

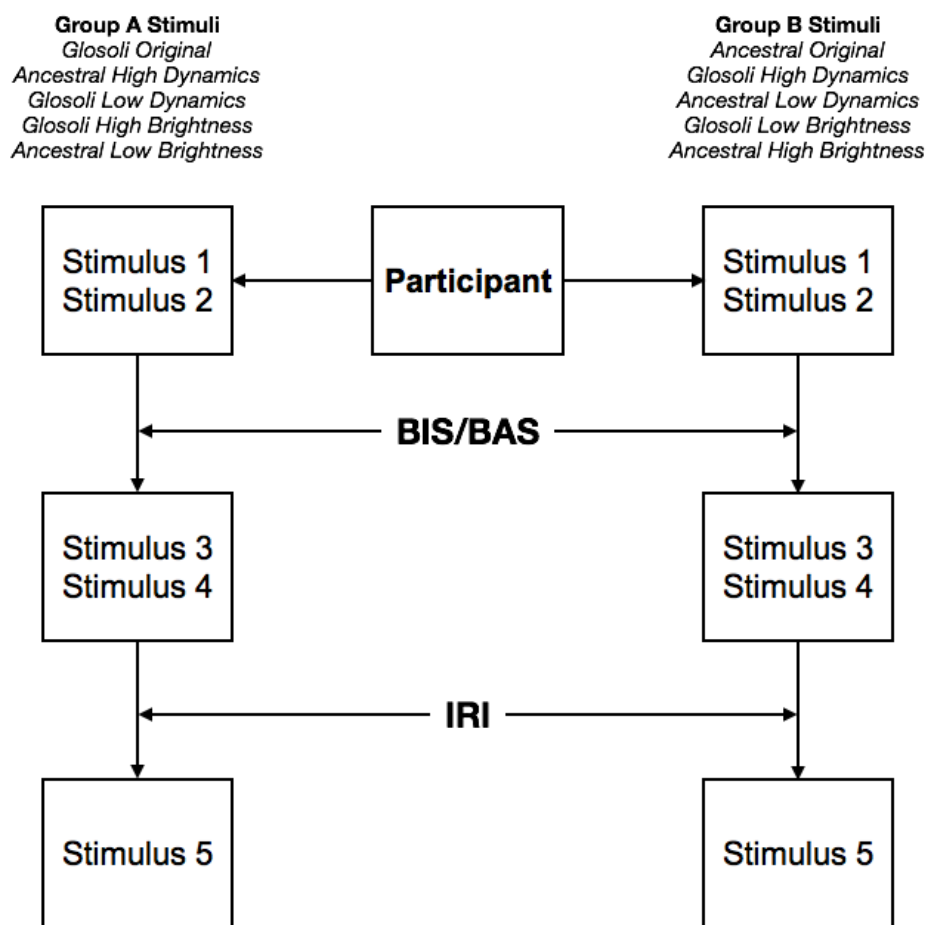
A Vigilance Explanation of Musical Chills? Effects of Loudness and Brightness

Manipulations.

Supplementary Material

Supplementary Figure 1: Visualisation of the experimental procedure, and textual

information on pseudorandomisation of stimulus order.



For Group A or Group B, a pseudorandom stimulus presentation order was created for each participant. It was ensured that any version of the experimental (Glosoli) or control (Ancestral) stimulus was not heard twice in succession, and that no type of psychoacoustic manipulation (loudness or brightness) was heard twice in succession. This resulted in 12 possible stimulus presentation orders for a participant in either group; all orders were administered once, and eight orders were administered twice (as per 20 participants in each experimental group).

Supplementary Table 1: Descriptive Statistics for the Participant Sample (N = 40)

Variable	Subscales	Mean	SD	Min	Max
Age		28.51	8.36	19	52
Trait Empathy		63.70	7.34	50	79
	<i>Empathic Concern</i>	13.18	2.95	7	20
	<i>Perspective Taking</i>	15.05	3.30	8	24
	<i>Fantasy</i>	14.68	3.87	7	22
	<i>Emotional Distress</i>	20.16	3.30	12	27
Behavioural Inhibition		12.52	1.44	10	16
Behavioural Activation		22.08	2.99	16	27
	<i>Reward Responsiveness</i>	7.58	1.78	5	11
	<i>Drive</i>	7.50	1.15	5	10
	<i>Fun Seeking</i>	6.74	1.40	4	9

Supplementary Table 2: Descriptive Statistics for the Subjective Feeling Data for Each Piece (Averaged Across Conditions)

Descriptor	Glósóli Mean (SD)	Ancestral Mean (SD)
Enjoyment	3.59 (1.04)	3.29 (1.30)
Agitated	1.96 (1.26)	1.84 (1.17)
Joy	3.23 (1.58)	3.36 (1.70)
Energy	3.28 (1.55)	3.30 (1.56)
Affection	2.78 (1.48)	2.86 (1.51)
Moved	3.17 (1.44)	3.49 (1.80)
Sad	1.86 (1.25)	2.15 (1.32)
Sentimental	2.83 (1.42)	2.84 (1.50)
Nervous	1.72 (1.10)	1.64 (1.12)
Tender	2.42 (1.35)	2.29 (1.32)
Nostalgia	2.56 (1.62)	2.82 (1.70)

Supplementary Table 3: Descriptive Statistics for the Physical Activity Data Across Pieces

Decsriptor	Glósóli Total Reports	Ancestral Total Reports
Coldness	33	32
Warmth	18	16
Lump in the Throat	4	9
Tears	1	3
Smiling	35	29
Frowning	1	9

Supplementary Table 4: Likelihood Ratio Tests Statistics for Physical Activity Across Manipulations and Chills Experience (chills vs. no chills)

Variable	Loudness Manipulations	Brightness Manipulations	Chills vs. No Chills Experiences
<i>Warm</i>	/	$\chi^2 [2, 7] = 0.73, p = .98$	$\chi^2 [2, 3] = 1.39, p = .23$
<i>Smile</i>	$\chi^2 [2, 7] = 2.84, p = .72$	$\chi^2 [2, 7] = 5.90, p = .31$	$\chi^2 [2, 3] = 0.27, p = .59$
<i>Cold</i>	$\chi^2 [2, 7] = 3.05, p = .69$	$\chi^2 [2, 7] = 3.45, p = .63$	$\chi^2 [2, 3] = 0.63, p = .42$
<i>Frown</i>	/	/	$\chi^2 [2, 3] = 0.41, p = .51$
<i>Tears</i>	/	/	$\chi^2 [2, 3] = 2.10, p = .14$
<i>Throat</i>	/	/	$\chi^2 [2, 3] = 0.08, p = .76$

Note: Table entries marked with ‘/’ represent those instances in which there were too few reports of a physical sensation to perform meaningful statistical tests.

Supplementary Table 5: Likelihood Ratio Tests for Subjective Feeling Across
Manipulations and Chills Experience (chills vs. no chills)

Variable	Loudness Manipulations	Brightness Manipulations	Chills vs. No Chills Experiences
<i>Enjoyment</i>	$\chi^2 [3, 8] = 33.12$ $p < .001^{***}$	$\chi^2 [3, 8] = 1.70, p =$.88	$\chi^2 [3, 4] = 0.001, p =$.97
<i>Energy</i>	$\chi^2 [3, 8] = 8.61, p =$.12	$\chi^2 [3, 8] = 4.31, p =$.50	$\chi^2 [3, 4] = 1.30, p =$.25
<i>Joy</i>	$\chi^2 [3, 8] = 7.60, p =$.17	$\chi^2 [3, 8] = 1.32, p =$.93	$\chi^2 [3, 4] = 1.09, p =$.29
<i>Agitated</i>	$\chi^2 [3, 8] = 5.46, p =$.36	$\chi^2 [3, 8] = 5.70, p =$.33	$\chi^2 [3, 4] = 3.70, p =$.054
<i>Affection</i>	$\chi^2 [3, 8] = 2.64, p =$.75	$\chi^2 [3, 8] = 2.30, p =$.80	$\chi^2 [3, 4] = 0.20, p =$.65
<i>Moved</i>	$\chi^2 [3, 8] = 7.37, p =$.19	$\chi^2 [3, 8] = 2.60, p =$.76	$\chi^2 [3, 4] = 0.004, p =$.94
<i>Tender</i>	$\chi^2 [3, 8] = 2.49, p =$.77	$\chi^2 [3, 8] = 1.54, p =$.90	$\chi^2 [3, 4] = 0.21, p =$.64
<i>Nostalgia</i>	$\chi^2 [3, 8] = 2.69, p =$.74	$\chi^2 [3, 8] = 2.25, p =$.81	$\chi^2 [3, 4] = 3.02, p =$.08
<i>Sentimental</i>	$\chi^2 [3, 8] = 9.55, p =$.08	$\chi^2 [3, 8] = 7.89, p =$.16	$\chi^2 [3, 4] = 0.007, p =$.93
<i>Sadness</i>	$\chi^2 [3, 8] = 2.91, p =$.71	$\chi^2 [3, 8] = 5.92, p =$.31	$\chi^2 [3, 4] = 1.60, p =$.20
<i>Nervous</i>	$\chi^2 [3, 8] = 2.01, p =$.84	$\chi^2 [3, 8] = 3.09, p =$.68	$\chi^2 [3, 4] = 4.41, p =$.03

Note: Following Bonferroni corrections for multiple comparisons, only one likelihood ratio test remained statistically significant, reported in the main manuscript and bolded in the above table.