Auditory naming

Auditory naming (AN) consisted of five cycles of alternating 30-s activation blocks (AN) and two control blocks of 15-s each, comprising reversed speech (AR) and cross-hair fixation over 5min. Auditory stimulus duration varied between 1.2s and 2.3s for a total of 30 different descriptions. Participants were asked to name aloud objects and animals from their auditory description (e.g. "body part you think with") and responses were 1–3 syllable concrete nouns. The AR condition comprised reversed recordings of the AN stimuli (using the free software tool Audacity®; http://www.audacityteam.org) to assure the same length as well as the same voice characteristics of the stimuli. During AR, participants were instructed to count aloud "one, two" (2 syllables) to match the length of AN responses. During cross-hair fixation, subjects were instructed rest with their eyes open.

Picture naming

Picture naming (PN) involved five cycles of visually presented stimuli, each cycle consisting of alternating 30-s activation blocks (PN), and three control blocks of 15-s each, comprising scrambled pictures (SPc), blurred cartoon faces (F), and crosshair fixation over 6.15min. During the activation phase (PN), participants were instructed to name aloud a total of 45 black and white line drawings of everyday objects and animals (all responses 1–3 syllables). The control condition SPc comprised distorted versions of the black and white drawings. For this, each picture was divided into 20x20 rectangles, which were rearranged in random order using a Matlab® script. Additionally, blurred drawings of black and white cartoon faces (F) were used as a second control condition to overcome a possible lack of object recognition effort that might be associated with scrambled pictures. Subjects were instructed to count aloud "one, two" in response to SPc and F, and to rest with their eyes open during cross-hair fixation.

Task	Stimulus types	Example	Stimulus duration in s	Number of items (n) per block (total n in 5 blocks)	Instruction	Response
Auditory naming						
Target condition	Auditory description	"Body-part you think with…"	4.5	6 (30)	What is this?	Word
Control condition	Reversed speech		4.5	3 (15)	Count: 1, 2	"1, 2"
Rest	None		15	1 (5)	Rest	None
Picture naming						
Target condition	Picture of object		3	9 (45)	What is this?	Word
1st Control condition[3]	Scrambled picture		3	4(20)	Count: 1, 2	"1, 2"
2nd Control condition	Blurred Cartoon face		3	4 (20)	Count: 1, 2	"1, 2"
Rest	Crosshair	+	15	1 (5)	Rest	None