**Table S1**

List of Parameters Used in the Recurrence Quantification Analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Signal | Embedding dimension | Delay | Radius |
| Pronunciations per second | 8 | 2 | 2.00 |
| Amplitude | 1 | 2 | 0.10 |
| Pitch | 1 | 2 | 0.05 |
| Pause duration | 1 | 2 | 0.05 |

**Table S2**

List With Variables of Recurrence Quantification Analysis

|  |  |
| --- | --- |
| 1 | average amplitude of pronunciation - mean |
| 2 | average amplitude of pronunciation - trend |
| 3 | average amplitude of pronunciation - average diagonal line length |
| 4 | average amplitude of pronunciation - determinism rate  |
| 5 | average amplitude of pronunciation - diagonal recurrence entropy  |
| 6 | average amplitude of pronunciation - laminarity |
| 7 | average amplitude of pronunciation - maximum diagonal line length |
| 8 | average amplitude of pronunciation - maximum vertical line length  |
| 9 | average amplitude of pronunciation - recurrence rate |
| 10 | average amplitude of pronunciation - recurrence time entropy |
| 11 | average amplitude of pronunciation - recurrence time type 1 (including the time of the pattern) |
| 12 | average amplitude of pronunciation - standard deviation |
| 13 | average amplitude of pronunciation - recurrence time type 2 (minus the time of the pattern) |
| 14 | average amplitude of pronunciation - trapping time |
| 15 | average pitch of pronunciation - mean |
| 16 | average pitch of pronunciation - trend |
| 17 | average pitch of pronunciation - average diagonal line length |
| 18 | average pitch of pronunciation - determinism rate |
| 19 | average pitch of pronunciation - diagonal recurrence entropy  |
| 20 | average pitch of pronunciation - laminarity |
| 21 | average pitch of pronunciation - maximum diagonal line length |
| 22 | average pitch of pronunciation - maximum vertical line length |
| 23 | average pitch of pronunciation - recurrence rate |
| 24 | average pitch of pronunciation - recurrence time entropy  |
| 25 | average pitch of pronunciation - recurrence time type 1 (including the time of the pattern) |
| 26 | average pitch of pronunciation - standard deviation |
| 27 | average pitch of pronunciation - recurrence time type 2 (minus the time of the pattern) |
| 28 | average pitch of pronunciation - trapping time |
| 29 | average duration of pause - mean |
| 30 | average duration of pause - trend |
| 31 | average duration of pause - average diagonal line length |
| 32 | average duration of pause - determinism rate  |
| 33 | average duration of pause - diagonal recurrence entropy  |
| 34 | average duration of pause - laminarity |
| 35 | average duration of pause - maximum diagonal line length |
| 36 | average duration of pause - maximum vertical line length |
| 37 | average duration of pause - recurrence rate |
| 38 | average duration of pause - recurrence time entropy |
| 39 | average duration of pause - recurrence time type 1 (including the time of the pattern) |
| 40 | average duration of pause - standard deviation |
| 41 | average duration of pause - recurrence time type 2 (minus the time of the pattern) |
| 42 | average duration of pause - trapping time  |
| 43 | pronunciations per second - mean |
| 44 | pronunciations per second - trend |
| 45 | pronunciations per second - average diagonal line length |
| 46 | pronunciations per second - determinism rate |
| 47 | pronunciations per second - diagonal recurrence entropy |
| 48 | pronunciations per second - laminarity  |
| 49 | pronunciations per second - maximum diagonal line length  |
| 50 | pronunciations per second - maximum vertical line length  |
| 51 | pronunciations per second - recurrence rate |
| 52 | pronunciations per second - recurrence time entropy  |
| 53 | pronunciations per second - recurrence time type 1 (including the time of the pattern) |
| 54 | pronunciations per second – standard deviation |
| 55 | pronunciations per second - recurrence time type 2 (minus the time of the pattern) |
| 56 | pronunciations per second - trapping time |



**Fig. S1.** Variable importance, scaled according to the "varImp" method in the caret R library for the model with the RQA variables in Grade 2.



**Fig. S2.** Variable importance, scaled according to the "varImp" method in the caret R library for the model with the GAT variables in Grade 2.



**Fig. S3.** Variable importance, scaled according to the "varImp" method in the caret R library for the model with the RQA variables in Grade 4.



**Fig. S4.** Variable importance, scaled according to the "varImp" method in the caret R library for the model with the GAT variables in Grade 4.