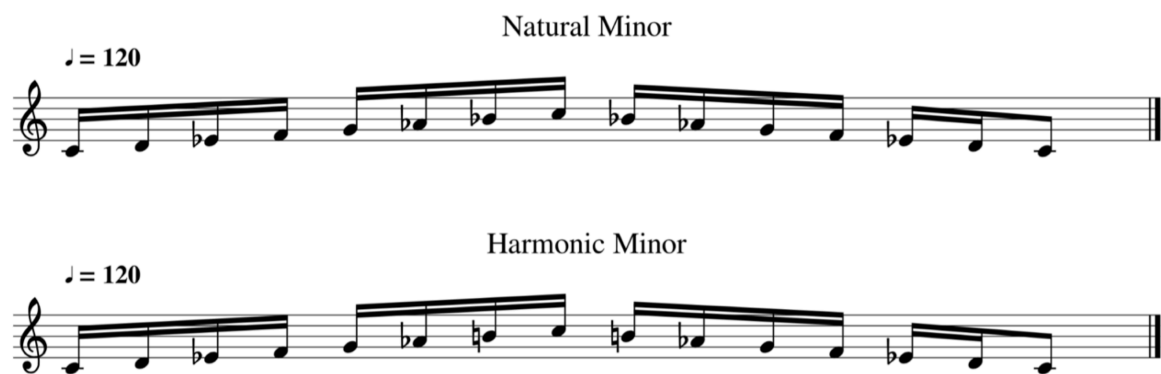


The listening test of the mood categories Angry, Scary, and Sad

We conducted a listening test to determine the trends in 3 different moods for different pitches, dynamics, modes.

The stimuli in our listening test consisted of short piano scale excerpts with different modes, pitches, and dynamic levels. We tested two modes: Natural Minor and Harmonic Minor. For pitch, we considered seven different pitch levels from C1 to C7 with notes ranging over one octave. For dynamics, we used two dynamic levels loud (*forte*) and soft (*piano*). The total number of excerpts was 28 (2 modes \times 7 pitches \times 2 dynamic levels).

The scale excerpts consisted of an ascending and descending sixteenth note scale. For example, the scales for the two modes starting from C4 are shown in the below figure. The scale excerpts were all based on C.



There were about 25 subjects hired to take our listening test. All of the subjects were university students and without known hearing problems.

In order to uncover the trends in 3 mood categories Angry, Scary, and Sad, our listening test included 3 sub-tests. For each sub-test, the 28 excerpts were presented in a random order one-by-one, and afterwards each subject was asked: "Is the mood of the music Angry?" (See the below figure). For the mood categories Scary and Sad, similar questions were asked. The three mood categories (i.e., sub-tests) were also presented in a random order.

Is the mood of the music Angry?

Yes (press 1)

No (press 2)

Positive replies (i.e., Yes) were taken as 1 and negative replies (i.e., No) as 0, and the average over all listeners determined the final value for each excerpt. The results were presented in the below 2 pages.

Angry	C1	C2	C3	C4	C5	C6	C7	The number of Subjects
								30
Natural Minor (Forte)	0.87	0.77	0.40	0.40	0.23	0.10	0.33	Sum (Natural Minor)
Natural Minor (Piano)	0.57	0.17	0.00	0.03	0.00	0.03	0.07	3.97
Harmonic Minor (Forte)	0.80	0.73	0.47	0.40	0.13	0.23	0.37	Sum (Harmonic Minor)
Harmonic Minor (Piano)	0.57	0.30	0.07	0.03	0.07	0.00	0.00	4.17

Scary	C1	C2	C3	C4	C5	C6	C7	The number of Subjects
								28
Natural Minor (Forte)	0.79	0.54	0.29	0.46	0.25	0.11	0.29	Sum (Natural Minor)
Natural Minor (Piano)	0.75	0.32	0.14	0.14	0.29	0.36	0.25	4.96
Harmonic Minor (Forte)	0.82	0.68	0.43	0.32	0.29	0.21	0.29	Sum (Harmonic Minor)
Harmonic Minor (Piano)	0.79	0.46	0.36	0.29	0.32	0.14	0.21	5.61

Sad	C1	C2	C3	C4	C5	C6	C7	The number of Subjects
								23
Natural Minor (Forte)	0.48	0.35	0.22	0.26	0.17	0.30	0.13	Sum (Natural Minor)
Natural Minor (Piano)	0.57	0.48	0.26	0.43	0.52	0.43	0.30	4.91
Harmonic Minor (Forte)	0.48	0.30	0.26	0.22	0.30	0.35	0.17	Sum (Harmonic Minor)
Harmonic Minor (Piano)	0.57	0.57	0.35	0.30	0.30	0.43	0.22	4.83

