Learning a Second Language Unconsciously

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Abstract

The purpose of this study is to assess the bearing of 3 different implicit language aptitude scores [LLAMAD, Artificial Grammar (AG), and Passive Priming (p)] on L2 speech performance. It was hypothesized that all three of these implicit aptitude scores would have significant positive correlations with L2 speech performance. 250 speech samples were recorded by Chinese college student English-L2 learners and rated on comprehensibility and accentedness. The averaged ratings were then compared to the students' corresponding LLAMAD-, AG- and p-scores resulting from separate tests. It was found that LLAMAD-scores had a significant positive correlation, AG-scores had no significant correlation, and p-scores had a significant negative correlation with L2 speech performance. These results have a bearing on L2 education at large; L2 education traditionally centers on conscious (explicit) language-learning and scholars have called into question the exclusion of unconscious (implicit) language-learning. This data suggests conflicting support for the inclusion of unconscious language-learning streams into L2 curriculum.

Introduction

- Language learning is a widely applicable concept to many, as the increase in diversity, particularly in the United States, makes proficiency in multiple languages a highly coveted skill.
- Studies indicate that one's primary language (L1) is learned at home in an environment where the language is the official or most popular language spoken in the area, making the learning of a second language (L2) more difficult for most individuals.
- Implicit aptitude, which is one's unconscious tendency to associate certain attitudes with objects or people, plays a part in language learning; studies have shown that motivation and desire to learn impacts the success of L2 oral production.
- A clear example of this comes from research on students whose L2 is English, as English is typically associated with the United States by individuals from those areas. The purpose of this study is to determine how priming impacts one's ability to learn an L2.
- This study uses correlational analyses to measure the correlation between implicit aptitude and English fluency in students whose L2 is English.
- Are negative attitudes towards areas with English as L1 associated with a lack of fluency in individuals with English as L2?
- Tools such as Artificial Grammar (AG) tests, unconscious memory tasks (LLAMAD), and Syntax Priming tasks (p) may indicate that the participant's implicit aptitude towards the English language is negative, and thus correlate a lack of fluency in L2 with the implicit aptitude.
- The hypothesis suggests that more priming will lead to increased scores on comprehensibility and accentedness.

Methods

- 250 University students in China who have learned English as a second language were asked to watch a short film.
- The students summarized the film in 5 minutes or less in the L2.
- The students' summaries of the short film were recorded and sent to the research assistants.
- The audio recordings were divided across a total of 28 surveys.
- The recordings were graded on a scale of 0 to 10 for two categories each: comprehensibility and accentedness.
- Over several weeks, we graded the audios on a case by case basis.
- The concept of implicit language aptitude was conceptualized and measured.
- We analyzed the statistics using SPSS to determine the strength of the relationship between innate cognitive ability and language proficiency.
- The effectiveness of different cognitive abilities was compared to find which are most essential in language aptitude.

Results

Correlation Analysis

		LLAMAD	AG	p
LLAMAD	Pearson correlation	1	-.106	.022
	Sig. (2-tailed)		.177	.774
	N	167	165	166
AG	Pearson correlation	-.106	1	-.138
	Sig. (2-tailed)	.177		.077
	N	165	165	164
p	Pearson correlation	.022	-.138	1
	Sig. (2-tailed)	.774	.077	
	N	166	164	166
Speech_spring2022_comp	Pearson correlation	.125	.102	-.164*
	Sig. (2-tailed)	.114	.199	.037
	N	162	160	161
Speech_spring2022_accent	Pearson correlation	.194*	.045	-.165
	Sig. (2-tailed)	.013	.576	.037
	N	162	160	161
Speech_spring2022_total	Pearson correlation	.162*	.078	-.170*
	Sig. (2-tailed)	.039	.328	.031
	N	162	160	161

Fig. 1
LLAMAD score was found to have a positive significant correlation with the accentedness score (r = .194, p = .013) and the total speech score (r = .162, p = .039). It indicates that those who scored high on the LLAMAD test also received high score on their accentedness and total speech performance. The Priming score, on the other hand, was found to be significantly negatively correlated with the ESL learners' comprehensibility score (r = -.164, p = .037), accentedness score (r = -.165, p = .037), and the total score (r = -.170, p = .031). It means that the learners who showed more priming performed poorly on the speech performance showing low scores on the comprehensibility, accentedness, as well as the low total scores. The Artificial Grammar score did not show any significant correlations with the speech performance.

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	Constant	3.692	.637		5.793	.000
	LLAMAD	.000	.000	.176	2.259	.025
	AG	.017	.019	.070	.886	.377
	P	-4.975E-5	.000	-.169	-2.154	.033

Fig. 2
a: Dependent Variable is Speech_spring2022_total
Multiple regression with the total score as the dependent variable showed similar findings. LLAMAD significantly and positively predicted the total speech performance (β = .176, p = .025) and Priming negatively did so (β = -.169, p = .033).

Key:
LLAMAD: Measures unconscious learning ability
AG (artificial grammar**):** Tested the participants ability to memorize. Includes a learning phase and a testing phase.
p (Passive Priming): How likely somebody is to reuse linguistic structure.

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

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

Discussion

Summary of Results
- Students who performed well in the LLAMAD Language Aptitude Test (LLAMA_D) also performed better in terms of accentedness, with higher scores in LLAMA_D correlating to lower levels of accentedness. They also generally scored higher in all areas of speech.
- Students who were easily primed performed worse in accentedness (were more accented).
- Priming susceptibility and LLAMA_D scores seem to be significant predictors in second language aptitude, with priming being a negative predictor whilst LLAMA_D being a positive predictor on accentedness and comprehensibility.

Limitations
- A non-racially and non-ethnically diverse student sample was used (only Chinese students).
- Lack of more concise measures that make clear distinction between the different levels of accentedness and comprehensibility, allowing for better scoring criteria.
- Accentedness and comprehensibility scores varied depending on rater, resulting in questionable inter-rater reliability.

Future Directions
- A more ethnically diverse student sample should be used as race and ethnicity might affect second language aptitude. In addition, aptitude for a second language might be correlated to resemblance of the language being learned to one of one's ethnicity or race.
- Look further into the effectiveness of priming as a language learning method. Priming usually has a positive connotation when it comes to language learning as it is known to improve cognitive and behavioral reactions. In this case, why did priming have a negative effect instead?

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