

### Additional file 1:

PICs for acoustic parameters over all hunger levels and over standardized hunger after 105-120 minutes. Bold typing indicates parameters that show potential for individual recognition.

| Acoustic parameters |                             |                | PIC over all hunger levels         |         |        |             | PIC over 105-102 minutes of food deprivation |         |        |             |
|---------------------|-----------------------------|----------------|------------------------------------|---------|--------|-------------|----------------------------------------------|---------|--------|-------------|
|                     |                             |                | mean $\pm$ sd                      | meanCVi | CVb    | PIC         | mean $\pm$ sd                                | meanCVi | CVb    | PIC         |
| Part1               | Duration (ms)               |                | 118.37 $\pm$ 22.31                 | 13.71   | 18.85  | <b>1.37</b> | 118.03 $\pm$ 22.95                           | 10.32   | 19.56  | <b>1.90</b> |
|                     | Amplitude modulation (1/ms) | variance       | (6.15 $\pm$ 0.92) $\times 10^{-3}$ | 20.17   | 14.95  | 0.74        | (6.25 $\pm$ 0.95) $\times 10^{-3}$           | 18.43   | 15.28  | 0.83        |
|                     | Frequency (Hz)              | mean           | 6767.72 $\pm$ 572.29               | 7.65    | 8.46   | <b>1.11</b> | 6652.35 $\pm$ 588.52                         | 6.61    | 8.90   | <b>1.35</b> |
|                     | Frequency modulation        | mean           | 23.72 $\pm$ 6.55                   | 20.50   | 27.62  | <b>1.35</b> | 23.87 $\pm$ 6.04                             | 16.67   | 25.43  | <b>1.53</b> |
|                     | Frequency modulation        | variance       | 463.46 $\pm$ 90.47                 | 20.58   | 19.52  | 0.95        | 476.87 $\pm$ 85.67                           | 18.39   | 18.06  | 0.98        |
|                     | Entropy                     | (log) mean     | -3.50 $\pm$ 0.48                   | -11.33  | -13.65 | <b>1.20</b> | -3.39 $\pm$ 0.47                             | -9.81   | -14.06 | <b>1.43</b> |
|                     | Entropy                     | variance       | 0.47 $\pm$ 0.12                    | 34.80   | 26.31  | 0.76        | 0.47 $\pm$ 0.15                              | 33.72   | 31.70  | 0.94        |
|                     | Pitch (Hz)                  | mean           | 3137.02 $\pm$ 607.72               | 21.96   | 19.37  | 0.88        | 3013.80 $\pm$ 623.02                         | 18.55   | 20.79  | <b>1.12</b> |
|                     | Pitch goodness              | mean           | 203.12 $\pm$ 46.02                 | 23.05   | 22.66  | 0.98        | 216.72 $\pm$ 53.62                           | 20.05   | 24.88  | <b>1.24</b> |
| Part2               | Duration (ms)               |                | 60.69 $\pm$ 16.21                  | 23.46   | 26.71  | <b>1.14</b> | 70.59 $\pm$ 19.14                            | 13.61   | 27.26  | <b>2.00</b> |
|                     | Amplitude modulation (1/ms) | (log) variance | (1.55 $\pm$ 0.57) $\times 10^{-3}$ | 69.37   | 36.44  | 0.53        | (1.45 $\pm$ 0.64) $\times 10^{-3}$           | 56.82   | 43.97  | 0.77        |
|                     | Frequency (Hz)              | mean           | 5634.74 $\pm$ 484.00               | 9.24    | 8.59   | 0.93        | 5635.27 $\pm$ 558.43                         | 8.41    | 9.96   | <b>1.18</b> |
|                     | Frequency modulation        | mean           | 40.56 $\pm$ 6.97                   | 13.41   | 17.18  | <b>1.28</b> | 41.47 $\pm$ 7.10                             | 10.78   | 17.23  | <b>1.60</b> |
|                     | Frequency modulation        | variance       | 599.90 $\pm$ 69.25                 | 16.91   | 11.54  | 0.68        | 614.84 $\pm$ 78.79                           | 14.42   | 12.89  | 0.89        |
|                     | Entropy                     | (log) mean     | -3.46 $\pm$ 0.47                   | -13.80  | -13.50 | 0.98        | -3.30 $\pm$ 0.51                             | -11.27  | -15.59 | <b>1.38</b> |
|                     | Entropy                     | variance       | 0.43 $\pm$ 0.11                    | 35.02   | 25.64  | 0.73        | 0.42 $\pm$ 0.12                              | 27.68   | 29.51  | <b>1.07</b> |
|                     | Pitch (Hz)                  | mean           | 3273.24 $\pm$ 624.57               | 21.40   | 19.08  | 0.89        | 3229.33 $\pm$ 664.07                         | 18.00   | 20.68  | <b>1.15</b> |
|                     | Pitch goodness              | mean           | 240.14 $\pm$ 58.76                 | 25.01   | 24.47  | 0.98        | 264.08 $\pm$ 63.04                           | 19.66   | 24.00  | <b>1.22</b> |