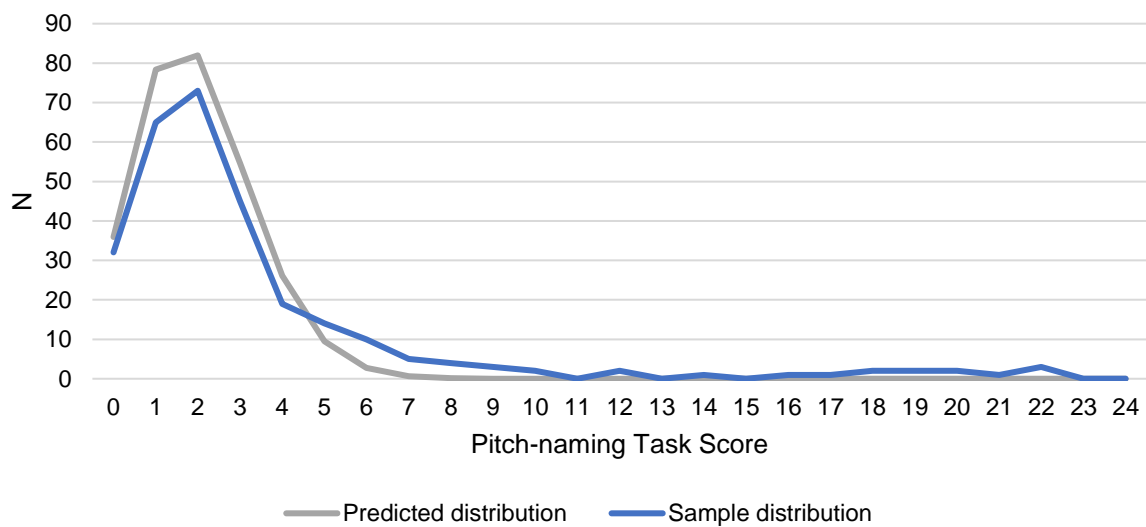**Investigating the Relationship Between Childhood Music Practice and Pitch-Naming**

Ability in Professional Musicians and a Population-Based Twin Sample

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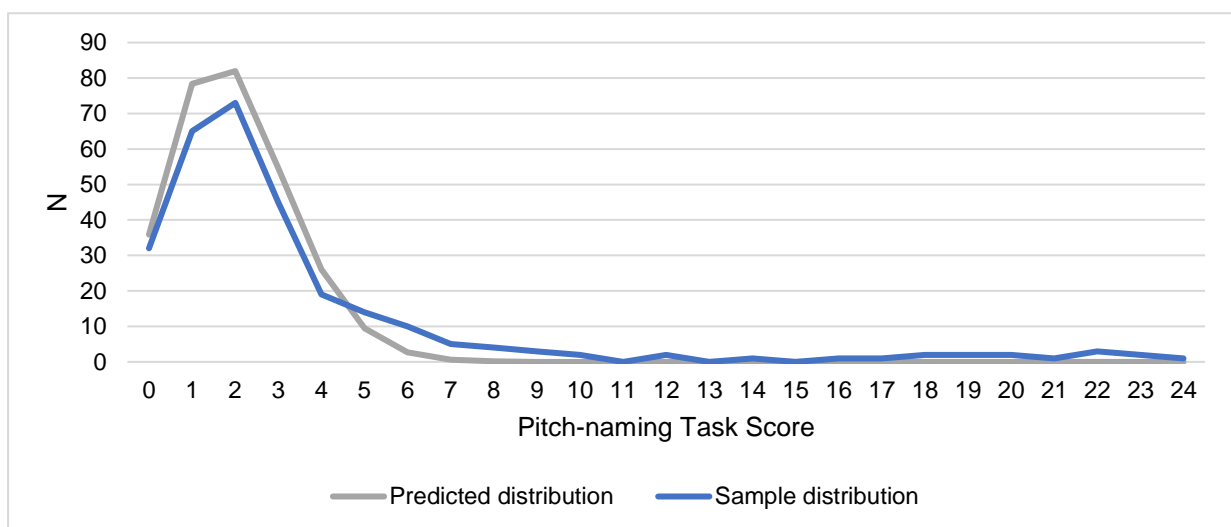
Supplementary Figure 1

Predicted vs. Sample Pitch-Naming Distributions for a) Musicians and b) Twins

a)

b)

Note. The grey line represents a binomial distribution for which $p = 1/12$, corresponding to chance performance on the pitch-naming task. While the majority of both samples perform at chance level (shown by the peaks on the left-hand side of the graphs), musicians are more

likely to exceed chance performance, particularly in the intermediate range (5-10). For musicians, 56/290 (19.3%) of the sample exceed chance performance at $p < .05$, while 126/1447 (8.7%) of the twins perform above chance.

Supplementary Table 1

Music Experience and Aptitude Information

	Musicians (N = 290)		General population sample (N = 1447)		Twins (N = 734 [367 pairs])	
Music achievement	SMAQ: 53.4 (17.4)	25-131	CAQ: 3.7 (1.3) [N = 1440]	1-7	CAQ: 3.6 (1.4)	1-7
Aptitude						
Rhythm	17.2 (1.0)	13-18	16.1 (1.8)	5-18	16.1 (1.7)	8-18
Melody	11.0 (3.1)	4-18	8.3 (3.1)	0-18	8.2 (3.0)	0-17
Pitch	24.2 (2.6)	7-27	20.9 (4.4)	5-27	20.9 (4.5)	6-27
Pitch-naming						
Piano timbre accuracy	1.7 (2.5)	0-12	1.1 (1.1)	0-11	1.2 (1.2)	0-11
Sine timbre accuracy	1.7 (2.2)	0-12	1.2 (1.2)	0-12	1.2 (1.3)	0-12

Supplementary Table 2

Correlation Matrix for Predictors in the Musician Sample

	Age	Age of onset of playing	Hours of practice (0 – 5 years)	Hours of practice (6 – 11 years)	Hours of practice (12 – 17 years)	Current practice
Age	1	.13	-.08	-.07	-.05	.01
Age of onset of playing		1	-.60***	-.72***	-.17*	.00
Hours of practice (0 – 5 years)			1	.45***	.14	.12
Hours of practice (6 – 11 years)				1	.50***	.23**
Hours of practice (12 – 17 years)					1	.40***
Current practice						1

* $p < .05$, ** $p < .01$, *** $p < .001$

Supplementary Table 3

Variance Inflation Factors in the Musician Sample

	Variance Inflation Factor
Age	1.12
Age of onset of playing	3.04
Hours of practice (0 – 5 years)	1.60
Hours of practice (6 – 11 years)	3.21
Hours of practice (12 – 17 years)	1.69
Current practice	1.28

Supplementary Table 4

Model 3 for the Musician Sample

Predictors	B (95% CI)	Standard Error	β	Significance
(Intercept)	246936.9 (157712.0 – 336161.8)	45327.7	-0.1	<.001***
Sex (M)	22229.2 (-282.9 – 44741.4)	11436.5	0.2	.053
Main instrument ('fixed-do')	-13668.5 (-37533.4 – 10196.4)	12123.8	-0.2	.261
Age	-303.0 (-1228.3 – 622.2)	470.1	-0.0	.520
Age of onset of playing	-3259.1 (-11161.9 – 4643.7)	4014.7	-0.1	.418
Hours of practice (0 – 5 years)	-54.6 (-138.2 – 29.0)	42.5	-0.1	.199
Hours of practice (6 – 11 years)	-31.4 (-61.4 – -1.5)	15.2	-0.2	.040*
Hours of practice (12 – 17 years)	12.4 (-12.9 – 37.6)	12.8	0.1	.335
Current practice	-4039.6 (-11846.7 – 3767.5)	3966.1	-0.1	.309

* $p < .05$, ** $p < .01$, *** $p < .001$

Supplementary Table 5

Correlation Matrix for Predictors in the Twin Sample

	Age	Age of onset of playing	Hours of practice (0 – 5 years)	Hours of practice (6 – 11 years)	Hours of practice (12 – 17 years)	Current practice
Age	1	-.01	0	.03	0	.01
Age of onset of playing		1	-.5***	-.74***	-.26***	-.12***
Hours of practice (0 – 5 years)			1	.46***	.20***	.15***
Hours of practice (6 – 11 years)				1	.51***	.27***
Hours of practice (12 – 17 years)					1	.54***
Current practice						1

* p < .05, ** p < .01, *** p < .001

Supplementary Table 6

Variance Inflation Factors in the Twin Sample

	Variance Inflation Factor
Age	1.01
Age of onset of playing	2.51
Hours of practice (0 – 5 years)	1.38
Hours of practice (6 – 11 years)	3.02
Hours of practice (12 – 17 years)	1.80
Current practice	1.46

Supplementary Table 7

Model 3 for the Twin Sample

Predictors	B (95% CI)	Standard Error	β	Significance
(Intercept)	15848.7 (14137.7 – 17559.8)	872.3	0.0	<.001***
Sex (M)	397.6 (-75.3 – 870.5)	241.1	0.1	.099
Main instrument ('fixed-do')	-813.9 (-1329.6 – -298.2)	262.9	0.1	.002**
Age	-11.5 (-37.2 – 14.2)	13.1	-0.0	.380
Age of onset of playing	51.0 (-69.9 – 171.8)	61.6	0.0	.408
Hours of practice (0 – 5 years)	0.7 (-0.9 – 2.3)	0.8	0.0	.376
Hours of practice (6 – 11 years)	-0.4 (-1.1 – 0.2)	0.3	-0.1	.192
Hours of practice (12 – 17 years)	0.2 (-0.2 – 0.6)	0.2	0.0	.280
Current practice	-39.8 (-137.0 – 57.4)	49.6	-0.0	.422