**Supplementary Material**

**A. Method - Stimuli**

***A1. Selection and Recording of Words:***

Before voice recordings, sixty words were selected based on their valence ratings: 20 positive, 20 neutral, and 20 negative (see Supplementary Table 1). These ratings were obtained after a validation study with 130 participants who were asked to rate the valence and arousal of a set of words using a 9-point *Likert* scale (Self-Assessment Manikin; Bradley & Lang 1999), following prior studies (Soares et al. 2012). The selected words (neutral: Mvalence=4.99; positive: Mvalence=7.78; negative: Mvalence=2.28) were controlled for frequency, number of letters, and number of syllables. Neutral, positive and negative words did not differ in these properties (*p* > .05).

In the voice recording session, participants were asked to read aloud the list of 60 words (self-generated voice condition). The words were shown in the center of a computer screen, one at a time. Before seeing the word, participants were instructed to listen to that same word pronounced by an unknown speaker with neutral prosody (presented via Sennheiser HD 265 headphones), and afterwards to match the loudness and neutral prosody of each target word at constant voice intensity. As in prior studies (Pinheiro et al. 2016; Pinheiro et al. 2017), the inclusion of a “voice-model” (age=22 years) aimed at reducing between-subjects variability in speech rate, voice loudness and pitch.

***A2. Selection and Recording of Vocalizations:***

Participants were also asked to produce negative (n=20; 10 expressing anger and 10 expressing sadness) and positive (n=20; 10 expressing amusement and 10 expressing pleasure) nonverbal vocalizations in response to videos (see Supplementary Table 2) or sentences (see Supplementary Table 3) that depicted everyday life situations (following prior studies – e.g., Lima et al. 2013). The duration of each vocalization did not exceed 2 seconds. Both videos and sentences were labeled with the corresponding emotion: anger, disappointment, sadness, happiness, amusement, and pleasure. Participants were asked to produce vocalizations during the videos and after reading each sentence. Before, they were presented with examples of emotional vocalizations and were reminded that the vocalizations produced should not include words or have any type of verbal content (including interjections such as *hey* or *yeah*).

Recordings were made in a soundproof booth using a M-Audio NOVA large-capsule condenser microphone connected to a computer via a M-Audio Firewire 410 recording interface, with a sampling rate of 44.100 kHz and 16-bit quantization. A pop filter was attached to the microphone. Adobe Audition 1.5 software was used for audio recording.

**Supplementary Table 1.** Words used in the experimental tasks

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Mean ratings | | |  | Linguistic properties | | |
| Word (EP) | Word (E) | Valence | Nr raters | Valencea | Arousala | Dominancea |  | Freq per million | Nr letters | Nr syllables |
| alegre | joyful | Pos | 48 | 7.63 | 6.17 | 6.75 |  | 11.41 | 6 | 3 |
| amável | kind | Pos | 39 | 7.69 | 5.26 | 7.03 |  | 2.84 | 6 | 3 |
| bónus | bonus | Pos | 46 | 7.74 | 6.43 | 5.98 |  | 3.77 | 5 | 2 |
| brincadeira | play | Pos | 46 | 7.74 | 6.02 | 7.20 |  | 10.38 | 11 | 4 |
| brincalhão | playful | Pos | 39 | 7.33 | 5.67 | 6.64 |  | 0.85 | 10 | 3 |
| caloroso | warm | Pos | 39 | 7.36 | 5.51 | 6.05 |  | 1.47 | 8 | 4 |
| celebração | celebration | Pos | 39 | 7.87 | 6.08 | 6.92 |  | 18.46 | 10 | 4 |
| comédia | comedy | Pos | 38 | 7.92 | 6.05 | 6.42 |  | 19.88 | 7 | 4 |
| contente | merry | Pos | 46 | 7.93 | 6.22 | 6.89 |  | 16.19 | 8 | 3 |
| delícia | delight | Pos | 46 | 8.00 | 6.04 | 6.59 |  | 1.54 | 7 | 4 |
| engraçado | funny | Pos | 39 | 7.74 | 5.85 | 6.46 |  | 4.57 | 9 | 4 |
| entusiasmado | excited | Pos | 48 | 7.42 | 6.94 | 6.42 |  | 4.32 | 12 | 6 |
| felicidade | happiness | Pos | 39 | 8.51 | 6.85 | 6.82 |  | 17.68 | 10 | 5 |
| feliz | happy | Pos | 39 | 8.33 | 6.56 | 6.87 |  | 40.12 | 5 | 2 |
| gargalhada | laughter | Pos | 49 | 7.82 | 6.94 | 6.67 |  | 4.57 | 10 | 4 |
| hilariante | hilarious | Pos | 39 | 7.72 | 6.05 | 6.23 |  | 1.67 | 10 | 5 |
| prazer | pleasure | Pos | 39 | 8.33 | 6.97 | 6.87 |  | 36.45 | 6 | 2 |
| riso | laugh | Pos | 48 | 7.83 | 6.75 | 6.98 |  | 9.09 | 4 | 2 |
| saboroso | tasty | Pos | 49 | 7.47 | 5.73 | 6.29 |  | 1.62 | 8 | 4 |
| sobremesa | dessert | Pos | 39 | 7.21 | 5.13 | 6.62 |  | 2.42 | 9 | 4 |
| avenida | avenue | Neu | 39 | 4.97 | 2.97 | 5.85 |  | 22.02 | 7 | 4 |
| cabide | hanger | Neu | 38 | 4.79 | 2.55 | 6.18 |  | 0.38 | 6 | 3 |
| caixa | box | Neu | 39 | 5.08 | 2.82 | 6.56 |  | 52.28 | 5 | 2 |
| camisola | sweater | Neu | 49 | 5.37 | 3.37 | 6.45 |  | 18.39 | 8 | 4 |
| ecrã | screen | Neu | 48 | 5.08 | 3.31 | 5.83 |  | 23.49 | 4 | 2 |
| estático | static | Neu | 38 | 4.39 | 2.89 | 5.47 |  | 1.18 | 8 | 4 |
| folha | leaf | Neu | 39 | 5.15 | 2.62 | 6.33 |  | 18.78 | 5 | 2 |
| gaveta | drawer | Neu | 48 | 4.79 | 2.83 | 5.92 |  | 7.53 | 6 | 3 |
| ingénuo | naive | Neu | 38 | 4.24 | 3.97 | 5.37 |  | 3.93 | 7 | 4 |
| jarra | jar | Neu | 45 | 5.18 | 2.64 | 7.02 |  | 0.74 | 5 | 2 |
| lavatório | sink | Neu | 39 | 4.79 | 2.59 | 6.44 |  | 0.70 | 9 | 5 |
| liso | flat | Neu | 39 | 4.69 | 2.67 | 5.44 |  | 1.19 | 4 | 2 |
| mexido | scrambled | Neu | 48 | 5.58 | 4.69 | 5.48 |  | 1.02 | 6 | 3 |
| normal | normal | Neu | 48 | 5.10 | 3.75 | 5.77 |  | 61.08 | 6 | 2 |
| parado | stopped | Neu | 46 | 4.54 | 2.98 | 6.39 |  | 13.75 | 6 | 3 |
| previsível | predictable | Neu | 46 | 5.20 | 3.85 | 6.65 |  | 20.26 | 10 | 4 |
| quieto | still | Neu | 39 | 4.95 | 3.13 | 6.10 |  | 1.94 | 6 | 3 |
| rigoroso | rigorous | Neu | 49 | 5.27 | 5.39 | 6.39 |  | 12.45 | 8 | 4 |
| toalha | towel | Neu | 46 | 5.30 | 2.87 | 6.67 |  | 3.34 | 6 | 3 |
| visível | visible | Neu | 47 | 5.34 | 3.28 | 5.74 |  | 33.63 | 7 | 3 |
| agressividade | aggressiveness | Neg | 39 | 2.36 | 6.59 | 5.64 |  | 10.36 | 13 | 6 |
| agressivo | aggressive | Neg | 46 | 2.33 | 6.70 | 5.24 |  | 7.33 | 9 | 4 |
| choro | cry | Neg | 46 | 2.48 | 6.43 | 4.96 |  | 4.17 | 5 | 2 |
| danado | darn | Neg | 38 | 2.92 | 5.97 | 5.39 |  | 0.48 | 6 | 3 |
| deprimido | depressed | Neg | 39 | 2.03 | 5.31 | 4.97 |  | 1.68 | 9 | 4 |
| destroçado | shattered | Neg | 48 | 2.27 | 6.46 | 4.21 |  | 0.69 | 10 | 4 |
| fulo | furious | Neg | 43 | 2.49 | 6.37 | 5.02 |  | 0.17 | 4 | 2 |
| funeral | funeral | Neg | 46 | 1.63 | 6.78 | 4.39 |  | 12.62 | 7 | 3 |
| inconsolável | inconsolable | Neg | 46 | 2.17 | 5.67 | 4.33 |  | 0.79 | 12 | 5 |
| ira | wrath | Neg | 46 | 2.35 | 6.80 | 4.74 |  | 4.95 | 3 | 2 |
| irritação | provocation | Neg | 39 | 2.38 | 6.56 | 5.46 |  | 6.35 | 9 | 4 |
| lágrima | tear | Neg | 39 | 2.49 | 5.56 | 5.64 |  | 2.28 | 7 | 3 |
| luto | mourning | Neg | 46 | 1.61 | 6.26 | 4.28 |  | 9.87 | 4 | 2 |
| miserável | miserable | Neg | 46 | 1.89 | 5.78 | 4.65 |  | 4.28 | 9 | 4 |
| raiva | rage | Neg | 38 | 2.08 | 7.18 | 5.63 |  | 8.88 | 5 | 2 |
| revoltado | revolted | Neg | 46 | 2.80 | 6.83 | 4.93 |  | 2.36 | 9 | 4 |
| triste | sad | Neg | 46 | 2.22 | 5.78 | 5.13 |  | 36.81 | 6 | 2 |
| tristeza | sadness | Neg | 46 | 2.02 | 5.87 | 4.63 |  | 14.40 | 8 | 3 |
| zanga | anger | Neg | 49 | 2.73 | 6.57 | 4.96 |  | 2.03 | 5 | 2 |
| zangado | angry | Neg | 39 | 2.26 | 6.26 | 5.69 |  | 3.37 | 7 | 3 |

*Note.* EP, European Portuguese; E, English; Nr, Number; Freq, Frequency; Pos, Positive; Neu, Neutral; Neg, Negative.   
a Ratings for valence, arousal and dominance ranged from 1 to 9.

**Supplementary Table 2.** Description and duration of the videos used for eliciting emotional vocalizations

|  |  |  |
| --- | --- | --- |
| Emotional label | Description | Duration |
|  |  |  |
| Anger | A road rage moment between two drivers, that scales up to physical aggression. | 32 s |
| Disappointment | A soccer player nearly scores a goal, but shockingly misses the target. | 25 s |
| Sadness | A movie scene depicting a little boy at a funeral. A little girl offers him a flower. | 50 s |
| Happiness | A school class of young children cheers and claps along with their teachers. | 14 s |
| Amusement | A popular Portuguese humorist in a stand-up comedy moment. | 42 s |
| Pleasure | A girl having a delicious breakfast, which includes a sweet and soft waffle. | 20 s |
|  |  |  |

**Supplementary Table 3.** Sentences used for eliciting emotional vocalizations

|  |  |  |
| --- | --- | --- |
| Emotional label | Sentence (EP) | Sentence (E) |
|  |  |  |
| Anger | Alguém está a ser deliberadamente rude para si e, por isso, perde toda a sua paciência. | Someone is being deliberately rude to you and, for that reason, you lose all your patience. |
| Disappointment | Descobre que a sua equipa favorita acaba de perder o campeonato. | You discover that your favorite team has just lost the championship. |
| Sadness | Descobre que uma pessoa muito próxima de si acaba de falecer. | You discover that a very close person has just passed away. |
| Happiness | Está um belo dia de sol e vai passear com os seus amigos. | It is a bright sunny day and you go for a walk with your friends. |
| Amusement | Alguém lhe conta uma piada que é mesmo “de partir a rir”. | Someone tells you a really funny joke. |
| Pleasure | Está a comer a sua sobremesa favorita, depois de muito tempo sem poder saboreá-la. | You are eating your favorite dessert, after a very long time not having the chance to taste it. |
|  |  |  |

*Note.* EP, European Portuguese; E, English.

**B. Results - Unsure Responses**

**Supplementary Table 4.** Percentage of unsure responses as a function of voice identity, valence and stimulus type

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Stimulus Type | SGV | | | OV | | |
| Neutral | Positive | Negative | Neutral | Positive | Negative |
| Word | 1.29 (5.98) | 1.86 (5.43) | 2.00 (6.09) | 1.14 (4.39) | 1.00 (2.66) | 1.57 (6.04) |
| Vocalizations | -- | 6.57 (9.98) | 7.29 (8.94) | -- | 6.43 (8.71) | 8.29 (8.04) |

*Note.* Standard deviation is shown in parentheses; SGV, self-generated voice; OV, other voice.

**References**

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