, such as, for instance, Australian English, are influenced by multiple variables. Amidst these variables Munro and Derwing (1998: 160) distinguish the age of EFL learners, segmental duration, prosodic
chunking, as well as stereotyping and evaluative reactions. However, it is suggested that a possible negative impact of these variables is counterbalanced by the length of residence in the target language environment (Derwing & Munro, 1997). Extending this argument further, it seems plausible that an EFL learner with an extensive sojourn to an English-speaking country will exhibit robust perception and identification of the variety of the English language even in the ‘noisy’ environment exacerbated, for instance, by filled pauses and high speech rate.

Filled pauses in spontaneous speech are considered a typical variable involved in spontaneous discourse (Hird & Kirsner, 2002; Poyatos, 1997). Filled pauses are thought to distinguish spontaneous speech from planned or read speech (Krivnova, 1991). Previous research by Fox Tree and Schrock (1999) indicate that spontaneous and semi-spontaneous speech is characterized by filled pauses, which are associated with unstructuredness of thought as it happens online.

Filled pauses contain a voiced fragment in the speech signal (Fox Tree, 2002). This voice fragment may correspond to vocal hesitations, repetitions, false starts, syllabic and/or vocalic prolongations of various kinds (Fox Tree, 2003). It is suggested that filled pauses are automatic and subconscious (Levelt, 1989). The automatic use of filled pauses is reported in clinical descriptions of impaired speech in aphasia and in brain tumour patients with removed left hemisphere (Van Lancker et al., 2006:412).

Filled pauses are frequently used as discourse markers in hedges, parataxis and vague language (Wennerstrom & Siegel, 2003). Filled pauses are thought to be used for holding the floor in a conversation by providing audible cues that the speaker is engaged in speech production (Maclay & Osgood, 1959). It is theorised that filled pauses involving various types of non-lexical fillers, such as hesitations of the sound or lengthening of certain words, are used by the speaker to plan the continuation of the utterance. Clark and Fox Tree (2002) indicate that filled pauses tend to heighten the listeners’ attention to the upcoming speech chunk. It appears that human raters identify lexical items faster, when they are presented with speech segments containing filled pauses (Clark & Fox Tree, 2002).

Speech rate is considered to be related to speech fluency (Kormos & Denes, 2004:148). Typically, speech rate is calculated as the number of syllables articulated per minute. Other approaches
to calculating speech rate involve the number of words per minute, and the total number of syllables produced in a given speech sample divided by the amount of total time required to produce the sample in seconds (Riggenbach, 1991). In a study of fluency and speech production in the second language, Kormos and Denes (2004) report that mean speech rate by advanced students of English is 181, whilst low-intermediate students’ speech rate is 115 in the experimental speech production task. In speech comprehension, however, optimal speech rate preferred by the listeners is approximately 200 words per minute (Munro & Derwing, 1998:162). Previous research suggests that speech rates higher that 250 words per minute significantly compromises oral comprehension (Anderson-Hsieh & Koehler, 1988; Foulke, 1968).

Based upon these findings, it can be assumed that speech rate in speech production tasks in a foreign language is a measure of the students’ mastery of the language. Whilst there are numerous previous studies of the effects of speech rate and pauses on the perception of speech by non-nativelisterens (e.g., Blau, 1990; Flege, 1988), little, however, is known about the impact of speech rate on the advanced students’ oral perception of the foreign language, e.g. EFL. There is insufficient research which elucidates how a high speech rate taken in conjunction with filled pauses influences EFL students’ identification of an accent of the English language. A psycholinguistic study further presented in this article seeks to address this issue.

**The Present Psycholinguistic Experiment**

Following Munro (1998:159), the present study is based upon an assumption that accented speech delivered at reduced rate sounds more comprehensible than speech produced at a normal rate. Additionally, the study factors in findings by Fox Tree (2003) who suggest that filled pauses impact upon the participants’ speech comprehension. In concert with these assumption, the present hypothesis has been formulated as follows: It is assumed in the present study that a speech rate higher than normal taken in conjunction with filled pauses will negatively impact upon the participants’ identification of Australian English. However, it is not precluded that those participants who have enjoyed a stay abroad in an English-speaking country will successfully identify the Australian variety of the English language in the audio texts marked by the presence of high speech rate and filled pauses.
Participants
30 participants (12 males and 18 females, M age 22.4 y.o.) in total were recruited for the experiment, i.e. 15 participants at Lund University (Sweden) and 15 at Stockholm University (Sweden). All the participants were enrolled at advance EFL programmes at their respective universities in Sweden. All the participants indicated that Swedish was their first language (L1) and English was their foreign language (EFL). Bilingual participants were excluded at the preliminary stage of the experiment.

Materials
Materials involved four audio texts. All the texts were similar in duration (M = 1.2 min). Two stories were read-alouds (see Appendix 3 for a sample), while the other two were free recalls (see Appendix 4 for a sample). There were two speakers in all four audiotexts (one speaker had to read a read-aloud and provide a free recall of another story, another speaker was asked to do the same). All the speakers in all four audio files were female certified speech pathologists from Perth, Western Australia. The speakers in read-aloud audio files were instructed to read the stories in a neutral formal manner (speech rate in read-aloud #1 was calculated at 120 words per minute, and in read-aloud #2 it was 118 words per minute). The speakers in free recalls were given a story to read and then they were asked to retell it with a higher speech rate than in the read-alouds, inserting the following filled pauses: oh, uhm, you know, and well where they thought it was appropriate. Speech rate in free recall #1 was calculated at 179 words per minute, and in free recall #2 it was 183 words per minute.

Procedure
All the participants were tested in a one-off experimental session as a group, one group in Lund University (Sweden) and another group at Stockholm University (Sweden). The participation in the experiment was voluntary and no conflict of interest was reported. The participants were provided with the Information Sheet containing an outline of the experimental procedure. Then, the participants were asked to fill out the Consent Form which gave the experimenter the participants’ permission to use their data for research purposes. The participants’ real names and other identifying information were coded
to ensure confidentiality. Following that, the participants were given a questionnaire with the questions involving the participants’ socio-linguistic background (see Appendix 1). Then, the participants were asked to listen to four audio texts in English. They were instructed to identify the variety of the English language in those audio texts after they have listened to them. The participants were provided with a post-listening questionnaire (see Appendix 2). The experimental sessions both at Lund University and at Stockholm University took approximately one hour.

Speech rate was calculated as a measure of words per minute. The results were calculated in statistical package SPSS.

**Results and Discussion**

The results of the data analysis have been summarised in Table 1 (the participants from Lund University) and Table 2 (the participants from Stockholm University) respectively.

### Table 1. Descriptive statistics with the participants from Lund University

<table>
<thead>
<tr>
<th>Percentage of the Participants in Accent Identified/Story</th>
<th>Story 1. RA</th>
<th>Story 2. FR</th>
<th>Story 3. RA</th>
<th>Story 4 FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>American English</td>
<td>20</td>
<td>0</td>
<td>7.5</td>
<td>5</td>
</tr>
<tr>
<td>Australian English</td>
<td>18</td>
<td>24</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>British English</td>
<td>62</td>
<td>60</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Irish English</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Zealand English</td>
<td>0</td>
<td>16</td>
<td>7.5</td>
<td>5</td>
</tr>
<tr>
<td>Scottish English</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>South African English</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Explanation of the abbreviations: RA = read-aloud story; FR = free recall story.

The results from experimental session # 2 involving the participants from Stockholm University are presented in Table 2 below:
Table 2.

Descriptive statistics with the participants from Stockholm University

<table>
<thead>
<tr>
<th>Percentage of the Participants in Accent Identified/Story</th>
<th>Story 1. RA</th>
<th>Story 2. FR</th>
<th>Story 3. RA</th>
<th>Story 4 FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>American English</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Australian English</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>British English</td>
<td>70</td>
<td>50</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>Irish English</td>
<td>0</td>
<td>30</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>New Zealand English</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Scottish English</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>South African English</td>
<td>0</td>
<td>0</td>
<td>30</td>
<td>0</td>
</tr>
</tbody>
</table>

Explanation of the abbreviations: RA = read-aloud story; FR = free recall story

As evident from the data, the identification of Australian English by the participants in both the groups of the participants is marked by a high degree of variability. However, there is a tendency in both the groups to associate read-alouds with British English, e.g. the group of participants from Lund University identified British English in read-alouds as 62% and 45% respectively and in free recalls as 60% and 50% respectively. As evident from Table 1, the data garnered from the participants at Lund University are inconclusive in respect to the impact of filled pauses and a higher speech rate upon the successful identification of the variety of the English language. Similar findings are observed in the group of participants tested at Stockholm University. Analogous to the participants at Lund University, their data are characterised by a high degree of variability. It is not possible to ascertain whether or not the variability is associated with the presence of filled pauses and a high speech rate.

However, the examination of the pre- and post-listening questionnaires has reveal the following findings: those 10% of all
the participants who successfully identified Australian variety of the English language in all four audio files have stayed at least three months abroad, either in Australia or in France having Australian roommates. The present findings seem to concur with Huang et al. (2016:25), who suggest that there is a facilitative effect of accent familiarity on accent identification.

Conclusions
The present article involves a psycholinguistic experiment aimed at elucidating the impact of filled pauses and a difference in speech rate upon the identification of Australian English. 30 participants in total have been tested in the study. Only 10% of the participants consistently identified the variety of the English language as Australian English in all experimental tasks. Data from the pre- and post-listening questionnaires reveal that those 10% of the participants who identified Australian English in all the stories have stayed in Australia (two participants) and one in Paris, living there with Australian roommates. The mean length of the sojourn abroad by those participants is estimated to be three months in duration. Arguably, these findings have the following pedagogical implications: The EFL students’ awareness of the varieties of the English language via classroom exposure does not map onto the successful identification of the variety of the English language in the listening comprehension task. The data in the present study are suggestive of the facilitative effect of the EFL students’ sojourn abroad in the English-speaking country, which allows to override a ‘noisy’ environment (represented by filled pauses and a high speech rate) of the identification of the variety of English.

Acknowledgements
The author wishes to acknowledge post-doctoral research funding from the Swedish Institute (Stockholm), which enabled the data collection and the article write-up. The author of the article wishes to acknowledge students at Lund University and at Stockholm University, whose participation in the experiment is highly appreciated.

References:


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**Appendix 1. Pre-listening questionnaire**

1. What is your current age?
2. Please, identify your gender.
3. What is your first language?
4. What is your second language?
5. How old were you when you started learning English?
6. Have you previously been to an English-speaking country? If yes, could you tell me what country it was and how long did you stay there?
7. Would you describe yourself as fluent in English? If yes, could you tell me how fluent do you think your speech is? If no, could tell me what do you think your problems are in relation to speech fluency in English?
8. Do you use English daily? If yes, please specify how often.
9. Do you watch TV programmes in English? If yes, which ones?
10. Do you watch the English-speaking TV programmes and pay attention to what people are saying in English, or do you watch the programmes only paying attention to the subtitles in Swedish?
11. Are you aware that the English language has different varieties?
Appendix 2. Post-listening questionnaire

1. You have now listened to four stories. Could you please try to identify which dialect/s of the English language these four stories are told in?

2. Have you heard the/these dialect/s of the English language before? If yes, tell me when and under what circumstances.

3. Were the stories easy to understand? If yes, were there any stories which were much more easier to understand? Why?

4. Were the stories difficult to understand? If yes, which of the stories was the most difficult one to understand? Why?

5. Was the speaker in Story 1 a fast speaker, or a slow one? How would you rate her tempo of speech? Cross one answer only. □ Very fast □ Fast □ Normal □ Slow □ Very slow?

6. Was the speaker in Story 2 a fast speaker, or a slow one? How would you rate her tempo of speech? □ Very fast □ Fast □ Normal □ Slow □ Very slow?

7. Was the speaker in Story 3 a fast speaker, or a slow one? How would you rate her tempo of speech? Cross one answer only. □ Very fast □ Fast □ Normal □ Slow □ Very slow?

8. Was the speaker in Story 4 a fast speaker, or a slow one? How would you rate her tempo of speech? Cross one answer only. □ Very fast □ Fast □ Normal □ Slow □ Very slow?

9. Could you say that all the speakers in all the stories were fast talkers? Why?

10. Could you say that all the speakers in all the stories were slow talkers? Why?

11. Speaker in which story paused more? In Story 1? In Story 2? In Story 3? In Story 4? Could you explain why?


Appendix 3. A sample of a free recall story

Well, the story is about the guy called Don Moore. He was waiting at the airport flying…. You know, …waiting to fly to Cairns… The flight…. He’s going to visit his brother who he hadn’t seen for a number of years. The flight was supposed to leave at 7:30 but it had been delayed. Uhm...and … the woman, the announcer person said that the plane was delayed and then she said that people were allowed to board, but, uhm, the passengers had to be restricted in numbers. Oh,
and she read out the list of the passengers, um...who could not board the plane and Don Moore was one of those people. Well, everyone came up and complained to the woman, and then, finally, he...Don waited up until everyone disappeared and he came up to the woman and said that he had to be on that plane because he had to perform an emergency surgery in Cairns. And she said ‘How bizarre, how funny, you are the seventh person who told me the same today’.

Appendix 4. A sample of a read-aloud story
Billy Smith closed his umbrella and walked slowly into the library. He went over to the desk where a strict-looking grey-haired woman sat sorting papers. He waited quietly for the woman to finish her work. Eventually, the woman looked up at him with an irritated expression and asked Billy what she could do for him. Billy explained that he had had a book checked out for over a month. The woman frowned and told Billy that he would have to return the book right away and pay the fine. Then Billy had to admit to the woman that he had lost the book. That upset the librarian even more. She told Billy that he had better find the book or he would have to pay the library for it. Finally, Billy told her that he had forgotten the book at a resort in New Zealand. The woman picked up a pencil and said that she would have to fill out a report. Then she asked Billy what was the name of the book he lost. Billy blushed and said: ‘The name of the book was ‘How To Improve Your Memory’.”

СКОРОСТЬ РЕЧИ И ЗАПОЛНЕННЫЕ ПАУЗЫ КАК ПЕРЕМЕННЫЕ УЧАСТНИКИ, ВЛИЯЮЩИЕ НА ИДЕНТИФИКАЦИЮ СТУДЕНТАМИ АВСТРАЛИЙСКОГО ВАРИАНТА АНГЛИЙСКОГО ЯЗЫКА КАК ИНОСТРАННОГО (EFL)

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АННОТАЦИЯ. В статье освещено экспериментальное исследование того, как скорость речи и восполненные паузы влияют на
идентифікацію австралійського варианта англійської мови як іноземного (EFL). Були отобрані 30 студентів для дослідження в Стокгольмському університеті (15 учасників) і в Університеті Лунда (Швеція) належно. Все учасники були студентами, які навчаються по університетським програмам Англійська ІІ. Все учасники мали мети, що їх перший мова (L1) є шведська. Двомовні учасники були виключені з експерименту. Учасникам було запропоновано вислухати звукові файли на англійському, які мали дві різниці: чотири звукові файли із читанням і дві звукові файли з неповними перервами. Ці перерви випадково включені в першу групу, але у першій групі вони відсутні. Ці результати показую оточку, що 10% учасників віддали предпочтіння австралійському англійському акценту. Результати підтверджують, що тільки учасники, які навчаються за кордоном в англійських країнах, успішно ідентифікували австралійський акцент.

Ключові слова: австралійський, EFL, ідентифікація акцента, заповнені паузи, швидкість мовлення.

АНОТАЦІЯ. Ця стаття містить експериментальне дослідження того, як швидкість мовлення і заповнені паузи впливають на ідентифікацію австралійського акценту англійської мови студентами англійської мови як іноземної (EFL). 30 студентів EFL були набрані для дослідження в Стокгольмському університеті (15 учасників) і в Університеті Лунда (Швеція) відповідно. Всі учасники були студентами, які навчаються за університетськими програмами Англійська ІІ. Всі учасники відзначили, що їх перша мова (L1) є шведська. Двомовні учасники були виключені з експерименту. Учасникам було запропоновано вислухати звукові файли, і згідно з результатами, 10% учасників виявили відмінності в стані. Результати підтверджують, що тільки учасники, які навчаються за кордоном в англійських країнах, успішно ідентифікували австралійський акцент.

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чотири звукових файлів англійською мовою та ідентифікувати варіанти англійської мови. Двое з аудіо файлів були читання вголос і два були довільними переказами. Довільні перекази містили заповнені паузи, в той час як вони були відсутні в читанні вголос. Мета дослідження полягала в тому, щоб вивчити, чи будуть швидкість мовлення і заповнені паузи впливати на ідентифікацію австралійської англійської мови. Результати дослідження показали, що 10% учасників ідентифікували австралійську англійську. Результати показують, що лише ті учасники, які перебували за кордоном в англомовних країнах, успішно ідентифікували австралійський варіант англійської мови.

Ключові слова: австралійська англійська, EFL, ідентифікація акцента, заповнені паузи, швидкість мовлення.

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