**Supplemental Table 1** Important research themes.

| **Index** | **Themes** | **Frequency** | **Dispersion** | **AR(1)** | ***p*** |
| --- | --- | --- | --- | --- | --- |
| 1 | emotional prosody | 479 | 332 | -0.1545 | 0.4631 |
| 2 | facial expression | 271 | 244 | 0.3425 | 0.0681 |
| 3 | emotion recognition | 400 | 218 | 0.5738 | 0.0005 |
| 4 | affective prosody | 194 | 142 | 0.6428 | 0.0009 |
| 5 | right hemisphere | 175 | 139 | 0.6242 | 0.0005 |
| 6 | vocal emotion | 153 | 131 | 0.5085 | 0.0033 |
| 7 | emotional speech | 189 | 120 | 0.4714 | 0.0084 |
| 8 | speech prosody | 112 | 112 | -0.5088 | 0.0032 |
| 9 | emotional expression | 103 | 99 | 0.1427 | 0.4887 |
| 10 | fundamental frequency | 96 | 96 | 0.1966 | 0.4184 |
| 11 | event-relate potential | 92 | 92 | 0.1094 | 0.5981 |
| 12 | emotional state | 91 | 91 | 0.0419 | 0.8399 |
| 13 | functional magnetic resonance imaging | 87 | 87 | -0.4196 | 0.0261 |
| 14 | emotional information | 86 | 86 | 0.1672 | 0.4210 |
| 15 | the brain | 85 | 85 | -0.2855 | 0.1502 |
| 16 | social interaction | 83 | 83 | -0.0120 | 0.9538 |
| 17 | emotion processing | 83 | 78 | -0.1362 | 0.5281 |
| 18 | frontal cortex | 78 | 78 | 0.0941 | 0.6624 |
| 19 | facial emotion | 107 | 73 | 0.2881 | 0.1377 |
| 20 | emotion perception | 91 | 73 | -0.3923 | 0.0358 |
| 21 | emotional content | 72 | 72 | -0.0206 | 0.9226 |
| 22 | social cognition | 99 | 71 | 0.5663 | 0.0022 |
| 23 | vocal expression | 69 | 69 | 0.0875 | 0.6640 |
| 24 | basic emotion | 70 | 67 | 0.3697 | 0.0499 |
| 25 | negative emotion | 67 | 67 | -0.1262 | 0.5410 |
| 26 | recognition task | 67 | 67 | 0.0153 | 0.9398 |
| 27 | autism spectrum disorder | 70 | 65 | 0.5188 | 0.0022 |
| 28 | different emotions | 62 | 62 | 0.2064 | 0.3207 |
| 29 | emotional stimulus | 60 | 60 | -0.0878 | 0.7010 |
| 30 | prosodic feature | 70 | 58 | 0.2528 | 0.1959 |
| 31 | prosodic cue | 58 | 58 | 0.2366 | 0.2883 |
| 32 | brain region | 58 | 58 | -0.0644 | 0.7523 |
| 33 | left hemisphere | 54 | 54 | 0.2114 | 0.2973 |
| 34 | neutral prosody | 54 | 54 | -0.1200 | 0.5468 |
| 35 | neural network | 59 | 53 | 0.0812 | 0.6876 |
| 36 | prosody recognition | 55 | 51 | 0.1480 | 0.4746 |
| 37 | prosody processing | 51 | 51 | 0.4830 | 0.0053 |
| 38 | superior temporal gyrus | 50 | 50 | -0.0963 | 0.6277 |
| 39 | facial affect | 74 | 47 | 0.0339 | 0.8690 |
| 40 | acoustic feature | 58 | 47 | 0.3479 | 0.1740 |
| 41 | auditory cortex | 47 | 47 | -0.0399 | 0.8431 |
| 42 | hearing impairment (HI) | 46 | 46 | 0.1328 | 0.5060 |
| 43 | prosodic information | 46 | 46 | -0.2102 | 0.3182 |
| 44 | emotional valence | 45 | 45 | 0.1078 | 0.5950 |
| 45 | parkinson's disease | 53 | 44 | -0.2384 | 0.2193 |
| 46 | reaction time | 49 | 44 | -0.1697 | 0.3879 |
| 47 | emotional face | 44 | 44 | 0.3746 | 0.0413 |
| 48 | the child | 44 | 44 | 0.4479 | 0.0121 |
| 49 | schizophrenia patient | 69 | 43 | 0.0429 | 0.8682 |
| 50 | the amygdala | 48 | 42 | 0.0678 | 0.7344 |
| 51 | young adult | 42 | 42 | -0.1704 | 0.3910 |
| 52 | prosody perception | 41 | 41 | 0.5419 | 0.0016 |
| 53 | acoustic analysis | 47 | 40 | -0.5667 | 0.0779 |
| 54 | emotional tone | 41 | 40 | 0.0935 | 0.6431 |
| 55 | inferior frontal gyrus | 40 | 40 | -0.1149 | 0.5698 |
| 56 | specific emotion | 40 | 40 | -0.2741 | 0.1585 |
| 57 | emotion recognition task | 40 | 40 | 0.2576 | 0.1795 |
| 58 | voice quality | 42 | 39 | 0.2730 | 0.1548 |
| 59 | emotional cue | 38 | 38 | 0.3392 | 0.0706 |
| 60 | emotional facial expression | 38 | 37 | -0.1300 | 0.5698 |
| 61 | acoustic cue | 37 | 37 | 0.3280 | 0.0845 |
| 62 | the ear | 37 | 37 | 0.2999 | 0.1155 |
| 63 | social communication | 37 | 37 | 0.1943 | 0.3229 |
| 64 | affect recognition | 59 | 36 | -0.1183 | 0.5686 |
| 65 | basal ganglion | 41 | 36 | -0.2863 | 0.1314 |
| 66 | angular gyrus (AG) | 36 | 36 | -0.2171 | 0.2690 |
| 67 | verbal emotion | 36 | 36 | -0.3380 | 0.0695 |
| 68 | cognitive function | 36 | 36 | -0.1101 | 0.5859 |
| 69 | group difference | 36 | 36 | 0.1991 | 0.3067 |
| 70 | emotion identification | 42 | 35 | 0.0458 | 0.8722 |
| 71 | speech signal | 38 | 35 | -0.1961 | 0.3192 |
| 72 | visual stimulus | 35 | 35 | 0.3634 | 0.0532 |
| 73 | speech perception | 35 | 35 | 0.2584 | 0.1907 |
| 74 | angry prosody | 35 | 35 | 0.5239 | 0.0019 |
| 75 | social function | 35 | 35 | -0.0720 | 0.7189 |
| 76 | prefrontal cortex | 34 | 34 | -0.0031 | 0.9877 |
| 77 | auditory processing | 34 | 34 | 0.3060 | 0.1046 |
| 78 | old adult | 63 | 33 | -0.0293 | 0.8842 |
| 79 | semantic content | 41 | 33 | 0.0833 | 0.6777 |
| 80 | recognition accuracy | 41 | 33 | 0.5087 | 0.0045 |
| 81 | emotional meaning | 34 | 33 | 0.3191 | 0.1696 |
| 82 | anterior cingulate cortex (ACC) | 33 | 33 | -0.0419 | 0.8398 |
| 83 | neutral sentence | 33 | 33 | -0.0379 | 0.8774 |
| 84 | linguistic prosody | 47 | 32 | -0.6588 | 0.0322 |
| 85 | dichotic listening | 41 | 32 | 0.2137 | 0.2748 |
| 86 | emotional voice | 37 | 32 | 0.3137 | 0.0968 |
| 87 | prosodic processing | 33 | 32 | 0.0052 | 0.9867 |
| 88 | recognition deficit | 32 | 32 | -0.0302 | 0.8824 |
| 89 | auditory emotion | 32 | 32 | 0.1795 | 0.3632 |
| 90 | speech processing | 32 | 32 | -0.0559 | 0.7808 |
| 91 | the valence | 32 | 32 | -0.0966 | 0.6264 |
| 92 | brain activity | 38 | 31 | -0.1334 | 0.5024 |
| 93 | human voice | 37 | 31 | 0.1384 | 0.5048 |
| 94 | auditory stimulus | 31 | 31 | -0.2106 | 0.3314 |
| 95 | emotion category | 31 | 31 | -0.2429 | 0.2404 |
| 96 | emotional communication | 31 | 31 | -0.1662 | 0.3979 |
| 97 | mismatch negativity | 31 | 31 | 0.0687 | 0.7295 |
| 98 | executive function | 32 | 30 | 0.0176 | 0.9293 |
| 99 | recognition ability | 30 | 30 | -0.1097 | 0.5814 |
| 100 | emotional prosody processing | 29 | 29 | 0.4898 | 0.0040 |
| 101 | emotional prosody recognition | 28 | 28 | 0.0136 | 0.9458 |
| 102 | cochlear implant (CI) | 27 | 27 | 0.7313 | 0.0000 |
| 103 | facial emotion recognition | 38 | 26 | 0.0551 | 0.7825 |
| 104 | facial affect recognition | 27 | 24 | -0.1104 | 0.5866 |
| 105 | vocal emotion recognition | 27 | 24 | 0.4456 | 0.0155 |
| 106 | superior temporal sulcus | 24 | 24 | 0.3671 | 0.0473 |
| 107 | emotion recognition ability | 24 | 24 | 0.3135 | 0.0941 |
| 108 | emotion recognition deficit | 22 | 22 | 0.1197 | 0.5608 |
| 109 | event-relate brain potential | 21 | 21 | 0.4382 | 0.0133 |
| 110 | dichotic listening task | 20 | 20 | -0.3615 | 0.0489 |