## **Music-to-Color Associations of Single-line Piano Melodies in Non-Synesthetes**

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**Supplementary Materials** 

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**Figure S1.** The four basic melodies in the major mode that were used as stimuli in the experiment. Each of the four basic melodies was based on a theme by Mozart from (1) the Duport variations in D-Major (K. 573), (2) Theme and 9 Variations in C-Major on "Lison Dormait" from Dezede's "Julie" (K. 264), (3) Theme and 6 variations in G-minor on "Helas j'ai perdu mon amant" (K. 360), and (4) Serenade No. 12 in C-minor from the 4th movement (K. 388). All themes were transposed to D-major and D-minor from their original key. The note-dense variations were based on Mozart's own variations of these themes, but were simpler and more regular than Mozart's compositions to conform to our note-rate requirements. The notes that were added to the basic melody generally produced twice as many notes/beat by interpolating a single additional note between each pair of notes in the original melody.

**Table S1.** Temporal statistics of the four melodies played at their slow and fast tempi. Red entries are relevant to the determination of the modal note-value and modal note-rate for each of the four melodies.

	MELODY 1		MELODY 2		MELODY 3		MELODY 4	
	Theme	Variation	Theme	Variation	Theme	Variation	Theme	Variation
Time signature	3/4	3/4	3/4	3/4	4/4	4/4	2/4	2/4
# Measures	25	25	24	24	27.25	27.25	16.25	16.25
# Beats/measure	3	3	3	3	4	4	2	2
Total # beats	75	75	72	72	109	109	32.5	32.5
# Half-notes	6	0	10	0	3	0	0	1
# Quarter-notes	58	0	46	0	76	0	27	1
# Eighth-notes	0	144	0	143	0	189	5	58
# Half-rests	0	0	0	0	2	0	0	0
# Quarter-rests	5	2	6	0	23	10	1	0
# Eighth-rests	0	2	0	1	0	9	4	1
Total # notes	69	148	62	144	104	208	37	61
% Quarter-notes	84	0	74	0	73	0	73	1
% Eighth-notes	0	97	0	99	0	91	13	95
Modal note-value	1/4	1/8	1/4	1/8	1/4	1/8	1/4	1/8
SLOW TEMPO								
Tempo (BPM)	140	120	140	120	140	120	140	120
Total duration (sec.)	32	37	31	36	47	54	14	16
Modal notes/min.	140	240	140	240	140	240	140	240
Avg. notes/min.	129	237	121	240	134	229	159	225
FAST TEMPO								
Tempo (BPM)	240	220	240	220	240	220	240	220
Total duration (sec.)	19	20	18	20	27	30	8	9
Modal notes/min.	240	440	240	440	240	440	240	440
Avg. notes/min.	221	434	207	440	229	420	273	413

**Table S2.** CIE 1931 values and Munsell values for the 32 chromatic colors and CIE 1931 values for the five achromatic colors (CIE Illuminant C). (Table from Palmer et al., 2013).

Color		Х	у	Y	Hue	Value/Chroma
Red	Saturated	0.549	0.313	22.93	5 R	5/15
	Light	0.407	0.326	49.95	5 R	7/8
	Muted	0.441	0.324	22.93	5 R	5/8
	Dark	0.506	0.311	7.60	5 R	3/8
Orange	Saturated	0.513	0.412	49.95	5 YR	7/13
	Light	0.399	0.366	68.56	5 YR	8/6
	Muted	0.423	0.375	34.86	5 YR	6/6
	Dark	0.481	0.388	10.76	5 YR	3.5/6
Yellow	Saturated	0.446	0.472	91.25	5 Y	9/12
	Light	0.391	0.413	91.25	5 Y	9/6.5
	Muted	0.407	0.426	49.95	5 Y	7/6.5
	Dark	0.437	0.450	18.43	5 Y	5/6.5
Chartreuse	Saturated	0.387	0.504	68.56	5 GY	8/11
	Light	0.357	0.420	79.90	5 GY	8.5/6
	Muted	0.360	0.436	42.40	5 GY	6.5/6
	Dark	0.369	0.473	18.43	5 GY	4.5/6
Green	Saturated	0.254	0.449	42.40	3.75 G	6.5/11.5
	Light	0.288	0.381	63.90	3.75 G	7.75/6.25
	Muted	0.281	0.392	34.86	3.75 G	6/6.25
	Dark	0.261	0.419	12.34	3.75 G	3.75/6.25

Cyan	Saturated	0.226	0.335	49.95	5 BG	7/9
	Light	0.267	0.330	68.56	5 BG	8/5
	Muted	0.254	0.328	34.86	5 BG	6/5
	Dark	0.233	0.324	13.92	5 BG	4/5
Blue	Saturated	0.200	0.230	34.86	10 B	6/10
	Light	0.255	0.278	59.25	10 B	7.5/5.5
	Muted	0.241	0.265	28.90	10 B	5.5/5.5
	Dark	0.212	0.236	10.76	10 B	3.5/5.5
Purple	Saturated	0.272	0.156	18.43	5 P	4.5/17
	Light	0.290	0.242	49.95	5 P	7/9
	Muted	0.287	0.222	22.93	5 P	5/9
	Dark	0.280	0.181	7.60	5 P	3/9
Achromatic	Black	0.310	0.316	0.30		
	Dark gray	0.310	0.316	12.34		
	Med Gray	0.310	0.316	31.88		
	Light Gray	0.310	0.316	63.90		
	White	0.310	0.316	116.00		