

Section S1

1. Items of the accent faking accent

In the accent faking task, participants were asked to produce the following German sentences with a strong English accent:

- a. Ich gehe einkaufen und auch spazieren.
- b. Viele Menschen leben gerne in Österreich.
- c. Meine Mutter lebt in der Türkei.
- d. Ich trinke gerne schwarzen Kaffee.
- e. Warum sind so wenig Leute hier?
- f. Wer hat meine Tasche gesehen?

2. Language perception task

The speech perception task consists of multiple items, each containing a pair of items respectively called “Stimline” and “Stimcompare”. A Stimline consists of a certain number of Stims (between 8 and 12), where a Stim is a word or short phrase in a foreign language with a certain number of syllables. A Stimcompare consists of one, two, or three Stims, which participants need to compare to the Stimline. Stims are separated from each other by 50ms pauses.

On a given trial, the participant is first exposed to a Stimline. Two seconds later, participants are exposed to the Stimcompare. Participants are then asked to indicate whether all of the Stims presented in the Stimcompare sequence were included in the Stimline or not. When the *Stimcompare* contains two or three *Stims*, the answer “correct” is only correct if all these Stims were included in the Stimline. The task starts with a familiarisation phase and the trials are presented to the participants in a randomised order (see Christiner et al., 2022 for further details).

Section S2

1. Intraclass coefficients

The tables included below report the reliability analyses we performed for the variables included in this study. Specifically, we computed intraclass correlation coefficients on the ratings for participants' performances on each item of the accent faking task, on the singing tasks and language production tasks, by using a two-way mixed effects model where people effects were random and measures effects were fixed. The results are show that the ratings were reliable and above the accepted value of 0.7 (Koo & Li, 2016).

1.a Accent faking task

Table S1. Intraclass correlation coefficients: Ich gehe einkaufen und auch spazieren.

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.725	.451	.849	7.419	96	384	0,000

Table S2. Intraclass correlation coefficients: Viele Menschen leben gerne in Österreich.

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.782	.610	.870	7.316	96	384	0,000

Table S3. Intraclass correlation coefficients: Meine Mutter lebt in der Türkei.

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig

Average Measures	.842	.699	.909	10.52	96	384	0,000
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Table S4. Intraclass correlation coefficients: Ich trinke gerne schwarzen Kaffee.

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.750	.504	.861	7.729	96	384	0,000

Table S5. Intraclass correlation coefficients: Warum sind so wenig Leute hier?

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.720	.492	.835	6.112	96	384	0,000

Table S6. Intraclass correlation coefficients: Wer hat meine Tasche gesehen?

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.740	.582	.835	5.428	96	384	0,000

Table S7. Intraclass correlation coefficients for all six sentences

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.927	.897	.948	22.795	96	384	0,000

1.b Language production tasks

Table S8. Intraclass correlation coefficients for Mandarin

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.786	.702	.849	7.472	96	1824	0,000

Table S9. Intraclass correlation coefficients for Tagalog

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.795	.704	.860	8.218	95	1425	0,000

Table S10. Intraclass correlation coefficients for Japanese

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.875	.823	.913	13.627	96	2208	0,000

Table S11. Intraclass correlation coefficients for Farsi

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.839	.770	.889	9.726	96	1440	0,000

Table S12. Intraclass correlation coefficients for Slovak

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.801	.720	.861	8.320	96	1824	0,000

1.c Singing tasks

Table S13. Intraclass correlation coefficients for Melody

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.949	.930	.963	22.805	96	1056	0,000

Table S14. Intraclass correlation coefficients for Voice quality

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.967	.956	.976	32.506	96	1056	0,000

Table S15. Intraclass correlation coefficients for Rhythm

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.908	.870	.936	14.775	96	1056	0,000

Table S16. Intraclass correlation coefficients for Clarity/ Focus

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.932	.906	.952	19.130	96	1344	0,000

Table S17. Intraclass correlation coefficients for Volume

		95% Confidence Interval		F Test with True Value 0			
	Intraclass Correlation	Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.949	.929	.965	27.304	96	1440	0,000

Table S18. Intraclass correlation coefficients for Vocal range

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Average Measures	.880	.820	.920	13.920	96	1248	0,000

2. Cronbach alpha's

To assess the interrater reliability of the individual eight questions asking participants about their singing behaviour during childhood, we computed Cronbach's α coefficients. The results show that the reliability is high, with all Cronbach's $\alpha = .813$, and with all individual questions being above the statistically accepted range of 0.7 (we include Table 19 below for transparency).

Table S19. Cronbach's α coefficients for the singing during childhood questionnaire

Concept Singing behavior during childhood

	Cronbach's α if item deleted
As a child I enthusiastically joined in with the singing at church and similar events whenever the possibility arose (Q1).	.781
As a child I was encouraged to sing by my caretakers and we sang together on a weekly basis even if there were no special events. (Q2).	.842
As a child I enjoyed singing in a choir, with friends, at Christmas, birthdays, or at similar occasions (Q3).	.770
As a child I sang very often since I wanted to become a musician or singer (Q4).	.794
As a child I used to sing whenever I could such as in the bathroom, in the car, when I played with friends (Q5).	.801
As a child I liked being a member of our school choir, or would have liked being a member or a school choir (Q6).	.758
As a child I enjoyed singing a song that had been played to me (e.g., in the radio) (Q7).	.804
As a child I used to sing more often than my friends (Q8).	.765

Section S3

Table S20| Correlations of the individual variables

	Years of formal English Instruction	Age of onset	AMMA T	AMMA R	Singing childhood	Singing self	Singing hours per week	Singing total	Language perception	Language productio n task	STM F	STM B
English faking accent	.605**	-.645**	.140	.180	.123	.345**	.168	.536**	.261**	.386**	.330**	.329**
Years of formal English instr		-.523**	.137	.052	.156	.171	.230*	.433**	.078	.411**	.211*	.230*
Age of onset			-.044	-.082	-.090	-.170	-.109	-.395**	-.089	-.214*	-.195	-.210*
AMMA T				.775**	.140	.071	.099	.298**	.180	.439**	.145	.215*
AMMA R					.047	-.004	-.011	.325**	.296**	.318**	.156	.302**
Singing childhood						.387**	.502**	.400**	-.106	.249*	.095	-.123
Singing self							.460**	.531**	-.012	.086	.179	-.161
Singing hours per week								.405**	-.122	.063	.108	-.132
Singing total									.099	.422**	-.249*	.226*
Language perception										.285**	.258*	.200*
Language production task											.494**	.421**
STM F												.387**

* $p < .05$ (uncorrected, two-tailed). ** $p < .001$ (uncorrected, two-tailed)

Section S4

We ran a PCA analysis with the following singing variables: Melodic Singing Ability, Rhythmic Singing Ability, Voice Quality, Clarity/ Focus, Vocal Range, Volume, Singing Hours per Week, Singing Self-Estimation and Singing Childhood. We applied orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure for sampling adequacy for the analysis showed that KMO =.89 and all KMO variables were > .86, which was well above the accepted limit of .5. A Bartlett's test of sphericity, $\chi^2 (36) = 1230.797$, $p < .001$, indicated that the correlations between items were sufficiently large to conduct a PCA analysis. A first analysis was run to obtain eigenvalues for each component in the data. Two components had eigenvalues over 1 and, in combination, they explained 83.40% of the variance (Table 21).

Table S21. Summary of the PCA analysis with the singing variables only.

	Rotated Factor Loadings	
	Real singing tasks	Self-reported singing
Voice Quality	.942	
Clarity/ Focus	.939	
Melodic Singing Ability	.938	
Rhythmic Singing Ability	.919	
Vocal Range	.912	
Volume	.901	
Singing Hours per Week		.835
Singing Childhood		.800
Singing Self-Estimation		.619
CRONBACH	0.98	0.710
Eigenvalues	6.325	1.181
% explained	59.539	23.861

Based on the results of the PCA, we created a new variable which we coined “Singing Total”. This new variable was obtained by averaging participants’ scores across the six original singing variables collected during the singing tasks: Melodic Singing Ability, Rhythmic Singing Ability, Voice Quality, Clarity/ Focus, Vocal Range, Volume.