Do Children Learn English More Quickly When Their Native Language Is Similar To English?

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Abstract

The impact of an individual's first language (L1) on their acquisition of a second language (L2) is widely recognized in the field of psycholinguistics. However, previous research has focused on limited L1-L2 pairs, leaving questions about how different linguistic structures, such as genetic relationship, phonology, or syntax, can either facilitate or impede the learning of a new language. In our current study, we aimed to address these gaps by analyzing standardized English assessment scores of English Language Learners (ELLs) from 46 international schools across 30 countries. We compared linguistic similarities between more than 40 L1s and examined how different linguistic structures of the L1 influenced the acquisition of L2, specifically in terms of genetic, phonological, and syntactic similarities. Our findings indicate that older ELLs learn English at a faster rate than younger ELLs, and among older ELLs, those who speak an L1 that shares linguistic similarities with English acquire the language faster than ELLs whose L1 is less closely related to English. These results highlight the transfer of linguistic knowledge from L1 to L2 and emphasize the importance of age of acquisition in L2 learning. Our study has important theoretical and pedagogical implications for research on second language acquisition.

Keywords: second language acquisition; cross-linguistic transfer; bilingualism; syntax; phonology

Motivation

The increasing interconnectedness and interdependence of people and countries has led to a growing number of individuals learning English as a means of international communication. As of February 2022, there were 1,453 million speakers of English worldwide, with only 373 million of them speaking it as their first language and 1,080 million speaking it as their second language (YadavAnil, 2023). This indicates that English is primarily spoken as a foreign language, raising the question of how an individual's first language may impact their acquisition of English as a second language. Numerous studies have demonstrated the transfer of linguistic components, including morphological, phonological, syntactic, and lexical transfers, from a first language (L1) to a second language (L2) (Cummins, 1979; Lado, 1957; MATSUMOTO, 2013; Ströbel, Kerz, & Wiechmann, 2020). Researchers have also explored the significant pedagogical and theoretical implications of this transfer for language acquisition, including studies by Anthony et al. (2009), Forbes (2019), and Pun and Macaro (2019).

Foreign language acquisition is influenced by a learner's L1 knowledge, which has been studied through the theoretical accounts of the Linguistic Interdependence Hypothesis (LIH) by Cummins Cummins, 1978 and the Contrastive Analysis Hypothesis (CAH) by Lado Lado, 1957. Cummins' LIH (also known as the Common Underlying Proficiency Hypothesis) suggests that the level of L2 attainment in Cognitive Academic Language Proficiency (CALP) is linked to the level of attainment in L1's CALP, indicating that literacy skills of L1 and L2 are intertwined and transferable to some extent (BERNHARDT & KAMIL, 1995; Cummins, 1979). However, Cummins' Threshold Hypothesis (TH) suggests that bilinguals must acquire a specific threshold level of competence in L1 to experience the cognitive benefits for L2 (Cummins, 1979).

While Cummins' LIH only focuses on positive skill transfers from L1 to L2, Lado's Contrastive Analysis Hypothesis (CAH) states that the structure of L1, such as phonology, grammar, and vocabulary, affects the acquisition of L2, leading to both positive and negative linguistic transfers (Lado, 1957). The hypothesis posits that similarities between L1 and L2 lead to positive transfers, while discrepancies lead to negative transfers. Therefore, if a child's L1 and L2 are closely related in terms of linguistic components, the child is likely to acquire L2 faster than their peers whose L1 has fewer similarities with L2. In line with CAH, we suggest that students who speak an L1 that is comparable to English (e.g., Indo-European languages) are more likely to acquire English as an L2 faster than students whose L1 shares fewer linguistic similarities with English.

A number of researchers have identified cross-language morphological transfer in the acquisition of two different writing systems (Ke & Koda, 2021; Pasquarella, Chen, Lam, Luo, & Ramirez, 2011; Wang, Cheng, & Chen, 2006). Morphological awareness is the ability to analyze and manipulate morphemes, the smallest phonological unit, to use word formation rules and improve reading proficiency (Kuo & Anderson, 2006). While English has compound, inflectional, and derivational morphologies, Chinese Mandarin only has compound and a few derivational morphologies. Compound morphology involves creating new words by combining two

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or more stem morphemes (e.g., sunflower), inflectional morphology involves adding grammatical features to words (e.g., -ing and -ed), and derivational morphology involves adding morphemes to change the meaning of a stem morpheme (e.g., with → wither and stain → stationary) (WANG et al., 2009). Studies have shown that a child's awareness of English compounds can enhance their ability to read and comprehend Chinese characters (Pasquarella et al., 2011). Therefore, these results indicate that first language morphological awareness contributes to second language reading comprehension.

Research in phonology has shown that phonological skills acquired in one's L1 can be applied to improve phonological awareness and spelling proficiency in a L2. For instance, Anthony et al. (2009) found that prior knowledge of Spanish phonological comprehension has a positive impact on the development of English phonological awareness. Spanish phonological awareness explains an additional 9% of variance in English phonological awareness, and English phonological awareness predicts an additional 11% of Spanish phonological awareness. Wang and his colleagues 2006 further suggest that L1 phonological skills facilitate L2 pseudoword reading, specifically if both L1 and L2 are alphabetic languages. Since Korean phonological skills, including onset detection, rhyme detection, and phoneme deletion, are significantly correlated with both English real-word and pseudoword reading, and both Korean Hangul and English orthographic systems share a fundamental alphabetic principle of mapping graphemes to phonemes, better phonological skill in the Korean language leads to better phonological skills in English.

In the realm of second language acquisition, there is ample evidence of syntactic transfer from L1 across a variety of learning contexts and language pairings. For instance, research has shown that proficiency in English syntax can have both direct and indirect impacts on French reading comprehension and word recognition (Sohail et al., 2022). These findings are supported by "Cross-Language Transfer of Syntactic Skills and Reading Comprehension Among Young Cantonese-English Bilingual Students" (2015)'s previous study, in which they found that Chinese students' syntactic abilities were significant predictors of their English reading comprehension, even when controlling for factors such as age, nonverbal intelligence, working memory, oral vocabulary, and word recognition. However, Chan's 2004 study on Hong Kong Chinese ESL learners revealed that L1 syntactic transfer can also result in grammatical errors and unclear paragraph structures in foreign language acquisition. In this study, when sentence structures were considered more difficult or unfamiliar, the lower-intermediate Chinese ESL students in Hong Kong tended to think in Chinese first before translating it to English, and thus applied Chinese syntax to their English writing for word-for-word translation. Therefore, while L1 syntactic transfer can be beneficial for familiar syntactic structures, it can also interfere with the acquisition of different syntactic features.

In addition, the impact of cognates on the vocabulary recognition and knowledge transfer of bilingual students can either be positive or negative. Ordóñez and his colleagues 2002 discovered that the depth of knowledge of high-frequency Spanish nouns among bilingual children corresponds to their depth of knowledge for similar English nouns. Spanish superordinate performance is a significant predictor of English superordinate performance. This transfer of Spanish superordinate knowledge may result from the direct lexical effect of similar words, such as *vehicular* and *humano* in Spanish to *vehicle* and *human being* in English, or the metalinguistic route. Students who have mastered the skills of fitting superordinates into the structure of a formal definition in Spanish may find it easier to apply the same skill in English. At the same time, however, lexical similarities between languages can also have drawbacks when they are overused or prevent the acquisition of new features during learning. For example, a German individual learning English may mistakenly use the word *loffe* to mean spoon in English since they believe it is an English cognate of the German word Löffel (Eckman, 2004). This type of confusion can be particularly common when a new word shares some similarities with a known word, but not all (known as "deceptive transparency" (Laufer, 1988)). False friends, such as the German word "Rat," which means "advice" not a rodent, can also lead to confusion.

Studies have indicated that cross-linguistic transfer of skills from a first language to a second language is possible, particularly when L1 and L2 share similar morphological types, phonological systems, syntactic structures, and cognates. However, prior comparisons of L1 transfer to English have been limited to a few languages, as previous studies have focused on a small pool of participants from restricted numbers of first language groups. Furthermore, the extent to which phonological awareness contributes to positive transfer from L1 to L2 remains unclear. These limitations are primarily due to attempts to control for participants' socioeconomic status, available resources, and age group. As a result, our study aims to recruit English Language Learners from international schools worldwide that offer the same set of English assessments on a regular basis, with nearly identical support for learning English, to include a diverse range of first language speakers who are learning the same second language.

The current study The current study builds upon prior research by Chan and Hartshorne 2022 and aims to investigate how the level of similarities of students' native languages and English affects their rates of acquisition of English as a second language. This study has a larger and more diverse dataset of first languages and greater sample sizes. We analyzed 1,864 students with 4,758 observations, compared to Chan and Hartshorne's 855 students with 1,898 observations. Additionally, we have a more diverse set of 44 distinct native languages with a better distribution, unlike Chan and Hartshorne's sample, in which Arabic speakers comprised 48.2% of students' native languages. Furthermore, we employed a better linguistic distance measure by using phonological distance for oral scores, syntactic distance for literacy scores, and genetic distance for overall scores, based on (Littell, Mortensen, Lin, Kairis, Turner, & Levin, 2017; Malaviya, Neubig, & Littell, 2017). Finally, we improved our models by using growth models and slope models compared to the fixed model in the previous study (Chan & Hartshorne, 2022). With all these improvements, we aim to replicate Chan and Hartshorne's results with more compelling evidence.

Method

Sample

The study collected secondary data on English Language Learners' standardized test scores and demographic information from educators at member schools of WIDA's International School Consortium ("WIDAMODEL", 2022). The dataset included students between the ages of 6 to 18 (Grade K-12), attending 52 English-medium international schools located in 36 countries. Participants were required to be sequential bilinguals, meaning they learned English after their first language. Additionally, participants were required to have at least two English test scores or one English test score accompanied by age of acquisition (AoA). The demographic variables collected included birth year, gender, native language, AoA, and duration of English exposure. The original dataset included scores for 7,943 students.

Recruitment

To recruit educators for the study, we reached out to school administrators and ESL teachers of WIDA's partner schools, regardless of whether they had participated in previous studies with Jocelyn and Hartshorne 2022. Upon agreement to participate [1], educators were provided with a data collection spreadsheet template via Google Spreadsheets or an Excel document. To ensure clarity and accuracy, instructions were provided through Zoom calls or email. Educators were instructed to provide one set of WIDA scores for each student with each row representing one observation.

Data Cleaning

We cleaned, annotated, and preprocessed the unprocessed data to ensure the validity of our measurements. We excluded students without birth year or age (N=181), with learning disabilities or special educational needs (N=126), with more than one native language (N=958), without months of English duration (N=3,204), without linguistic similarity measures (N=45) and student with one observation without AoA(N=2,297). In cases where students' first test score is not close to their AoA (N=180), we included a "guesstimated" test score: the minimum scaled value dates to the student's AoA. Additionally, we removed all dataset from a school district because their scores are outliers from the rest of the data and their students' scale scores do not match with WIDA's official score reports (N=1,996). Finally, the WIDA English assessment does not provide scale scores for Kindergarteners (N=2,178). Thus, if a subject's AoA was in Kindergarten, we estimated the scale score by filling in the possible lowest scale score of the WIDA test. However, if we had an actual test score from Kindergarten students, that test score was excluded (N=308). In total, we have 1,864 students (1,070 boys, 729 girls, and 65 unidentified; Mage =10.25, SD = 3.1 years) with 4,758 observations and 39 distinct L1s.

[1]The study was approved by Institutional Review Board at Boston College.

Table 1: Table 1. L1 Distributions in Previous and Current Study

	C. & H. (2022)	Growth Model	Slope Model
Arabic	48%(412)	41%(436)	26%(480)
Chinese	20%(171)	16%(173)	30%(561)
Korean	8%(64)	15%(158)	20%(377)
Spanish	7%(56)	7%(74)	5%(100)
Japanese	5%(40)	6%(65)	6%(116)
Russian	4%(34)	2%(19)	1%(17)
French	2%(13)	2%(24)	2%(37)
Indonesian	0	2%(32)	2%(32)
Other	6% (65)	9%(90)	8%(144)
Total	100%(855)	100%(1071)	100%(1864)

For the current analysis, we used two different samples for growth and slope models. For the growth model, we only included students who have Age of Acquisition, English duration in months, and assessment's overall scale score. This constitutes 1,071 students (638 boys and 433 girls; Mage =6.2, SD = 2.0 years) with 2,608 observations and 30 distinct L1s. For the slope model, we used 1,864 students (1,070 boys, 729 girls, and 65 unidentified; Mage =10.25, SD = 3.1 years) with 4,758 observations and 39 distinct L1s. The language distributions are in Table 1.

Measures

Scores We employed the standardized English language proficiency tests designed by the WIDA Consortium, the WIDA MODEL and Screener assessments, to measure English language proficiency. The WIDA Consortium 2020 is an organization of U.S. states, territories, and federal agencies that establishes language development standards for K-12 bilingual learners. While both MODEL (Measure of Developing English Language) and Screener assess English language proficiency for grades K-12, Screener is used for initial placements while MODEL measures students' performance during the school year. The WIDA tests are categorized into five grade-level clusters: Kindergarten, Grades 1-2, Grades 3-5, Grades 6-8, and Grades 9-12, and evaluate four language domains: Listening, Speaking, Reading, and Writing. The raw scores from these domains are converted to scale scores using a statistical process that considers the difficulty of the items and tasks, independent of grade level. So we can compare the scales across the grade levels. These scale scores contribute to three composite scores, namely Oral Language (Listening and Speaking), Literacy (Reading and Writing), and Overall (Reading, Writing, Listening, and Speaking) (WIDA, 2023).

Language Similarity Measure To estimate the similarities between the students' native languages and English, we used the lang2vec tool from the URIEL knowledge base, as described by Littell et al. 2017 and Malaviya et al. 2017. This tool provides driving distance charts for various linguistic features, such as genetic, syntactic, phonological, and inventory distances. The distance ranges from 0.0 to 1.0, where 0.0 represents identical languages and 1.0 represents the most distant languages. Among six types of distance matrices, we used genetic, phonological, and syntactic distances. The genetic distance metric is derived from Glottolog hypothesized tree of language and is calculated by dividing the numbers of steps upward on the tree until the two languages meet under a single node by the number of branches between L1 and the root. Therefore, the genetic distance values do not have absolute significance but show relationships between different L1-L2 combinations. Both syntactic and phonological distances are from the URIEL language typology database, a collection of binary features extracted from typological, phylogenetic, and geographical databases. Syntactic features include information such as "whether a language has prepositions or postpositions" and phonological features include "whether a language has complex syllabic onset clusters." (Malaviya et al., 2017).

Model

Growth Model

For the students with known AoA and multiple observations (N student = 1,071, N observations = 2,608), we fitted three-level growth models for overall score, oral score, and literacy score, respectively. Each subject has his or her own personal intercept and slope [2]. The number of observations per individual is level-1, the number of individuals per school is level-2, and the number of schools is level-3. And the predictors are English exposure duration (level-1), AoA (level-2), linguistic similarity (level-2), and all the interactions. The linguistic similarity measure generated by lang2vec (Littell et al., 2017; Malaviya et al., 2017) varied depending on the score being analyzed: we used the genetic score for overall scores, the phonological score for oral scores, and the syntactic score for literacy scores. As WIDA scores increase logarithmically over time, we applied a log transformation to English Exposure and added 1 to deal with 0. Additionally, all predictors were centered to facilitate interpretation. We used the nlme (Pinheiro et al., 2023) package in R to fit the models.

[2] We also fitted a fixed model, mixed model, and three-level model. Both BIC and AIC values indicated that three-level growth models fitted our data best. Therefore, we only included results from three-level growth models in the paper.

Slope Model

Due to missing AoA for some students, we fitted slope models on all students(N student = 1,437, N observations = 3,741). In contrast to growth model, in slope models, the dependent variable is the slope of scores. The slopes were calculated: (score on observation N - score on observation N-1)/duration between two tests for each student. For example, a student with four observations would have three slopes. The slope models were also three-level models, with the number of slopes per individual at level-1, the number of individuals per school at level-2, and the number of schools at level-3. The predictors included linguistic similarity (level-2), age (level-2), the score on observation N-1 (level-1), and all the interactions. As with growth models, the linguistic similarity measures varied depending on the score being analyzed. All predictors were scaled to facilitate modeling fitting and interpretation, as the values of slopes are relatively small compared to the predictors. We used the lme4 (Bates et al., 2015) package in R to fit the models.

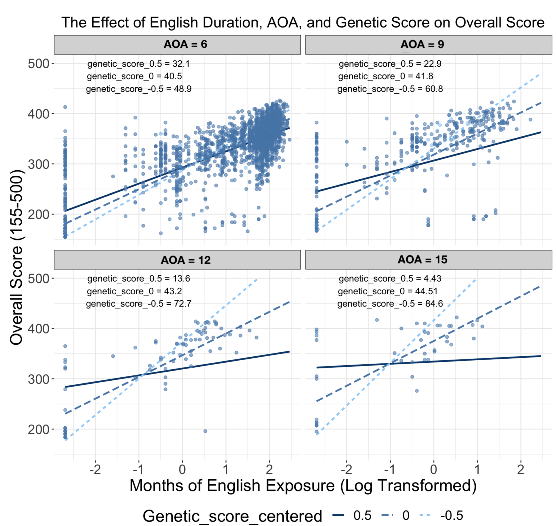
Results

Overall Score

Growth Model Results First, we found a significant main effect of English exposure (b = 40.50, t(1531) = 47.74, $p < .0001$). Generally, the longer time they are exposed to English, the higher the overall score they get, indicating that learning was happening. Second, there was a significant main effect of AoA on overall scores (b = 9.45, t(1531) = 17.21, $p < .0001$), indicating that students with a later AoA tend to perform better on the WIDA test. Third, there was a marginally significant interaction between English exposure duration and genetic similarity (b = -9.70, t(1531) = -1.53, $p < .1$). Specifically, ELLs whose L1s are more similar to English tended to learn faster, but only when controlling for AoA. Importantly, we observed a significant three-way interaction of genetic similarity, English exposure duration, and AoA on overall scores (b = -7.04, t(1531) = -2.07, $p < .05$). To better understand this interaction, we created a marginal plot (see Figure 3) to visualize the predicted effects of genetic similarity on overall scores at different levels of AoA and English exposure duration. The plot revealed that the positive effect of genetic similarity on overall scores was more pronounced among ELLs with later AoA, while the effect was not significant among ELLs with earlier AoA. This suggests that genetic similarity may only play a role in facilitating language learning among ELLs who start learning English later in life.

Slope Model Results The results indicate several significant effects. Firstly, we found a significant main effect of age (b = 0.062, t(2878) = 14.97, $p < .0001$) and overall score (b = -0.15, t(2875) = -34.96, $p < .0001$). As ELLs get older, they tend to learn faster, but as they learn more about English, their learning tends to slow down. We also found a significant main effect of genetic similarity (b = -0.009, t(2886) =

-2.57, $p < .05$). There is a general genetic similarity effect on learning rate, that is as similarity increases, ELLs learn faster. We found a significant interaction between age and genetic similarity (b = -0.017, t(2886) = -3.71, $p < .001$), and between genetic similarity and overall score (b = 0.012, t(2873) = 3.73, $p < .001$). These results suggest that the impact of genetic similarity is strengthened by age but undermined by the level of second language knowledge. As revealed by Figure 2 and post-hoc analysis, for older learners (+1sd) with an average overall score, those whose first language is more similar to English (-1sd) tend to learn English as a second language faster than those whose first language is less similar (+1sd) to English (the estimated difference is 0.051±0.013, $p < .001$). However, younger learners (-1sd) could not benefit from this genetic similarity. For those who have learned little English (-1sd) and with an average age, if their first language is more similar to English (-1sd), they tend to learn faster than those whose first language is less similar (-1sd) to English (the estimated difference is 0.043±0.010, $p < .0001$). However, those who have learned average or a lot of English (+1sd), they could not benefit from genetic similarity. There is also a significant interaction between age and overall score (b = -0.010, t(2741) = -3.28, $p < .01$), indicating that the age effect is undermined by overall score. Specifically, older ELLs' age advantage compared to younger ELLs is undermined as their score increases. These findings suggest that older students with less second language knowledge may benefit most from first language transfer. We can observe that growth model and slope model results are consistent.



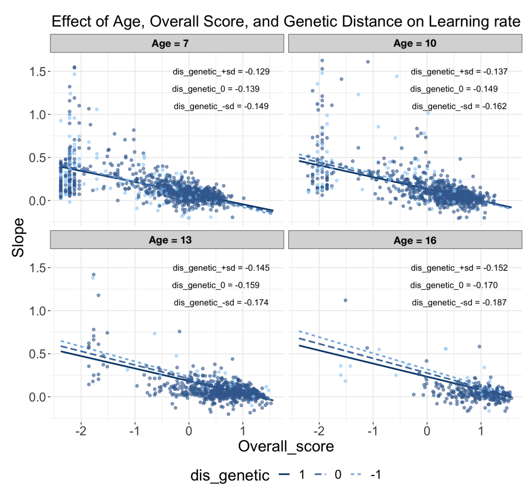
Note. Negative values of Genetic score centered indicate a closer proximity to English.

Figure 1: Effect of English Duration, AoA, Genetic Score on Overall Score in Growth Model

Oral Score

Growth Model Results We conducted analyses on the oral score predicted by phonological similarity, English exposure duration, and AoA. Our findings indicate significant main effects of both English exposure (b = 48.47, t(1531) = 35.31, $p < .0001$) and AoA (b = 6.64, t(1531) = 7.67, $p < .0001$), which are consistent with the results for overall score. The main effect of English exposure duration reveals the impact of learning over time, while the main effect of AoA suggests that late learners tend to initially learn English faster than early learners. In contrast to the genetic similarity effect found for overall score, we did not find any effect of phonological similarity on the oral score.

Slope Model Results Similar to the overall score results, we found the main effect of age (b = 0.048, t(2709) = 7.72, $p < .0001$), oral score (b = -0.20, t(2712) = -33.68, $p < .0001$) on the learning rate, and phonological similarity (b = -0.037, t(2605)) = -4.89, $p < .0001$). There is also interaction between age and phonological similarity (b = -0.021, t(2705) = -3.90, $p < .00001$), We also found the interaction between oral score and phonological similarity (b = 0.029, t(2699) = 5.27, $p < .0001$), interaction between age and oral score (b = -0.010, t(2606) = -2.09, $p < .05$), and three-way interaction (b = 0.023, t(2701)=5.25, $p < .0001$). While the growth model did not detect a significant effect of phonological similarity, the slope model did, which may be due to its larger sample size. These results suggest that phonological similarity between the first and second language is important in second language acquisition. Specifically, older learners with less phonological knowledge of the second language are better able to leverage the transfer of their first language in acquiring phonological knowledge of the second language.



Note. Negative genetic distance indicates a closer proximity to English.

Figure 2: Effect of Genetic Score, Age, and Score on Observation N-1 on Slope of Overall Scores in Slope Model

Literacy Score

Growth Model Results The prediction of literacy score was based on syntactic similarity, English exposure duration, and AoA. The main effects of months of English duration (b

= 35.11, t(1425) = 41.11, $p < .0001$) and AoA (b = 9.54, t(1425) = 17.65, $p < .0001$) were consistent with the findings for overall score and oral score. Additionally, we observed a significant interaction between syntactic similarity and AoA (b = -18.04, t(1425) = -2.79, $p < .001$). This suggests that the advantage later learners have in initially learning faster than early learners is reduced if their native language is very different from English, given the average English exposure duration. Furthermore, for the three-way interaction of syntactic similarity, English exposure duration, and AoA for overall score, we found a marginally significant effect (b = -6.65, t(1531) = -1.83, $p < .1$). The marginal plot produced was similar to that of Figure 3.

Slope Model Results We found the main effect of age (b = 0.072, t(2710) = 16.14, $p < .0001$), literacy score (b = -0.13, t(2703) = -30.97, $p < .0001$) on the learning rate of syntactic knowledge. Furthermore, we found significant interactions between age and syntactic similarity (b = -0.018, t(2712) = -4.83, $p < .0001$), literacy score and syntactic similarity (b = 0.016, t(2709) = 4.83, $p < .0001$), age and literacy score (b = -0.0094, t(2411) = -3.14, $p < .01$), and the three-way interaction (b = -0.0048, t(2695) = -2.11, $p < .05$). Consistent with genetic and phonological similarity, these results suggest the effect of syntactic similarity.

Discussion and Conclusion

The aim of the current study was to examine the role of L1 genetic, phonological, and syntactic structures in the acquisition of English as an L2 among English Language Learners from international schools. To accomplish this goal, we utilized a larger sample with a greater diversity of L1s, and employed better fitted models, along with linguistic measures for genetics, phonology, and syntax.

The study provides strong evidence in support of Chan and Hartshorne's 2022 conclusion, with three key results emerging from the modeling analysis. Firstly, both growth model and slope model show consistent findings that as the duration of exposure to English increases, ELLs achieve higher scores in overall, oral, and literacy tests. Secondly, older ELLs tend to learn English at a faster pace than younger ELLs, especially in the initial stages of acquisition, as indicated by overall score, oral score, and literacy score. Finally, among older ELLs, those who speak an L1 that shares linguistic similarities with English learn faster than those whose L1 is relatively distant from English. This finding is consistent with Snow and Hoefnagel-Höhle's (Snow & Hoefnagel-Höhle, 1978) study, which showed that English-speaking students between the ages of 8-15 made the most significant progress in learning Dutch as a second language. Notably, slope model provides additional evidence that linguistic distance plays a crucial role in the acquisition of not only overall and syntactic knowledge but also phonological knowledge, which further supports the study's main conclusion.

The study's findings extend previous research on cross-linguistic transfers on L1-L2 combinations (e.g., Chen et al., 2012; "Cross-Language Transfer of Syntactic Skills and Reading Comprehension Among Young Cantonese-English Bilingual Students", 2015; Pasquarella et al., 2011; Sohail et al., 2022) by incorporating language similarities between either 32 or 44 different L1s and English as an L2. The data suggests that positive transfer from L1 to L2 is not restricted to Mandarin, Spanish, or French native speakers but can be applied to speakers of any L1 as long as the L1 shares similar linguistic structures with English. However, the study reveals that age plays a crucial role in the linguistic similarity effect on the learning rate, with older learners taking greater advantage of positive linguistic transfer from their first language.

The study's findings also suggest that students who begin learning English as a L2 at a later stage acquire English proficiency at a faster rate. This could be attributed to their heightened awareness of morphology, phonology, and syntax from their more developed L1. This highlights that not only the degree of linguistic similarities between the L1 and L2 determines the rate of L2 acquisition, but also the proficiency level and years of practice in the L1 are crucial for positive linguistic transfer. This finding is consistent with Cumin's 1979 Linguistic Interdependence Hypothesis and Threshold Hypothesis, which propose that students must achieve a minimum threshold in L1 competence to attain proficiency in L2.

The study provides valuable insights, but there is room for improvement and further investigation. One limitation is the study only considers one L2. Including more L2s and different L1-L2 pairings could provide a more comprehensive understanding of how linguistic structures impact L2 acquisition rates. Additionally, while the study uses standardized tests to assess language abilities, external factors such as test anxiety may impact scores. The study also used guesstimation for Kindergarteners, which may have underestimated their scores. Lastly, observations were collected during the COVID-19 pandemic, which may have affected students' progress and testing performance due to disruptions in their learning and personal lives.

Despite its limitations, this study provides compelling evidence for the influence of genetic and syntactic similarities on the acquisition of English as a second language by English Language Learners. The results suggest that the critical period for second language acquisition may extend beyond what is traditionally believed, as late learners can benefit from their matured L1 to better understand the L2 and compensate for lost time compared to early learners. As such, further research on critical periods for achieving L2 proficiency is necessary. These findings also have practical implications for educators and language instructors who work with ELLs. They highlight the importance of recognizing linguistic similarities between a student's L1 and English as a crucial factor in their ability to learn the language. Additionally, educators should be aware that older learners may be better equipped to take advantage of positive linguistic transfer from their L1, while also providing additional support to students whose L1 differs significantly from English.

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