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### ***Expressive gesture and style in Schubert song performance: Examples of musical material and experimental method***

The aim of the study was to examine the influence of unfamiliarity with performing and recording style on the perception of performances on record as well as the influence of the quality of the reproduction of a record. Six experiments were run that tested the effects of recording date and version of a recording on different aspects of the perception of the recorded performance. Recordings were used of *Die junge Nonne*, a late song by Franz Schubert, sung by famous sopranos. The effect of recording date implicitly tests the effects of familiarity of the performing style and of quality of the original recording and its reproduction. The assumption is that if recording conditions and familiarity with performing style systematically influence perception, a linear effect of age on perception should be observed. If on the other hand, other aspects than recording/reproduction quality and familiarity with performing style are more important for perception of performance, this linear effect of age should be less clearly observed and should have only limited predictable power.

Examples of a noisy and a clean version of a 78 recording:

Susan Strong 1907 fragment from *Die junge Nonne* flat transfer

Susan Strong 1907 fragment from *Die junge Nonne* cleaned commercial version

The effect of version distinguishes between clean and noisy reproductions of a recording. The original recording is the same, but the reproduction differs in noisiness: 78 recordings are transferred either in a 'flat' way, i.e. without any processing, or they are cleaned using noise-reduction and anti-click software. Tape or digital recordings issued on CD are, on the other hand, already perfectly clean. To get two versions of these recordings, noise was added and the signal was low-pass filtered to some extent.

The six experiments used the same material, but tested different aspects of listeners' perception of performances. The aspects considered were judgments of the age of the recording (Exp1), the quality of the performance and the emotional impact of the performance (Exp2), the dynamics of the performance (Exp3), the tension developments within a performance (Exp4), the clarity and the variety of the performed sounds (Exp5), and the valence and activity of the perceived emotion (Exp6).

Three of these aspects are perceptual, namely perception of dynamics, clarity and variety. Three others concern the perception of expressive intentions of the performer, namely judgments of tension, and judgments of the valence and activity of perceived emotion. Two aspects are subjective evaluations and concern listeners' evaluations of quality and emotional impact of the performance. Finally, the judgment of age of the recording (Exp1) examines participants' intuition and knowledge about recording conditions and performing style. Based on the characteristics of the recording and performance, the participant had to estimate when a recording was made.

An example of the instruction for an experiment is given below. Participants were seated behind a computer and read the instruction from paper. On the computer

screen, they saw an interface with a play button, rating buttons and an ok/save button (example is given in Figure 6). They used a mouse to play a musical fragment, give the ratings, and continue to the next stimulus. Participants had a background in classical music and had had more than 10 years of formal musical training.

### Instruction experiment 6

In this experiment, your task is to indicate the emotion you perceive “in” the performance. You do this by characterising the perceived emotion along two dimensions: valence and activity. The term valence is used to indicate whether the perceived emotion is positive or negative. The term activity is used to indicate whether the perceived emotion is active or passive.

The dimensions of valence and activity were found by different researchers to give a suitable summary of emotions and relations between them. Some emotions have activity associated with them, such as joy and anger, while other emotions have passivity associated with them, such as sadness, and boredom. In addition, some emotions are seen as positive, while others are considered negative.

In this experiment, you indicate valence and activity on a scale from 1 – 7 for 48 fragments of recorded performances of Schubert songs. When rating valence, 1 stands for negative and 7 for positive. When rating activity, 1 stands for low and 7 for high. Please try to use the entire scale, so try to use both the extremes as well as the middle levels. Note that the emotion you feel may be different from the emotion you perceive in the performance. In the current task, we are interested in the communication from performer to listener. So we would like to know what intended emotion you perceive rather than how much the music affects you.

<i>Rating</i>	<i>Affect</i>	<i>Quality</i>
7	0	0
6	0	0
5	0	0
4	0	0
3	0	0
2	0	0
1	0	0

**Figure 6** Example of interface used in the experiments. For experiment 2, the labels above the rating scale were affect and quality. For experiment 6, they were instead activity and valence etc.