Exploring the Influence of Individual Speaking Style, Cross-Linguistic Transfer of Language-Specific Fluency Patterns, and Proficiency on Second Language Oral Fluency

JESLA | Journal of the European Second Language Association

RESEARCH

WHITE ROSE UNIVERSITY PRESS
Universities of Leeds, Sheffield & York

ZOE L. HANDLEY
SIBLE J. ANDRINGA
HAIPING WANG

*Author affiliations can be found in the back matter of this article

ABSTRACT

This study explores the extent to which second language (L2) utterance fluency reflects individual speaking style and the transfer of language-specific fluency patterns associated with the learner's first language (L1) to the L2 and L2 proficiency. Chinese learners of English (N = 61) completed a speaking task in English twice six months apart. To assess the influence of individual speaking style, a parallel version was also completed in Mandarin. To check for cross-language contiguity in any relationships observed between L1 and L2 fluency, baseline data were collected from a sample of 13 native speakers of English. To control for proficiency, eight native speakers of English rated the communicative adequacy of the learners' productions. Chinese learners of English were observed to speak more slowly but not pause as long as native speakers of English at the start of the study in their L1, Mandarin, as well as their L2. Moderate to strong correlations were also observed between L1 and L2 fluency for these learners, but they weakened over time as learners' fluency profiles became more nativelike, a change which was significant for articulation rate and mean length of run, but not mean pause duration. Together these results suggest that some dimensions of L2 utterance fluency may reflect the transfer of language-specific fluency patterns or another dimension of proficiency, such as processing efficiency, as well as individual style of speaking.

CORRESPONDING AUTHOR:
Zoe L. Handley
Department of Education, The University of York, York, YO105DD, United Kingdom
zoe.handley@york.ac.uk

KEYWORDS:
speaking; fluency; cross-linguistic transfer

TO CITE THIS ARTICLE:
Handley, Z. L., Andringa, S. J., & Wang, H. (2024). Exploring the Influence of Individual Speaking Style, Cross-Linguistic Transfer of Language-Specific Fluency Patterns, and Proficiency on Second Language Oral Fluency. *Journal of the European Second Language Association*, 8(1), 34–47. DOI: https://doi.org/10.22599/jesla.124

DOI: 10.22599/jesla.124

1. INTRODUCTION

Fluency, the ability to speak at a good pace without excessive pausing and hesitating, has long been recognized as a key component of oral proficiency. As such, utterance fluency (i.e., the overt manifestation of fluency in the temporal features speed), breakdown (i.e., pausing), and repair (i.e., self-correction and repetition; Skehan, 1998), are referenced in many language benchmarks and standardized speaking tests (de Jong, 2018). Even the speech of native speakers, however, varies significantly on measures of fluency (see de Jong et al., 2015, for a review). It has therefore been suggested that oral fluency may in part be a trait (Derwing et al., 2009) determined by individual differences (Towell & Dewaele, 2005). This brings into question the validity of referencing utterance fluency in speaking assessment rubrics.

There are, however, also differences in how oral fluency manifests itself across languages, with studies observing cross-linguistic differences in speech rate and articulation rate (e.g., Pellegrino et al., 2011; Trouvain & Möbius, 2014), in the frequency and duration of pauses (e.g., Grosjean & Deschamps, 1975; Riazantseva, 2001), and in the function of repairs (e.g., Crible & Pascual, 2020). Measures of L2 fluency may therefore also reflect the influence of a learner's first language (L1) fluency patterns on their second language (L2; Derwing et al., 2009; Huensch & Tracy-Ventura, 2017; Riazantseva, 2001). In other words, measures of L2 fluency may also reflect cross-linguistic transfer, the influence of language-specific fluency patterns associated with the learners' L1 on their L2 (Jarvis, 2000; 2010).

With a focus on establishing how much cross-linguistic transfer might offer another possible explanation for the relationship consistently observed between L1 and L2 fluency (e.g., Derwing et al., 2009; Duran-Karaoz & Tavakoli, 2020; de Jong et al., 2015; Towell & Dewaele, 2005), the current study explores the extent to which Chinese learners' fluency patterns in English reflect cross-linguistic differences in fluency patterns across their L1 Mandarin and whether Chinese learners' fluency patterns in English become more similar to those of L1 speakers over English over time.

2. BACKGROUND

As outlined in the rationale, fluency patterns can be language-specific, with some dimensions of fluency differing across languages. In addition to individual speaking style, cross-linguistic transfer, that is "the influence resulting from similarities and differences between the target language and any other language that has been previously … acquired" (Odlin, 1989), might therefore provide another explanation (Huensch & Tracy-Ventura, 2017) for relationships observed between L1 and L2 utterance fluency.

To build a case for cross-linguistic transfer it is necessary to find evidence of at least one, and ideally all, of the following:

1. Intra-L1-group homogeneity in L2 utterance fluency (i.e., intragroup homogeneity, which means that learners from the same L1 background speak the L2 at a similar rate and with similar patterns of pausing and hesitation),
2. Inter-L1-group heterogeneity in L2 utterance fluency (i.e., intergroup heterogeneity, which means that learners from different L1 backgrounds speak the L2 at a different rate and/or with different patterns of pausing and hesitation),
3. Intra-L1-group congruity between L1 utterance fluency and L2 utterance fluency (i.e., cross-language contiguity, which means that learners' speech rate and patterns of pausing and hesitation in the L2 reflect differences between the L1 and the L2 in these domains (see Jarvis, 2000, 2010).

Research on L2 fluency consistently observes a relationship between L1 and L2 fluency (Bradlow et al., 2017; de Jong et al., 2015; Derwing et al.,2009; Duran-Karaoz & Tavakoli, 2020; Kahng, 2020; Huensch & Tracy-Ventura, 2017; Kim et al., 2013; Peltonen, 2018; Sehgal, 2021; Towell & Dewaele, 2005), which pertains to intra-L1 group homogeneity in L2 utterance fluency. Whether that relationship reflects the transfer of fluency patterns associated with the learner's L1 to their L2 (Huensch & Tracy-Ventura, 2017), individual speaking style (Derwing et al., 2009), L2 proficiency or another variable, however, remains unclear. Few studies have compared the L2 utterance fluency of learners from different L1 backgrounds or compared

DOI: 10.22599/jesla.124

the learners' speech rate and patterns of pausing and hesitation in the L2 with the differences observed between their L1 and L2. Moreover, few studies have controlled for other potential influences on L2 utterance fluency, such as L2 proficiency and exposure to the target language (Jarvis, 2000, 2010).

With respect to inter-L1-group heterogeneity, Derwing et al. (2009) compared utterance fluency in English across Slavic (Russian and Ukrainian) speakers and Mandarin speakers who had recently arrived in Canada. Observing stronger relationships which persisted over time between L1 pause rate and L2 pause rate and between L1 pruned syllable rate and L2 pruned syllable rate for the Slavic speakers of English than the Mandarin speakers of English, these results appear to support cross-linguistic transfer. The question, however, remains open whether the learners' fluency in English reflects cross-linguistic differences between the learners' L1 and their L2, in the absence of comparisons with baseline data from speakers of English as an L1. On the other hand, de Jong et al. (2015), in their research with Turkish and English learners of Dutch, observed significant differences in L1 utterance fluency across the two groups of learners but no differences in utterance fluency in their L2, Dutch. While there is evidence in the broader literature on SLA that cross-linguistic transfer can increase with increases or decreases in proficiency (Jarvis, 2000, 2010), the absence of an influence of the L1 may, however, be explained by the relatively high language proficiency (Common European Framework for the Reference of Languages (CEFR) levels B1/B2) of the learners in de Jong et al.'s (2015) study. As suggested by Riazantseva (2001), citing Sajavaara (1987), acquiring an L2 involves acquiring the fluency conventions of that language including, for example, where it is acceptable to pause.

With respect to cross-language contiguity in learners' L2 utterance fluency, as far as it is possible to establish, Riazantseva (2001) and Huensch and Tracy-Ventura (2017) are the only studies to have compared learners' L2 utterance fluency with baseline data from native speakers of their L1 and L2. Riazantseva (2001) focused on pausing patterns and compared the pausing behavior of intermediate-level Russian learners of English with that of advanced-level learners and native speakers of both languages. Her primary observation was that advanced-level learners paused for less time when speaking English than when speaking Russian, but intermediate-level learners did not. These differences were contiguous with differences observed between native speakers of Russian and English. That is, the Russian speakers in this study tended to pause for longer than the English speakers. The Russian learners were observed to pause more often than the English speakers generally and within constituent boundaries, and advanced-level learners were observed to pause less often than intermediate-level learners. No differences were, however, observed across native speakers of Russian and English along these dimensions of oral fluency. In other words, these differences between the learners and native speakers of English were not contiguous with cross-language differences between Russian and English.

In Huensch and Tracy-Ventura's (2017) study, which explored oral fluency development among a cohort of English learners of French and Spanish studying abroad, correlations between new dimensions of L1 utterance fluency and L2 utterance fluency were observed to emerge over the course of the stay abroad. L1 fluency data were only collected at the end of the learners' stay abroad and there were no differences in measures of L1 utterance fluency across the learners of French and Spanish. If we assume that the absence of a difference in L1 utterance fluency across the two groups of learners after a nine-month stay abroad means that individual speaking style is an enduring trait (Derwing et al., 2009), then the emergence of new correlations might be interpreted as evidence of transfer of L1-specific fluency patterns to the L2—transfer has been shown in the broader literature to increase with increases in proficiency and to occur at lower levels of proficiency (Jarvis, 2000). Huensch and Tracy-Ventura's (2017) comparison of utterance fluency across native speakers of English, French, and Spanish further supports this interpretation. Significant differences were observed across the three languages, where correlations between the L1 and L2 had strengthened or emerged after the period of study abroad. In other words, Huensch and Tracy-Ventura (2017) provide evidence of cross-language contiguity between the learners' L1 utterance fluency and their L2 utterance fluency. Moreover, Huensch and Tracy-Ventura (2017) observed an effect of target language, for models predicting some of these dimensions of L2 utterance fluency from their L1 correlates, target language and proficiency.

Other research has explored how proficiency and L2 exposure moderate the relationship between L1 and L2 utterance fluency. Towell and Dewaele (2005), exploring oral fluency development

DOI: 10.22599/jesla.124

among English learners of French, found that L2 fluency was less strongly correlated with L1 fluency at the end of a six-month stay abroad than at the start. L1 fluency data were only collected before they embarked on study abroad. If we assume that L1 fluency remains constant and individual speaking style is an enduring trait (Derwing et al., 2009), as Sehgal (2021) observds in a similar study, then these results might be interpreted as providing evidence of a reduction in transfer of speech rate and patterns of pausing and hesitation from the L1 to the L2. Comparisons with baseline data from native speakers are, however, required to confirm that these patterns of development are contiguous with differences between their L1 and their L2.

3. CURRENT STUDY

In light of previous research, there is some evidence that the relationship frequently observed between L1 and L2 fluency might arise from the influence of L1-specific speech rate and patterns of pausing and hesitation on the L2 and from the influence of a personal speaking style. To tease out the influences on L2 fluency, it is essential to explore the extent to which these relationships reflect differences between the L1 and L2 as spoken by highly proficient speakers of those languages and the extent to which L2 utterance fluency differs across learners from different language backgrounds. It is also important to control for proficiency and/or exposure to the target language with different L1/L2 pairs. With a view to advancing our understanding of the degree to which the relationship frequently observed between L1 and L2 utterance fluency reflects individual speaking style and/or transfer of language-specific fluency patterns from the learners' L1 to their L2, we collected L2 oral production samples from Chinese learners of English at two time points in time, six months apart. We also collected L1 oral production samples from those same learners and from a group of L1 speakers of English. We asked L1 speakers of English to rate the learners' communicative adequacy, a fundamental component of proficiency (de Jong et al., 2012; Kuiken et al., 2010; Pallotti, 2009). Communicative or functional adequacy refers to the extent to which learners are able to successfully complete a task and convey information in the target language (Kuiken et al., 2010; Pallotti, 2009; Révész et al., 2014). With respect to Jarvis' (2000, 2010) framework for establishing evidence of cross-linguistic transfer, these data allow us to establish Chinese learners' fluency patterns in English, compare them with those of L1 speakers of English, establish the extent to which the differences reflect differences between Mandarin and English, and explore whether their fluency patterns in English become more similar to those of L1 speakers of English over time. The current study was guided by the following research questions:

1. To what extent does utterance fluency (specifically, articulation rate, mean length of run and mean pause duration) differ across Chinese learners of English and native speakers of English?
2. To what extent does utterance fluency differ across native speakers of Mandarin and English?
3. What is the relationship between L1 and L2 utterance fluency for Chinese learners of English?
4. To what extent does the relationship between L1 and L2 utterance fluency for Chinese learners of English change as a result of exposure to the target language, if you control for proficiency?

3.1. METHOD

3.1.1. Participants and context

The results of this study are based on 61 Chinese learners of English, of which 25 (all women) were studying at a university in the North East of England, and 36 (six men, 30 women) were studying at a university in East China.[1] Their ages ranged from 20 to 28 years (M = 23.02; SD = 1.36), and the age at which they began learning English ranged from 5 to 15 years old (M

1 Learners studying in China and the United Kingdom were recruited to ensure a diversity in the proficiency level of the sample. Seventy-six Chinese learners of English studying for a Master's degree volunteered to participate in the study. Data from fifteen learners were omitted from the analyses presented here, two because they did not complete the second phase of the study, two due to missing communicative adequacy ratings, two because the recordings were not of sufficiently good quality to generate measures of fluency, and nine because their scores were outliers on at least one of the measures of fluency due to background noise interfering with the automatic calculation of fluency measures (see section 3.1.3).

= 10.00; *SD* = 2.06). Overall International English Language Testing System (IELTS) scores for learners studying for a master's degree in the United Kingdom ranged from 6.0 to 7.5 (*n* = 25; *M* = 6.58, *SD* = 0.45; equivalent CEFR B2/C1), with scores on the speaking component ranging from 5.0 to 7.5 (n = 25; *M* = 5.94, *SD* = 0.53). Learners studying for a Master's degree in China achieved between 409 and 626 (*n* = 18; *M* = 503, SD = 64.86) on the College English Test (CET) 6 (equivalent CEFR B1 – B2).

Thirteen native speakers of English volunteered to provide baseline data (5 men and 6 women). All were recruited from the student population at the university in the North East of England. Their ages ranged from 18 to 22 (*M* = 19.62, *SD* = 1.04). Another eight native speakers of English studying at the same university volunteered to rate the communicative adequacy of the learners' oral productions for communicative adequacy. All participants were given £5 per hour compensation.

3.1.2. English and Mandarin speaking tasks

Oral fluency in English was measured using an IELTS-style monologic speaking task (Case, 2008). To avoid learning effects, two versions of the speaking task, one focusing on talking about a holiday and one focusing on describing a journey, were employed and their administration was counterbalanced (Case, 2008). See below for confirmation of the comparability of the two versions of the task. Oral fluency in Mandarin was measured in the same way using Case's (2008) "travel plans" task which was translated into Mandarin.

The tasks were presented on paper, and participants were given two minutes to plan before talking on the topic for two minutes. The learners completed the English task first, then the Mandarin task. Recordings were made using a USB headset (Microsoft LifeChat LX-300) and the laptop's Sound Recorder.

3.1.3. Measuring fluency

Of the many measures of oral fluency reported in previous research, this study focused on measures of speed and breakdown fluency (see Tables 1 and 2). This decision was based on previous research that has typically observed that these measures are most strongly associated with perceived fluency (see Suzuki et al., 2021). Many of the measures of speed and breakdown fluency frequently reported in the literature are either logical equivalents or measure the same underlying construct (see Kormos & Dénes, 2004, and Segalowitz et al., 2017, for definitions and analysis, respectively). Bivariate Pearson correlations were run between all candidate measures of speed and breakdown fluency to identify independent constructs (Bosker et al., 2012; Segalowitz et al., 2017). High inter-correlations suggest that measures are tapping the same underlying dimension of oral fluency. Only one measure was therefore retained for each dimension of oral fluency, namely articulation rate, mean length of run in syllables, and mean pause duration. These were selected on the basis of their independence of other dimensions of fluency, congruence with the defined underlying construct and interpretability.

Table 1 Pearson correlations between L2 (English) fluency measures for Mandarin learners of English (n = 61).

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

			M (SD)	1	2	3	4	5	6	7
1.	Speech Rate (Syll./Sec.)	95% CI	2.43 (.46) 2.31–2.55	1						
2.	Articulation Rate (Syll./Sec.)	95% CI	3.25 (.42) 3.14–3.36	.748** .611–.841	1					
3.	Pauses per Minute	95% CI	26.57 (6.47) 24.91–28.22	–.484** –.656–-.264	.092 –.164–.336	1				
4.	Pauses per 100 Syllables	95% CI	19.29 (7.02) 17.49–21.09	–.820** –.889–-.716	–.324* –.532–-.078	.876** .801–.924	1			
5.	Mean Pause Duration (Millisecs.)	95% CI	564 (123) 533–596	–.706** –.813–-.552	–.263* –.483–-.012	.328** .083–.536	.583** .388–.728	1		
6.	Mean Length of Run (Secs.)	95% CI	1.81 (.73) 1.63–2.00	.553** .350–.707	–0.014 –.265–.238	–.932** –.959–-.889	–.860** –.914–-.776	–.488** –.659–-.269	1	
7.	Mean Length of Run (Syll.)	95% CI	5.89 (2.46) 5.26–6.52	.762** .631–.850	.286* .036–.501	–.869** –.919–-.790	–.916** –.949–-.864	–.549** –.794–-.345	.950** .917–.970	1

			M (SD)	1	2	3	4	5	6	7
1.	Speech Rate (Syll./Sec.)	95% CI	2.83 (.40) 2.72–2.93	1						
2.	Articulation Rate (Syll./Sec.)	95% CI	3.56 (.41) 3.46–3.66	.718** .570–.822	1					
3.	Pauses per Minute	95% CI	22.05 (6.89) 20.29–23.82	–.429** –.614–-.198	.219 –.035–.446	1				
4.	Pauses per 100 Syllables	95% CI	13.54 (5.38) 12.16–14.92	–.708** –.815–-.555	–.100 –.344–.155	.928** .882–.956	1			
5.	Mean Pause Duration (Millisecs.)	95% CI	549 (105) 522–577	–.475** –.649–-.254	–.001 –.253–.251	.259* .008–.479	.400** .164–.529	1		
6.	Mean Length of Run (Secs.)	95% CI	2.46 (1.26) 2.14–2.78	.399** .163–.591	–.216 –.444–.038	–.908** –.944–-.851	–.835** –.898–-.739	–.342** –.547–-.099	1	
7.	Mean Length of Run (Syll)	95% CI	8.65 (4.19) 7.58–9.73	.579** .383–.725	.004 –.248–.256	–.893** –.934–-.827	–.881** –.927–-.809	–.336** –.542–-.092	.971** .952–.982	1

Table 2 Pearson correlations between L1 (Mandarin) fluency measures for Mandarin learners of English.

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Before the coding, the recordings were cleaned. That is, any off-task talk, coughs and throat clearings were removed from the recordings (see Burchfield & Bradlow, 2014). Then, the first 60 seconds of talk was extracted and the recordings were automatically coded for syllables (i.e., syllable nuclei) and silent pauses using de Jong and Wempe's (2009) PRAAT script. High correlations between manual and automated coding of syllables were observed in de Jong and Wempe's (2009) study.

3.1.4. Communicative adequacy

An adapted translation of de Jong et al.'s (2012) communicative adequacy scale, which focuses on the informativeness and comprehensibility of learners' oral productions, was used in the current study. The experimental stimuli comprised the learners' productions in the English-speaking task. The practice stimuli comprised data collected from two learners who only participated in the first phase of the study.

The eight English listeners who were recruited to rate the learners' English productions were randomly allocated to one of four groups. Each rater only rated each participant once. That is, they only rated either their Time 1 production or their Time 2 production. Half of the participants they rated at Time 1 were studying in the United Kingdom and half were studying in China, and they rated the opposite half at Time 2. To mitigate order effects, time, country, and order of presentation were counterbalanced across the four groups of raters. Having completed the practice trials, the experimental trials were presented in randomized order. A good level of inter-rater reliability was achieved (Intra-class Correlation Coefficient; ICC; consistency; average measures) for version A = .84 and for version B = .85; Field, 2014).

3.1.5. Analysis

Before running inferential analyses, the data were checked for normality, including skewness and kurtosis, and outliers (defined here as more than three standard deviations above or below the group mean).

To answer our first research question and establish whether there are differences in utterance fluency across the Chinese learners of English and native speakers of English, we calculated the mean and standard deviation for each of our measures of utterance fluency and ran a series of independent-samples t-tests. Similar analyses were run to answer our second research question and establish whether there are differences in utterance fluency across native speakers of Mandarin and English. To answer our third research question and establish whether there is a relationship between L1 and L2 fluency for Chinese learners of English, we ran a series of Pearson correlations. To answer our final research question and establish whether the relationship between L1 and L2 fluency changes as a result of exposure to the target language, operationalized here as time, we ran a series of linear mixed regression models entering communicative adequacy as a control variable, time and L1 oral fluency as predictor variables, and a variable testing the interaction between the predictor variables:

DOI: 10.22599/jesla.124

L2 fluency ~ Time * L1 Fluency + Communicative Adequacy

We ran one model per measure of L2 oral fluency (L2 articulation rate, L2 mean length of run, and L2 mean pause duration), with its counterpart L1 fluency measure included as the L1 fluency predictor. These models can shed light on the extent to which measures of L2 oral fluency reflect individual speaking style and the transfer of L1-specific fluency patterns. A main effect of communicative adequacy would be indicative of proficiency effects. A main effect of L1 fluency suggests that there are similarities between L1 and L2 fluency and would be indicative of an individual speaking style effect. More strength to this interpretation should be given if this effect is stable over time. It could also be that the strength of the L1 effect changes over time. This outcome would suggest that fluency patterns in the L2 are transferred from the L1, especially if we were to find that the effect becomes smaller and that the fluency patterns in the L2 start to resemble those of L1 speakers of English more.

The factor structure of the models was explored using Restricted Maximum Likelihood (REML) estimation. Inspection of the Akaike Information Criterion (AIC) suggested that all models should include participant and country[2] as between-participants random effects and that the version of the speaking task should also be included as a between-participants random effect in the models for mean length of run and mean pause duration. Country was, however, excluded from the model for mean pause duration because its effect was not possible to estimate. The random slope for L1 fluency was not included as models failed to converge upon its inclusion. We applied orthogonal sum-to-zero contrast coding to our binary fixed effect (time; Baguley, 2012). The analyses were carried out in R (R Core Team, 2015) using the lme4 package (Bates et al., 2015).

3.2. RESULTS

3.2.1 Descriptive statistics and group differences

Descriptive statistics were calculated to explore our first two research questions: (1) Whether the utterance fluency profiles of Chinese learners of English differed from those of native speakers of Mandarin and English at time 1 and time 2, and (2) whether those differences reflected differences between the utterance fluency profiles of L1 speakers of Mandarin and English. A further purpose was to establish whether the learners improved in terms proficiency, operationalized as communicative adequacy, over the course of the study.

Table 3 shows the mean and standard deviation for the measures of utterance fluency and communicative adequacy. A higher score represents better performance on all measures with the exception of mean pause duration, where a lower score represents better performances. With respect to the first question of whether Chinese learners' fluency profiles differed from those of native speakers of English, these data show that the Chinese learners of English in this study spoke more slowly than the native speakers of English, but that their pauses were somewhat shorter, with statistically significant differences in articulation rate (time 1: $t(70) = -5.809$, $p < .001$, $d = 1.61$; time 2: $t(67) = -6.079$, $p < .001$, $d = 1.64$) but not mean pause duration (time 1: $t(85) = -1.701$, $p = .10$, $d = .36$; time 2: $t(85) = -.837$, $p = .41$, $d = .16$). Differences in mean length of run, however, emerged over the course of the study, with the Chinese learners of English speaking in shorter runs than the L1 English speakers at time 2 (time 1: $t(75) = .239$, $p = .81$, $d = -.07$; time 2: $t(85) = -2.812$, $p = .01$, $d = .63$). The decrease in mean length of run from time 1 to time 2 was statistically significant ($t(60) = 3.749$, $p < .001$, $d = .48$), as was the increase in mean pause duration ($t(60) = -2.158$, $p = .04$, $d = -.28$). No differences were, however, observed in articulation rate from time 1 to time 2 ($t(60) = .199$, $p = .84$, $d = .03$).

With respect to the second question of whether these differences between Chinese learners and L1 speakers of English reflect differences between Mandarin and English, data elicited from the learners speaking their L1, Mandarin, were compared with data elicited form native speakers of English. These data show that, on average, the native speakers of Mandarin in this

2 Country was included in our models to control for a potential effect of context on levels of oral fluency.

DOI: 10.22599/jesla.124

study spoke somewhat slower, but in longer runs and with shorter pauses than the native speakers of English, differences which were statistically significant for mean length of run ($t(83) = 4.701$, $p < .001$, $d = -1.94$) and mean pause duration ($t(85) = -2.390$, $p = .02$, $d = .46$), but not for articulation rate ($t(68) = -1.837$, $p = .07$, $d = .50$). These results should be interpreted with caution because while there was greater variation among the native speakers of Mandarin than the native speakers of English for articulation rate (Mandarin *SD* = .40; English *SD* = .28) and mean length of run (Mandarin *SD* = 4.17; English *SD* = 1.48), there was greater variation among the native speakers of English than the native speakers of Mandarin for mean pause duration (English *SD* = 144; Mandarin *SD* = 105).

Descriptive statistics were also calculated for the ratings of communicative adequacy. Table 3 shows the mean and standard deviation for these measures at time 1 and time 2. These data show that, on average, the Chinese learners of English improved in their overall communicative adequacy. This was confirmed by paired-samples t-tests (Communicative adequacy: $t(60) = -3.24$, $p = .002$, $d = .28$), although the size of the effect was small (Plonsky & Oswald, 2014).

MEASURE		L1 ENGLISH	L1 MANDARIN	L2 ENGLISH	
				TIME 1	TIME 2
Articulation rate (syll./sec.)	Mean (SD) 95% CI	3.70 (0.28) 3.59–3.81	3.56 (0.40) 3.46–3.66	3.25 (0.42) 3.14–3.36	3.24 (0.40) 3.14–3.35
Mean length of run (in syllables)	Mean (SD) 95% CI	5.79 (1.48) 5.18–6.38	8.65 (4.17) 7.58–9.73	5.89 (2.46) 5.26–6.52	4.86 (1.38) 4.51–5.21
Mean pause duration (milliseconds)	Mean (SD) 95% CI	616 (144) 558–674	549 (105) 522–576	564 (123) 533–595	592 (108) 565–620
Communicative adequacy (0–7)	Mean (SD) 95% CI			3.89 (1.11) 3.61–4.17	4.20 (1.23) 3.88–4.51

Table 3 Descriptive statistics for measures of fluency and communicative adequacy.

Note. Native speakers of English ($n = 13$). Chinese learners of English ($n = 61$).

3.2.2. Correlations between L1 and L2 utterance fluency

To explore our third question, namely the relationship between L1 and L2 utterance fluency for Chinese learners of English, simple correlations were computed between measures of L1 and L2 fluency for the Chinese learners. These data show moderate to strong positive correlations between the learners' fluency in their L1 (i.e. Mandarin) and their fluency in their L2 (i.e. English) at time 1 (Articulation rate: $r(59) = .62$, $p < .001$, 95% CI [.43, .75]; Mean length of run: $r(59) = .62$, $p < .001$, 95% CI [.44, .76]; Mean pause duration: $r(59) = .54$, $p < .001$, 95% CI [.33, .70]). Similar correlations were also observed at time 2 but were weaker for articulation rate and mean length of run (Articulation rate: $r(59) = .34$, $p < .001$, 95% CI [.10, .55]; Mean length of run: $r(59) = .34$, $p < .001$, 95% CI [.10, .54]; Mean pause duration: $r(59) = .55$, $p < .001$, 95% CI [.34, .70]). As such, the data suggest that L2 fluency patterns become less like those of their native language over time.

3.2.3. Exploring the influences on L2 utterance fluency

So far, we have established that the utterance fluency profiles of Chinese learners of English differ from those of native speakers, as do the utterance fluency profiles of native speakers of Mandarin. We have also seen that there is a moderate to strong relationship between L1 and L2 utterance fluency for the Chinese learners of English, although this relationship appears weaker at time 2. Next, we explored our our final research question and attempted to tease out the extent to which the observed relationship between L1 and L2 fluency among the Chinese learners of English can be attributed to oral proficiency, individual speaking style and/or the transfer of the observed differences between Mandarin and English fluency (i.e., cross-linguistic differences). A regression model was fit to the Chinese learners' fluency in their L2 as a function of their fluency in the L1, time, and their level of communicative adequacy. The results are presented in Tables 4 through 6. The results revealed an effect of L1 fluency ($\beta = .47$, $p < 0.001$) and time ($\beta = 1.08$, $p = 0.013$) and an interaction between time and L1 fluency for L2 articulation rate ($\beta = -.31$, $p = 0.011$), but there was no effect of communicative adequacy

DOI: 10.22599/jesla.124

(β = .03, p = 0.211; see Table 4). In other words, these results confirm that there is a moderate weakening in the relationship between L1 articulation rate and L2 articulation rate over time. For mean length of run, on the other hand, effects of communicative adequacy (β = .48, p = 0.001) and of L1 mean length of run (β = .12, p = 0.016) and an interaction between Time and L1 mean length of run (β = –.24, p < 0.001; see Table 5) were observed. These results also show a small weakening in the relationship between L1 mean length of run and L2 mean length of run over time, even if you control for communicative adequacy, which is related to L2 mean length of run. Furthermore, the effect of time approached significance for mean length of run (β = 1.05, p = 0.056). The pattern of effects was different again for L2 mean pause duration, with an effect of communicative adequacy (β = –29.94, p < 0.001) and an effect of L1 mean pause duration (β = .53, p < 0.001), but no effect of time (β = 44.98, p = 0.513) and no interaction between Time and L1 mean pause duration (β = –.04, p = 0.714; see Table 6). In other words, these results suggest that the relationship between L1 mean pause duration and L2 mean pause duration remains stable over time, even if you control for communicative adequacy, which is related to L2 mean pause duration.

Table 4 Model results for L2 articulation rate.[3]

N = 122.

Marginal R^2/Conditional R^2 = 0.224/0.653.

AIC = 100.64.

PREDICTORS	ESTIMATES	95% CONFIDENCE INTERVAL (CI)	*P*-VALUE
Intercept	1.48	0.84–2.12	<0.001
Time	1.08	0.24–1.93	0.013
L1 articulation rate	.47	0.32–0.62	<0.001
Communicative adequacy	.03	–0.02–0.09	0.211
Time * L1 articulation rate	-.31	–0.55–-0.07	0.011
RANDOM EFFECTS			
σ^2	.07		
$\tau_{00\ Participant}$	.02		
$\tau_{00\ Country}$	.07		
ICC	.55		
$N_{Participant}$	61		
$N_{Country}$	2		

Table 5 Model results for L2 mean length of run.[4]

N = 122.

Marginal R^2/Conditional R^2 = 0.290/0.583.

AIC = 490.61.

PREDICTORS	ESTIMATES	95% CI	*P*-VALUE
Intercept	2.49	0.74–4.23	0.006
Time	1.05	–0.03–2.14	0.056
L1 mean length of run	.12	0.02–0.22	0.016
Communicative adequacy	.48	0.21–0.75	0.001
Time * L1 mean length of run	-.24	–0.36–-0.12	<0.001
RANDOM EFFECTS			
σ^2	1.68		
$\tau_{00\ Participant}$	.57		
$\tau_{00\ Country}$	.54		
$\tau_{00\ Task\ version}$	.07		
ICC	.41		
$N_{Participant}$	61		
$N_{Country}$	2		
$N_{Task\ version}$	2		

3 L2 articulation rate ~ Time * L1 articulation rate + CA + (1|Participant) + (1|Country).

4 L2 mean length of run ~ Time * L1 mean length of run + CA + (1|Participant) + (1|Country) + 1(Task version).

DOI: 10.22599/jesla.124

PREDICTORS	ESTIMATES	95% CI	*P*-VALUE
Intercept	410.90	270.77–551.02	<0.001
Time	44.98	–90.72–180.68	0.513
L1 mean pause duration	.53	0.34–0.71	<0.001
Communicative adequacy	–29.94	–46.22–-13.65	<0.001
Time * L1 mean pause duration	–.04	–0.28–0.19	0.714
RANDOM EFFECTS			
σ^2	4699.54		
$\tau_{00\ Participant}$	3612.60		
$\tau_{00\ Task\ version}$	816.41		
ICC	.49		
$N_{Participant}$	61		
$N_{Task\ version}$	2		

Table 6 Model results for L2 mean pause duration.[5]

N = 122.

Marginal R^2/Conditional R^2 = 0.358/0.670.

AIC = 1474.8.

4. DISCUSSION

The current study set out to better understand the influences on L2 fluency and, in particular, the extent to which L2 fluency reflects the transfer of L1-specific fluency patterns to the L2. A sample of Chinese learners of English were asked to complete an IELTS-style monologic speaking task twice six months apart, and a sample of native speakers of English were also asked to complete the same tasks. Chinese learners of English were observed to speak more slowly but not pause as long as native speakers of English at the start of the study (research question 1), reflecting differences in L1 utterance fluency observed between native speakers of Mandarin and English (research question 2). Moderate to strong correlations were also observed between L1 and L2 fluency for the Chinese learners of English for all dimensions of utterance fluency at the start of the study (research question 3). The strength of these relationships decreased over time, with the Chinese learners speaking in shorter runs with longer pauses between runs than at the start of the study in a style that more closely reflected that of the native speakers of English. More specifically, the effect of L1 fluency that was observed for all measures of L2 fluency, was found to reduce over time for L2 articulation rate and L2 mean length of run, but not L2 mean pause duration. Proficiency effects, operationalized in this study as communicative adequacy, were only observed for L2 mean length of run and L2 mean pause duration (research question 4).

Together these results suggest that L2 utterance fluency reflects L1-associated fluency patterns as well as individual speaking style. The differences observed between the Chinese learners' fluency in English and that of native speakers of English are contiguous with the differences observed between the learners' fluency in their L1 and that of the native speakers of English. Moreover, while the learners may appear to be becoming less fluent, speaking in shorter runs with longer pauses, their fluency profiles at the end of the study are more targetlike because the English L1 speakers in this study were observed to speak in shorter runs with longer pauses compared to when they spoke in their L1, Mandarin. In other words, our data provide evidence of cross-language contiguity in L2 utterance fluency and intra-L1 group homogeneity in L2 utterance fluency (see Jarvis, 2000).

More specifically, the results of the regression analyses suggest that the different measures of L2 utterance fluency reflect different influences on L2 utterance fluency, including L1-associated fluency patterns, individual speaking style and L2-associated fluency patterns. While all dimensions of L2 utterance fluency were predicted by their L1 correlates, an interaction was observed between L1 fluency and time for articulation rate and mean length of run, but not for mean pause duration. The relationship between L1 utterance fluency and L2 utterance fluency, thus, changed over time for articulation rate and mean length of run, but not mean pause

5 L2 mean pause duration ~ Time * L1 mean pause duration + CA + (1|Participant) + (1|Task version).

DOI: 10.22599/jesla.124

duration. These results suggest that articulation rate and mean length of run may reflect L1-associated fluency patterns and individual speaking style, but mean pause duration does not.

The fact that no differences were observed in articulation rate across Mandarin and English, however, seems to contradict the possibility of cross-linguistic influences on L2 articulation rate. With respect to mean pause duration, it is possible that mean pause duration may also reflect L1-associated fluency patterns, but there was insufficient change in mean pause duration among the learners in this study to detect transfer effects. The effect size for the difference in mean pause duration in Mandarin versus English is much smaller than the effect size for the difference in mean length of run. Previous research consistently observes cross-linguistic differences in pause duration for other language pairs (see Riazantseva, 2001, for a review).

Caution, however, should be exercised in interpreting the findings of this research. Measures of L1 fluency were only obtained at time 1. The evidence that L1 fluency is a trait that endures over time and is not influenced by L2 exposure is somewhat limited: Measures of L1 fluency are rarely collected in study abroad research, for example (see Tullock & Ortega, 2017, for a review). This is problematic because there is ample evidence that exposure to an L2 may have an impact on other dimensions of L1 proficiency (Montrul, 2008).

The sample of learners in the present study is also largely limited to female students, whereas the sample of native speakers is more balanced. As noted in the literature review, previous research has consistently observed differences in utterance fluency associated with gender, with men tending to speak slightly faster than women and with faster speech associated with shorter runs (see Jacewicz et al., 2010, for a review). It is therefore possible that the cross-language differences observed between Mandarin and English might be explained by differences in the gender balance of the samples rather than cross-linguistic differences. In line with the findings of Jacewicz et al.'s (2010) review, the native speakers of English that comprised a larger proportion of men, had a higher articulation rate and spoke in shorter runs, compared to the Chinese learners, who were predominantly women, when speaking in their native language, Mandarin.

Moreover, baseline data were collected from native speakers of English representative of the student population that the Chinese learners with living among and studying alongside (i.e., native speakers of English with comparable levels of literacy and general education to the learners, as recommended by Hulstijn et al., 2012). Evidence, however, suggests that such academic populations are not representative of the general native-speaker population, performing higher on a range of linguistic tasks, in particular on measures of accuracy (Andringa, 2014). It is therefore unrealistic to expect learners to attain the same levels of proficiency in the target language as students for whom the target language is their first language (Andringa & Godfroid, 2020).

5. CONCLUSION

In conclusion, the results of this study suggest that cross-linguistic transfer and dimensions of proficiency have an influence on some measures of L2 utterance fluency (mean length of run and articulation rate, respectively), while other measures of L2 utterance fluency may be determined by individual speaking style alone (namely, mean pause duration). In this study, we collected evidence that learners from the same L1 background speak the L2 at a similar rate and with similar patterns of pausing and hesitation (i.e., intra-group homogeneity), and evidence that learners' speech rate and patterns of pausing and hesitation in the L2 reflect differences between the L1 and the L2 in these domains (i.e., cross-language contiguity). The argument for cross-linguistic transfer would be strengthened by also collecting evidence that learners from different L1 backgrounds speak the L2 at a different rate and/or with different patterns of pausing and hesitation (i.e., evidence of inter-group heterogeneity; Jarvis, 2000, 2010). Moreover, in addition to conducting studies that control for L2 exposure and proficiency (Jarvis, 2000, 2010), as in the current study, future research should pay close attention to the composition of the samples of speakers that they are comparing and in terms of gender of the speakers and academic background (Andringa, 2014; Hulstijn et al., 2012). Should such research confirm our finding that mean pause duration reflects individual speaking style alone, its use in speaking assessment rubrics, is brought into question.

ETHICS AND CONSENT

Full ethical procedures were followed in line with University of York research protocols (Department of Education approval reference 15/028).

ACKNOWLEDGEMENTS

This study was funded by the British Academy, British Council and the Department of Education, University of York. The authors would like to acknowledge Dr. Ping (Abby) Wang, Dr. Maha Alghasab and Dr. Xiaoyin Yang for their support with data collection, and Dr. Khalid Alahmed for support with coding the data collected. Thanks also should go to Prof. Leah Roberts for feedback on an earlier version of the manuscript and the anonymous reviewers, whose feedback has significantly shaped the framing of the published article.

FUNDING INFORMATION

This research was supported by funding from the British Academy, the British Council and The University of York.

AUTHOR AFFILIATIONS

Zoe L. Handley orcid.org/0000-0002-4732-3443
Department of Education, The University of York, York, YO105DD, United Kingdom

Sible J. Andringa orcid.org/0000-0002-0182-6977
University of Amsterdam, Spuistraat 134, 1012 VB Amsterdam, The Netherlands

Haiping Wang orcid.org/0000-0002-5114-8860
School of Languages, East China University of Political Science and Law, No. 555 Longyuan Rd. Songjiang, 201620 Shanghai, China

REFERENCES

Andringa, S. (2014). The use of native speaker norms in critical period hypothesis research. *Studies in Second Language Acquisition, 36*(3), 565–596. DOI: https://doi.org/10.1017/S0272263113000600

Andringa, S., & **Godfroid, A.** (2020). Sampling bias and the problem of generalizability in applied linguistics. *Annual Review of Applied Linguistics, 40,* 134–142. DOI: https://doi.org/10.1017/S0267190520000033

Baguley, T. (2012). *Serious Stats.* Palgrave Macmillan. DOI: https://doi.org/10.1007/978-0-230-36355-7

Bates, D., Mächler, M., Bolker, B., & **Walker, S.** (2015). lme4: Linear mixed-effects models using Eigen and S4. *R package version 1.1-7*. 2014.

Bosker, H. R., Pinget, A. F., Quené, H., Sanders, T., & **De Jong, N. H.** (2012). What makes speech sound fluent? The contributions of pauses, speed and repairs. *Language Testing*, *30*(2), 159–175. DOI: https://doi.org/10.1177/0265532212455394

Bradlow, A. R., Kim, M., & **Blasingame, M.** (2017). Language-independent talker-specificity in first-language and second-language speech production by bilingual talkers: L1 speaking rate predicts L2 speaking rate. *The Journal of the Acoustical Society of America*, *141*(2), 886–899. DOI: https://doi.org/10.1121/1.4976044

Burchfield, A. L., & **Bradlow, A. R.** (2014). Syllabic reduction in Mandarin and English speech. *The Journal of the Acoustical Society of America*, *135*(6), EL270–EL276. DOI: https://doi.org/10.1121/1.4874357

Case, A. (2008). 101 IELTS Speaking Part Two tasks about people, places, actions, things and times. *Using English.com*. https://www.usingenglish.com/files/pdf/101-ielts-speaking-part-two-tasks-about-people-places-actions-things-and-times.pdf

Crible, L., & **Pascual, E.** (2020). Combinations of discourse markers with repairs and repetitions in English, French and Spanish. *Journal of Pragmatics, 156*, 54–67. DOI: https://doi.org/10.1016/j.pragma.2019.05.002

de Jong, N. H. (2018). Fluency in second language testing: Insights from different disciplines. *Language Assessment Quarterly*, *15*(3), 237–254. DOI: https://doi.org/10.1080/15434303.2018.1477780

de Jong, N. H., Groenhout, R., Schoonen, R., & **Hulstijn, J. H.** (2015). Second language fluency: Speaking style or proficiency? Correcting measures of second language fluency for first language behavior. *Applied Psycholinguistics*, *36*(2), 223–243. DOI: https://doi.org/10.1017/S0142716413000210

de Jong, N. H., Steinel, M. P., Florijn, A. F., Schoonen, R., & **Hulstijn, J. H.** (2012). Facets of speaking proficiency. *Studies in Second Language Acquisition*, *34*(1), 5–34. DOI: https://doi.org/10.1017/S0272263111000489

de Jong, N. H., & **Wempe, T.** (2009). Praat script to detect syllable nuclei and measure speech rate automatically. *Behavior Research Methods*, *41*(2), 385–390. DOI: https://doi.org/10.1080/15434303.2018.1477780

Derwing, T. M., Munro, M. J., Thomson, R. I., & **Rossiter, M. J.** (2009). The relationship between L1 fluency and L2 fluency development. *Studies in Second Language Acquisition*, *31*(4), 533–557. DOI: https://doi.org/10.1017/S0272263109990015

Duran-Karaoz, Z., & **Tavakoli, P.** (2020). Predicting L2 fluency from L1 fluency behavior: The case of L1 Turkish and L2 English speakers. *Studies in Second Language Acquisition, 42*(4), 671–695. DOI: https://doi.org/10.1017/S0272263119000755

Field, A. P. (2014). Intraclass correlation. *Wiley statsRef: Statistics reference online*. DOI: https://doi.org/10.1002/9781118445112.stat06612

Grosjean, F., & **Deschamps, A.** (1975). Analyse contrastive des variables temporelles de l'anglais et du français: vitesse de parole et variables composantes, phénomènes d'hésitation [Contrastive analysis of temporal variables in English and French: speech rate and hesitation]. *Phonetica*, *31*(3–4), 144–184. DOI: https://doi.org/10.1159/000259667

Huensch, A., & **Tracy-Ventura, N.** (2017). Understanding second language fluency behavior: The effects of individual differences in first language fluency, cross-linguistic differences, and proficiency over time. *Applied Psycholinguistics*, *38*(4), 755–785. DOI: https://doi.org/10.1017/S0142716416000424

Hulstijn, J. H., Schoonen, R., De Jong, N. H., Steinel, M. P., & **Florijn, A.** (2012). Linguistic competences of learners of Dutch as a second language at the B1 and B2 levels of speaking proficiency of the Common European Framework of Reference for Languages (CEFR). *Language Testing*, *29*(2), 203–221. DOI: https://doi.org/10.1177/0265532211419826

Jacewicz, E., Fox, R. A., & **Wei, L.** (2010). Between-speaker and within-speaker variation in speech tempo of American English. *The Journal of the Acoustical Society of America*, *128*(2), 839–850. DOI: https://doi.org/10.1121/1.3459842

Jarvis, S. (2000). Methodological rigor in the study of transfer: Identifying L1 influence in them interlanguage lexicon. *Language learning, 50*(2), 245–309. DOI: https://doi.org/10.1111/0023-8333.00118

Jarvis, S. (2010). Comparison-based and detection-based approaches to transfer research. *Eurosla yearbook, 10*(1), 169–192. DOI: https://doi.org/10.1075/eurosla.10.10jar

Kahng, J. (2020). Explaining second language utterance fluency: Contribution of cognitive fluency and first language utterance fluency. *Applied Psycholinguistics, 41*(2), 457–480. DOI: https://doi.org/10.1017/S0142716420000065

Kim, M., Ackerman, L., Burchfield, L. A., Dawdy-Hesterberg, L., Luque, J., Mok, K., & **Bradlow, A.** (2013). Rate variation as a talker-specific/language-general property in bilingual speakers. *The Journal of the Acoustical Society of America*, *133*(5), 3574–3574. DOI: https://doi.org/10.1121/1.4806558

Kormos, J., & **Dénes, M.** (2004). Exploring measures and perceptions of fluency in the speech of second language learners. *System, 32*(2), 145–164. DOI: https://doi.org/10.1016/j.system.2004.01.001

Kuiken, F., Vedder, I., & **Gilabert, R.** (2010). Communicative adequacy and linguistic complexity in L2 writing. *Communicative proficiency and linguistic development: Intersections between SLA and language testing research*, *1*, 81–100.

Montrul, S. A. (2008). *Incomplete acquisition in bilingualism.* Benjamins. DOI: https://doi.org/10.1075/sibil.39

Odlin, T. (1989). *Language transfer: Cross-linguistic influence in language learning.* Cambridge University Press. DOI: https://doi.org/10.1017/CBO9781139524537

Pallotti, G. (2009). CAF: Defining, refining and differentiating constructs. *Applied linguistics, 30*(4), 590–601. DOI: https://doi.org/10.1093/applin/amp045

Pellegrino, F., Coupe, C., & **Marsico, E.** (2011). Across-language perspective on speech information rate, *Language, 87*(3), 539–558. DOI: https://doi.org/10.1353/lan.2011.0057

Peltonen, P. (2018). Exploring connections between first and second language fluency: A mixed methods approach. *The Modern Language Journal*, *102*(4), 676–692. DOI: https://doi.org/10.1111/modl.12516

Plonsky, L., & **Oswald, F. L.** (2014). How big is "big"? Interpreting effect sizes in L2 research. *Language Learning, 64*(4), 878–912. DOI: https://doi.org/10.1111/lang.12079

R Core Team. (2015). *R: A language and environment for statistical computing.* Vienna, Austria: R Foundation for Statistical Computing. http://www.R-project.org/.

Révész, A., Ekiert, M., & **Torgersen, E. N.** (2014). The effects of complexity, accuracy, and fluency on communicative adequacy in oral task performance. *Applied Linguistics*, *37*(6), 828–848. DOI: https://doi.org/10.1093/applin/amu069

Riazantseva, A. (2001). Second language proficiency and pausing a study of Russian speakers of English. *Studies in Second Language Acquisition*, *23*(4), 497–526. DOI: https://doi.org/10.1017/S027226310100403X

Sajavaara, K. (1987). Second language speech production: Factors affecting fluency. In H.-W. Dechert & M. Raupach (Eds). *Pycholinguistic Models of Production* (pp. 46–65). Norwood, NJ: Ablex Publishing Corporation.

Segalowitz, N., French, L., & **Guay, J. D.** (2017). What features best characterize adult second language utterance fluency and what do they reveal about fluency gains in short-term immersion. *Canadian Journal of Applied Linguistics/Revue canadienne de linguistique appliquée*, *20*(2), 90–116. DOI: https://doi.org/10.7202/1050813ar

Sehgal, S. (2021). *Individual Differences in the Development of the Oral Fluency of American learners of Spanish Studying Abroad* [PhD thesis, The University of Barcelona]. Dipòsit Digital de la Universitat de Barcelona. Retrieved from: https://diposit.ub.edu/dspace/handle/2445/183843

Skehan, P. (1998). *A cognitive approach to language learning.* Oxford University Press. DOI: https://doi.org/10.1177/003368829802900209

Suzuki, S., Kormos, J., & **Uchihara, T.** (2021). The relationship between utterance and perceived fluency: A meta-analysis of correlational studies. *The Modern Language Journal, 105*(2), 435–463. DOI: https://doi.org/10.1111/modl.12706

Towell, R., & **Dewaele, J. M.** (2005). The role of psycholinguistic factors in the development of fluency amongst advanced learners of French. In J. M. Dewaele (Ed.). *Focus on French as a foreign language: Multidisciplinary Approaches* (pp. 210–239). Multilingual Matters. DOI: https://doi.org/10.21832/9781853597688-011

Trouvain, J., & **Möbius, B.** (2014). Sources of variation of articulation rate in native and non-native speech: comparisons of French and German. In *Proc. Speech Prosody* (Vol. 7, pp. 275–279). DOI: https://doi.org/10.21437/SpeechProsody.2014-43

Tullock, B., & **Ortega, L.** (2017). Fluency and multilingualism in study abroad: Lessons from a scoping review. *System, 71*, 7–21. DOI: https://doi.org/10.1016/j.system.2017.09.019

TO CITE THIS ARTICLE:
Handley, Z. L., Andringa, S. J., & Wang, H. (2024). Exploring the Influence of Individual Speaking Style, Cross-Linguistic Transfer of Language-Specific Fluency Patterns, and Proficiency on Second Language Oral Fluency. *Journal of the European Second Language Association*, 8(1), 34–47. DOI: https://doi.org/10.22599/jesla.124

Submitted: 17 January 2024
Accepted: 15 April 2024
Published: 27 May 2024