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The impact of immediate task repetition on breakdown fluency

Summary

The focus of the present study is to explore the relationship between the task repetition including a tightly structured narrative and the breakdown fluency, i.e. number of pauses per minute, average duration of pauses, and phonation-time ratio. Thirty-three Croatian learners of English performed the narrative task twice. The temporal fluency variables were extracted by speech analysis program Praat in order to be automatically measured for evaluation (Boersma & Weenink, 2017). The results show that during the immediate, second encounter with the same task, the subjects employ significantly less pauses and their average length also decreases significantly. The significant difference is also obtained for the phonation-time ratio. The recorded progress in fluency measures can be explained by the priming effect and, consequently, the reduced cognitive load. The presented results point to the conclusion that well-known topics with a tightly structured storyline are connected with improvements in fluency, regarding breakdown fluency variables, even in the case of learners at a higher level of language proficiency. The findings of the study have implications for L2 pedagogy, highlighting the effective impact of task repetition on the development of oral fluency.

Key words: breakdown fluency, task-based teaching, task repetition

1. INTRODUCTION

Attaining native-like fluency in terms of fast, smooth and automatic speech flow is one of the ultimate goals of many L2 learners. L2 fluency can be explained by Levelt's model of speech production for L1, which has been revised and adapted to incorporate L2 speech (Kormos, 2006; Segalowitz, 2010). This model explains the efficient functioning of the speech production mechanisms and the concept of fluency, pointing to fast retrieval speed and the speaker's control over the linguistic forms. In other words, fluency refers to the proceduralization and automatization of lexical retrieval, grammatical, and articulation rules, as well as to the skilful coping with various forms of speech disfluencies caused by different conceptual demands (Segalowitz, 2010). Segalowitz (2010, 2016) distinguishes three domains referring to L2 fluency development. The first domain of fluency, being a global measure of language proficiency, is termed *cognitive fluency*. Cognitive fluency represents the reflection of utterance fluency, i.e. it points to the overall efficiency of the processes involved in the production of speech. *Utterance fluency* is associated with temporal variables such as speech rate, mean length of runs, phonation-time ratio, articulation rate, silent pauses and the like (e.g. Götz, 2013; Kormos & Dénes, 2004; Prefontaine, 2010). Thus, utterance fluency refers to objective and quantifiable phonetic measurements of L2 speech. Baker-Smemoe, Dewey, Bown, and Martinsen (2014) suggest that utterance fluency features could predict the higher proficiency levels, whereas Tavakoli, Nakatsuhara, and Hunter (2017) assume that certain utterance fluency measures could accurately differentiate between lower levels of proficiency. In other words, utterance fluency measures might be able to group learners into proficiency levels from the lower intermediate to the upper intermediate.

In task-based studies regarding L2 fluency attainment, utterance fluency is further divided into breakdown fluency, speed fluency, and repair fluency (Skehan, 2003; Tavakoli & Skehan, 2005). *Breakdown fluency* is generally assessed by pause frequency and amount of speaking time, whereas *speed fluency* is usually measured by speech rate or the number of syllables/words uttered per second/minute (Götz, 2013). *Repair fluency* is connected with the frequency of self-repairs (Kovač & Milatović, 2012), repetitions, reformulations, etc. Besides cognitive and utterance fluency, Segalowitz (2010, p. 48) also includes the third domain or *perceived fluency*, referring to 'the inferences speakers make about speakers' cognitive fluency based on their

perceptions of utterance fluency'. All three domains, viewing fluency from the three different perspectives, are intertwined and connected.

1.1. Breakdown fluency

As opposed to speed fluency, breakdown fluency is generally associated with pausing. In the early studies, Beattie (1980), for example, assumes that fluent speech and silent pauses in L1 speech alternate, emphasising that within clause pauses are connected with linguistic planning, pointing to the need for additional time. The speaker may require additional time for various reasons, for example, to search for ideas, words, grammatical structures, to correct overt and covert errors, or to search for more appropriate ways to express his/her ideas (Yuan & Ellis, 2003). This is the major difference between L1 and L2 speech production. Whereas message planning in L1 requires conscious attention, the formulation and articulation are automated processes which can run in parallel without the speaker's conscious attention. However, in L2, the formulation and articulation processes are only partly automated, largely depending on the speaker's proficiency level.

Broadly speaking, pauses in L2 serve different functions compared to L1; firstly, they can signal difficulties in speech planning and speech production, and secondly, they can also occur as a result of doubts about what to say next (Goldman-Eisler, 1961). Fillmore (1979) argues that the temporal characteristics of speech, such as hesitations and pauses, are the ones defining a fluent speaker according to perceptions of native speakers' fluency, whereas Kowal, O'Connel, O'Brien, and Bryant (1975) emphasise that an increase in L2 proficiency corresponds to a decrease in the frequency and length of silent pauses in reading. Duez (1985) states that hesitations in speech which disrupt the smooth flow of L1 speech occur in different forms, such as silent pauses, filled pauses, repetitions, lengthened syllables or combinations of these.

In a multiple-case study, Lennon (1990) reports that pause frequency and pause length decrease with an increased exposure to L2. Furthermore, Riazantseva (2001) points out that pausing, like intonation, is a developmental phenomenon which becomes nativelike with higher language proficiency. However, pauses are not only indicators of the underlying difficulties in speech planning and speech production, they are also important for the listener who needs sufficient time to process the ongoing speech (Arnold, Fagnano, & Tanenhaus, 2003).

According to Segalowitz (2010), appropriate pausing highly influences perceived fluency in L2 since rapidity and smoothness of performance create the impression of

attained nativelike fluency. Riggenbach (1991) and Yang (2012) suggest that pauses in L2 are distributed nativelike if they occur at clause boundaries. In their view, within-clause pausing does not sound fluent.

Pause frequency in L2 research has been calculated in different ways, for example, Kormos and Dénes (2004) show the number of silent pauses per minute, Freed (1995) counts the number of silent pauses per 100 words, and Möhle (1984) counts the number of silent pauses per 100 syllables. Another pause measure is phonation-time ratio which is expressed 'as the percentage of time spent speaking as a percentage proportion of the time taken to produce the speech sample' (Towell, Hawkins, & Bazergui, 1996, p. 91). The third most commonly used pause measure is average pause duration which is expressed by dividing the total length of pauses by the total number of pauses (Kormos & Dénes, 2004; Tavakoli & Skehan, 2005). Rossiter (2009) emphasises that the number of pauses per second and pruned speech rate are strong predictors of fluency. Witton-Davies (2014) reports that, among other fluency variables, pause length, pause frequency, as well as phonation-time ratio, are the most reliable measures of utterance fluency.

Fluency studies applying Praat script are relatively new (Prefontaine, 2010). Prefontaine (2010) conducted a study using Praat software to measure the phonation-time ratio, syllables per second, and other temporal fluency variables. Her study is important since it is one of the first attempts to use automatic speech rate measurement to evaluate tasks.

Segalowitz (2010), Kormos and Dénes (2004), Götz (2013), and Prefontaine (2010) point out that the findings related to fluency are not easily comparable due to a lack of consistency in applying the same objective variables and research methods. In pausological research field, there is a cut-off point below which pauses are ignored. Generally, it varies from 0.2 and 0.3 seconds (e.g. de Jong, Steinel, Florijn, Schoonen, & Hulstijn, 2013; Kormos & Dénes, 2004; Lennon, 1990; Tavakoli & Skehan, 2005; etc).

1.2. Task repetition

Time pressure affects to a considerable extent unautomated L2 speech and task-based language teaching approaches have been suggested to ease the processing pressure by providing the learners with more time to plan (e.g. Bygate & Samuda, 2005). Drawing on Levelt's model of speech production, Ellis (2005) proposes a framework of task-based planning and respective pedagogic interventions aiming at manipulating the

planning process itself. Previous studies considered two principal types of task-based planning which differ in terms of when the planning takes place, i.e. pre-task planning and within-task planning (Ellis, 2005). The former occurs before the task has been performed, while within-task planning occurs during its performance. Pre-task planning can be further subdivided into strategic planning and task repetition. The opportunity for strategic planning before speaking provides the learners with some time to test their own capabilities and to maximize the use of the existing linguistic repertoire. Task repetition as a fluency enhancing strategy may involve the repetition of the same or the slightly modified task, or just parts of a task at intervals of time. As pointed out in Ellis (2005), in task repetition, the first performance is considered a pre-task activity or a preparation for the following performance.

As suggested by Richard and Theodore (2014), language teaching should focus on the task-based language teaching. Van den Branden (2016) defines a pedagogic task as a goal-oriented activity which involves a meaningful use of language. According to Lambert, Kormos, and Minn (2017), there are four criteria a task must fulfil in order to play a relevant role for both research and pedagogical purposes. Firstly, a task is an activity in which meaning is primary. Secondly, there is some connection to authentic situations. Thirdly, learners must use their own resources to finish the activity, and last, there is a communicative outcome. According to another definition provided by Bozorgian and Kanani (2017), a pedagogic task is an activity requiring the language to be pragmatically processed in order to reach a desirable outcome, hence it can be evaluated according to two criteria: firstly, if the propositional content has been adequately conveyed by the speaker, and secondly, if the interlocutor has correctly understood its meaning. Theories explaining speech production in L2 emphasise the necessity of introducing speech tasks into curricula based on Levelt's model of speech production (e.g. Bygate & Samuda, 2005; Kormos, 2006; Skehan, 2009). Task repetition and task structure have been investigated over the past few decades in order to confirm the existence of a beneficial impact on developing fluency (e.g. Bozorgian & Kanani, 2017; Bygate, Skehan, & Swain, 2001; Ellis, 2005; Lambert et al., 2017; Tavakoli & Foster, 2011).

To date, repetition effects have been investigated immediately, after days and weeks (e.g. Bygate, 1999; Bygate et al., 2001; de Jong & Perfetti, 2011; Gass, Mackey, Alvarez-Torres, & Fernández-García, 1999; Lynch & Maclean, 2001; Wang, 2014). Accordingly, studies have provided substantial evidence that repeated practice favourably influences fluency (e.g. Bygate et al., 2001; de Jong & Perfetti, 2011;

Lambert et al., 2017; Lynch & Maclean, 2001; Tavakoli & Foster, 2011; Wang, 2014). The results of early empirical studies reveal that during the first encounter with the task, the speaker is primarily focused on the content of the preverbal message (e.g. Bygate, 1996). Due to the limited attentional resources and the limited capacity of the working memory, the speaker's attention is usually focussed either on the form or on the meaning (Lambert et al., 2017; Skehan, 1998). Consequently, during the second encounter with the same or slightly altered task, the speaker's attention will shift from the meaning to the form resulting in greater accuracy and fluency (Samuda & Bygate, 2008). However, the effects of task repetition vary depending on the conceptual demands of the tasks, i.e. different tasks vary in terms of the pressure they pose on the working memory in different stages of speech production (Skehan, 2009). Task repetition involves two phases. In the first phase, the speaker organises the cognitive content, finds the appropriate lexical items and the corresponding grammatical forms within the limited time-constraints of real-life interaction. In the second phase, the speaker upgrades the previous performance. By way of analogy, repetitions might potentially lead to the integration of knowledge and performance, thus facilitating the processes at the levels of conceptualisation and formulation. Wang (2014), for instance, points out that not only the formulation phase, but also the articulation phase, significantly benefit from the previous performance.

According to Lambert et al. (2017), task repetition displays a major impact on the level of conceptualisation. In the repeated task, the macrostructural conceptual plan for the message to be conveyed will already be accessible, which will in turn assist the formulation phase by reducing the processing pressure. However, in the case of more demanding conceptual plans, the speaker will probably not recall the content entirely, but the familiarity with the task will have a positive effect on the repeated performance. Consequently, task repetition might strengthen and speed up the established links between the conceptualisation and the formulation level, hence the formulation will become more accurate because the speakers' attention shifts towards monitoring for correctness and appropriateness. As stated by Kormos (2006), Skehan (2009), Segalowitz (2010), Lambert et al. (2017) and others, the positive impact of task repetition on performance is connected with the cognitive demands of the employed tasks.

The overall positive effects of task repetition are strongly related to different task design features and implementation options. Besides the criterion of structure, task

familiarity and cognitive demands, the proposed effects can also be related to the proficiency level of speakers (Segalowitz, 2010).

Regarding breakdown fluency measures, several studies investigate the influence of task repetition on pausing and phonation-time ratio. In a large study including thirty-two Japanese learners of English who completed three communication tasks six times, Lambert et al. (2017) conclude that clause-final pausing decreased between the first two performances and mid-clause pausing decreased gradually up to the fourth performance. Also, an important finding is the reduction of clause-final pausing, pointing to the benefits of repetition in the conceptualisation phase. Furthermore, de Jong and Perfetti (2011) examine the impact of task repetition on L2 fluency enhancement. In their study one group of participants spoke about the same topic three times, while the other group talked about three different topics. Different fluency measures are taken into consideration and long term gains in breakdown fluency, relating to the mean length of pauses and the phonation-time ratio, are recorded for the group who spoke about the same topic three times. In another study, Matsumura, Kazuyo, and Affricano (2008) conclude that the repetition of a narrative task seems to be helpful in decreasing the pause length. Moreover, gains are also obtained for the phonation-time ratio.

Researchers often provide an instructional model for L2 teaching using the results obtained by task repetition which are explained by the psycholinguistic model of speech production. Tavakoli and Hunter (2018) point out the necessity of the integration of fluency fostering activities into language teaching practice. In the view of Gatbonton and Segalowitz (2005), automaticity and proceduralization of knowledge can be achieved through practicing tasks that are genuinely communicative. Repetition of recurrent phrases might seem monotonous at first, however, it is a fundamental feature of common discourse and should be more involved in teaching activities.

Similarly, it should be emphasised that despite the increased interest in task repetition as a fluency enhancement strategy, recent studies suggest that task repetition is not frequently used in classrooms for the purpose of promoting fluency (Tavakoli & Hunter, 2018). In fact, Rossiter, Derwing, Manimtim, and Thomson (2010) suggest that teachers are more likely to use free communication activities rather than the ones proposed by L2 research and there is a general consensus that many students do not have enough opportunity to improve their oral fluency. Also, Tavakoli and Hunter (2018) point to the existing gap between fluency research and pedagogic practice which can only be bridged if researchers and language teachers work together.

In sum, pedagogic tasks play an important role in L2 teaching since they provide the learners with the possibilities to use their linguistic knowledge in relatively natural communicative contexts, and tasks involving repeated performances lead to long term changes in speech processing (Ellis, 2009). According to Wray (2002), formulaic sequences will emerge as a result of a continuous practice of phrases and clauses. In other words, proceduralization and automatization are the result of the repeated use of grammatical structures and words, potentially leading to new production rules which may gradually be strengthened through repetition.

The study described in this paper is an attempt to find out whether task repetition, based on cognitively less demanding tasks, significantly influences speech pausing and the total amount of speaking in the case of more proficient speakers.

The present study is thus expected to extend the current knowledge about the impact of task repetition on EFL learners' speech fluency.

The following research hypotheses are proposed:

- Immediate task repetition of a tightly structured narrative significantly influences the number of pauses in the speech of more proficient learners of English.
- Immediate task repetition significantly influences the average duration of pauses in the speech of more proficient learners of English.
- Immediate task repetition significantly influences the phonation-time ratio in the speech of more proficient learners of English.

2. RESEARCH DESIGN

2.1. Participants

Thirty-three Croatian EFL learners, first-year undergraduate engineering students (14 female and 19 male students aged between 18 and 19) participated in the study. The participation was voluntary. All of them shared the following characteristics: a) the subjects were sampled from the population of English learners at the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split according to their proficiency level based on the results of the English State Matura Exam. According to an interview which preceded the recordings, all participants in the study scored excellent or very good grades in the English State Matura Exam at the highest level (A level). State Matura Exam is a secondary school leaving examination in Croatia; b) all of them attained almost identical levels of education; in fact, they learned English at primary school and at the high school, as well as in private

schools, for at least nine years; c) none of them spent more than ten days in an English speaking country.

2.2. Materials and procedures

Samples of speech were collected from the same subjects in an informal atmosphere in an ordinary office at the Faculty. The participants were seated opposite the researcher and they were briefly informed about the nature of the first task. The computer with the microphone was placed between the subject and the researcher. Each student was individually audio-recorded and the total recorded speaking time amounted to sixty-seven minutes. In order to ensure the comparability of the results with similar studies, an oral narrative task was employed in this study. The participants were asked to respond to a narrative speech task including a picture description. This task is very similar to traditionally used devices in research and L2 assessment (Kormos & Dénes, 2004). The cartoon is selected from a popular book of cartoons by a well-known American cartoonist (e.g. Kormos & Dénes, 2004; Riazantseva, 2001; etc). The selection criteria for the chosen cartoon are its relative simplicity and familiarity. This kind of task is non-interactive and has been popular among researchers. The cartoon description consists of a six-picture sequence arranged in a logical order. The story is highly structured, with a clear beginning, a middle part and a predictable ending. The content of the story is relatively familiar with the vocabulary including high frequency words and formulaic expressions. The pictures depict two people meeting in a park, talking to each other, spending some time together, and eventually getting married.

According to Tavakoli and Skehan (2005), this tightly structured narrative has a clear story developing in pictures, with the sequence of events being fixed, and without the possibility to rearrange the pictures without affecting the main theme of the story.

Hence, in the present study, the following performance conditions were defined (Saeedi & Kazerooni, 2013):

a) *Cartoon description.* The participants were required to look at the series of pictures including the tightly structured narrative before starting to retell the story taking into consideration that the listener (researcher) could not see the pictures and could only grasp the meaning according to what she hears. The participants were given 30 seconds to look at the pictures before telling the story.
b) *Immediate task repetition.* After completing the narration for the first time, the participants immediately started to retell the story once again without being previously informed about the second performance.

2.3. Quantifiable measures of breakdown fluency

The temporal fluency variables were measured by speech analysis program Praat in order to automatically calculate the temporal variables for evaluation purposes.

The measures of fluency examined in this study are as follows:

a) The number of silent pauses per minute, where the Praat is configured to detect pauses over 0.25 seconds. Following from de Jong et al. (2013), a silent pause is an unfilled silence of longer than 0.25 s. The number of silent pauses per minute is obtained by dividing the number of pauses over 0.25 s and the total time in minutes spent to produce the speech sample.
b) Average pause duration is expressed by dividing the total length of pauses by the total number of pauses.
c) Phonation-time ratio is calculated 'as the percentage of time spent speaking as a percentage proportion of the time taken to produce the speech sample' (Towell et al., 1996, p. 91).

2.4. Statistical analysis

The statistical analysis was performed under two different task conditions, i.e. first performance of the task and repeated performance using descriptive statistics, the Shapiro-Wilk normality test, and the parametric paired t-test or the non-parametric Wilcoxon matched pairs test. The level of significance equals 0.05.

Before the application of a suitable statistical test, it is necessary to verify the prerequisite of normal distribution for the use of the parametric test (if so, since two samples at the same subjects are compared, the t-test for dependent samples, i.e. the paired t-test, is used). The paired t-test assumes that the differences between the pairs follow a normal distribution. If the prerequisite is not met, the Wilcoxon matched pairs test is performed as the broadly applied non-parametric test for two dependent samples. The Shapiro-Wilk test has been used to test normality, emphasised in many papers as the highly efficient normality test (e.g. Coin, 2008; Henderson, 2006; Keskin, 2006). If the p-value of the test is greater than the level of significance, it can be concluded that there is no evidence that the population significantly deviates from the normally distributed population. In that case, the paired t-test is utilised to test two dependent samples; otherwise the non-parametric test is preferred.

3. RESULTS

In this section, the findings of the study in relation to the research hypotheses will be discussed. The sample parameters related to the average pause duration (APD) are presented in Table 1 together with a percentage difference between the arithmetic means. It can be noted that the average pause duration in the repeated task is more than 21% lower compared to the first performance. However, further tests were subsequently performed in order to determine whether the obtained difference was statistically significant.

According to the results of the Shapiro-Wilk test, ($W = 0.5631$, $p < 0.0001$), it may be stated that the distribution of the pair differences significantly deviates from the normal distribution. Hence, the non-parametric Wilcoxon matched pairs test is applied, Table 2. As can be seen, the significant difference between the average duration of pauses is obtained between the first population (first performance of the task) and the second population (task repetition). The pairing effectiveness is tested by means of computing the non-parametric Spearman correlation coefficient ($rs = 0.299$, $p = 0.0454$). It can be concluded that the pairing is effective.

Table 1. Sample parameters for average pause duration (APD)
Tablica 1. Rezultati za prosječno trajanje stanki (PTS)

APD / PTS	First time / Prvi put	Repetition / Ponavljanje
Min	0.45	0.33
Me	0.78	0.73
Max	4.78	1.27
AM	0.93	0.73
StD	0.73	0.24
SE	0.13	0.04
AM difference / Razlika AM	-21.51%	

Legend / Legenda
Min – minimum sample value / najniža vrijednost u uzorku, Me – median / medijan, Max – maximum sample value / najviša vrijednost u uzorku, AM – arithmetic mean / aritmetička sredina, StD – standard deviation / standardna devijacija, SE – standard error / standardna pogreška

Table 2. Wilcoxon matched pairs test for average pause duration (APD)
Tablica 2. Wilcoxonov test ekvivalentnih parova za prosječno trajanje stanki (PTS)

APD / PTS	Wilcoxon matched pairs test / Wilcoxonov test ekvivalentnih parova			
	Sum of positive ranks / Zbroj pozitivnih rangova	Sum of negative ranks / Zbroj negativnih rangova	*W*	*p*
	392.0	-169.0	223.0	**0.0473**

The second tested variable is the number of pauses per minute (NPMIN). The difference between the means of the first sample (first performance of the task) and the second sample (task repetition) equals -8,64%, Table 3. Once again, the distribution of the pair differences significantly departs from the Gaussian distribution ($W = 0.8812$, $p = 0.0018$) pointing to the Wilcoxon matched pairs test to be used, Table 4. The p-value does not reach the threshold value indicating the significant difference between the number of pauses per minute between the populations. The pairing is effective ($rs = 0.720$, $p < 0.0001$) where the high value of the Spearman correlation coefficient can be noticed.

Table 3. Sample parameters for the number of pauses per minute (NPMIN)
Tablica 3. Rezultati za broj stanki u minuti (NSMIN)

NPMIN / NSMIN	First time / Prvi put	Repetition / Ponavljanje
Min	3.18	1.28
Me	13.92	13.08
Max	26.20	24.93
AM	14.47	13.22
StD	6.34	6.30
SE	1.10	1.10
AM difference / Razlika AM	-8.64%	

Legend / Legenda
Min – minimum sample value / najniža vrijednost u uzorku, Me – median / medijan, Max – maximum sample value / najviša vrijednost u uzorku, AM – arithmetic mean / aritmetička sredina, StD – standard deviation / standardna devijacija, SE – standard error / standardna pogreška

Table 4. Wilcoxon matched pairs test for the number of pauses per minute (NPMIN)
Tablica 4. Wilcoxonov test ekvivalentnih parova za broj stanki u minuti (NSMIN)

NPMIN / NSMIN	Wilcoxon matched pairs test / Wilcoxonov test ekvivalentnih parova			
	Sum of positive ranks / Zbroj pozitivnih rangova	Sum of negative ranks / Zbroj negativnih rangova	*W*	*p*
	401.0	-160.0	241.0	**0.0320**

Table 5. Sample parameters for the phonation-time ratio (PHTRATIO)
Tablica 5. Rezultati za omjer vremena fonacije i vremena govorenja (VFVGOMJER)

PHTRATIO / VFVGOMJER	First time / Prvi put	Repetition / Ponavljanje
Min	0.50	0.65
Me	0.83	0.84
Max	0.95	0.99
AM	0.79	0.84
StD	0.13	0.09
SE	0.02	0.02
AM difference / Razlika AM	6.33%	

Legend / Legenda

Min – minimum sample value / najniža vrijednost u uzorku, Me – median / medijan, Max – maximum sample value / najviša vrijednost u uzorku, AM – arithmetic mean / aritmetička sredina, StD – standard deviation / standardna devijacija, SE – standard error / standardna pogreška

Table 6. Paired t-test for the phonation-time ratio
Tablica 6. T-test za zavisne uzorke za omjer vremena fonacije i vremena govorenja

PHTRATIO / VFVGOMJER	Paired t-test / t-test za zavisne uzorke		
	t	*df*	*p*
	3.620	32	**0.0010**

In order to gain more insight into the influence of task repetition, a final observation about the breakdown fluency concerns the phonation-time ratio. The difference between the means equals 6.33%, Table 5. There is no evidence that the differences between the pairs significantly deviate from the normally distributed population ($W = 0.9540$, $p = 0.1734$). Hence, the parametric paired t-test can be utilised, Table 6. The p-value is lower than the threshold value pointing to the significant difference between the populations. The pairing is effective and the Pearson correlation coefficient almost reaches 0.8 ($rp = 0.797$, $p < 0.0001$).

4. DISCUSSION

A brief inspection of the presented tables and the performed statistical analysis points to the existence of significant differences in the average pause duration, number of pauses per minute, and the phonation-time ratio between the first and the repeated performance. Therefore, all three hypotheses have been confirmed. The significant differences regarding all investigated breakdown fluency measures may be explained by the trade-off hypothesis (Skehan, 1998). Due to the limited attentional capacity, speakers must decide which stage of speech production will be prioritised (i.e. conceptualisation, formulation, articulation, or monitoring). Therefore, while repeating the task, the speakers can rely on the previously formed conceptual plan and easily activate the recently used linguistic units which are still highly activated. Consequently, the attentional resources become freed up, reducing the level of attention towards the simultaneously running processes of conceptual planning, linguistic encoding, articulation, and monitoring. In other words, whereas the first encounter with the task requires certain trade-offs in terms of the distribution of attentional resources among the different stages of speech production, the second encounter significantly decreases these efforts, enabling the learners to reactivate the

previously formed content, as well as the linguistic units. Hence, the necessary production processes will be facilitated since there are strong connections between the conceptual plan and the lexical-grammatical forms which still have a high degree of priming due to the previous performance.

Lambert et al. (2017) provide evidence that the previous encounter with the task positively influences all three major processes involved in speech production including monitoring, which are reflected in substantial gains in fluency measures regardless of the proficiency level and task type. As a result of automatization and proceduralization, the speakers display a reduced need for pauses due to the priming influence. De Jong and Perfetti (2011) agree that the temporal fluency measures can mirror the degree and amount of chunking and automatization.

The presented findings regarding phonation-time ratio are particularly relevant if considered from the standpoint of perceived fluency. The ultimate goal of an L2 speaker is to attain nativelike fluency which is, in turn, evaluated by the listener. Previous research suggests that phonation-time ratio is also among the important variables relevant in the perception of fluency (Cucchiarini, Strik, & Boves, 2002; Kormos & Dénes, 2004).

An interesting observation is made by Lambert et al. (2017), who suggest that the improvements in fluency can be expected not only for lower proficiency students, but also for relatively high levels of proficiency. However, Segalowitz (2010) points to somewhat different conclusions compared to the ones observed by Lambert et al. (2017). In his view, the encoding mechanisms of proficient L2 speakers are relatively automated and more attentional resources are available for content conceptualisation, as well as for monitoring. Therefore, fewer gains from the task repetition are expected particularly for cognitively less demanding tasks. Yet, improvements might be achieved for tasks with high conceptualisation demands. With respect to the present study, the data analysis reveals that immediate repetition based on tasks with a highly structured nature, which are cognitively less demanding, significantly influences the number of pauses, average duration of pauses, and the amount of the total speaking time in the speech of more proficient learners of English. Therefore, the obtained results are in line with Lambert et al. (2017). For this reason, it is indeed reasonable to assume that there is substantial evidence that the task repetition has an effective

impact on the breakdown fluency even for more proficient speakers who perform cognitively less demanding tasks.

The results obtained in this study confirm the importance of implementing task repetition into classroom activities. Therefore, it is advisable to raise awareness about the positive effects of task repetition on fluency. If learners are introduced with the concept of fluency in general and perceived fluency in particular, prior to practicing these tasks, the learners will become more aware of how to draw on primed language. Consequently, they will become aware that primed language will positively influence the subsequent performances which will further increase oral fluency.

5. CONCLUSION

The study reported in this paper is an attempt to find out whether the repetition of a narrative significantly influences the breakdown fluency in the case of more proficient speakers. Also, it aimed to connect the psycholinguistic model of speech production and a particular condition under which the task is performed, i.e. task repetition, which might be helpful for L2 teaching. A close inspection of the presented findings indicates that a repeated practice of tightly structured narrative tasks results in significant breakdown fluency gains, not only for less proficient speakers, but also for more proficient speakers. The results might be explained by the attentional model of speech production and the trade-off hypothesis.

Fluency gains in terms of significant decreases in the occurrence and the duration of pauses, as well as an increase in the phonation-time ratio in the case of more proficient learners, point to the importance of task repetition as a vital classroom activity. Despite the increased researchers' interest in the task repetition supported by language research, it would be very interesting to investigate the extent to which the learners actually have the opportunity to practice task repetition in order to improve their oral proficiency.

Nevertheless, the present study has a few limitations. In particular, the gains were scored for a tightly structured picture description task, therefore, the results cannot be generalised for other task types. Also, we can only confirm short-term effects which are presumably the result of the reduced cognitive load and the high activation level of all speech encoding mechanisms.

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Hrvatska

Utjecaj neposrednog ponavljanja zadatka na učestalost i trajanje stanki u govoru

Sažetak

Cilj je ovoga rada ispitati utjecaj ponavljanja vrlo strukturiranog zadatka na govornu fluentnost, odnosno na broj stanki u minuti, prosječno trajanje stanki te na omjer vremena fonacije i vremena govorenja. U istraživanju su sudjelovala 33 hrvatska govornika engleskog jezika koji su dvaput obavili isti narativni zadatak. Varijable vremenske fluentnosti izmjerene su programom za analizu govora Praat (Boersma i Weenink, 2017). Analiza rezultata pokazuje da se ispitanici znatno rjeđe koriste stankama tijekom drugog ponavljanja zadatka te da se prosječno trajanje stanki značajno skraćuje. Također, značajna razlika dobivena je i za omjer vremena fonacije i vremena govorenja. Zabilježena poboljšanja u promatranim mjerenjima fluentnosti mogu se objasniti učinkom aktivacije te, posljedično, umanjenim kognitivnim naporom. Dobiveni rezultati istraživanja upućuju na zaključak da su dobro poznate teme s vrlo strukturiranom radnjom povezane s poboljšanjem govorne fluentnosti, ako se razmatraju stanke, čak i u govornika na višoj razini vladanja jezikom. Rezultati istraživanja imaju pedagoške implikacije u J2, s naglaskom na pozitivan učinak ponavljanja zadatka na razvoj govorne fluentnosti.

Ključne riječi: učestalost stanki, trajanje stanki, podučavanje temeljeno na zadacima, ponavljanje zadatka