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PROGETTO 1/ PROJECT 1

Supervisore/Supervisor: Nicola Del Maschio

Titolo/Title:

The interaction between language and emotions in decision making: brain mechanisms and psychological correlates

Corso /PhD Course

Scienze Cognitive e Comportamentali/Cognitive and Behavioral Sciences

Curriculum:

Link alla pagina personale OSR/UNISR/ <https://www.unisr.it/docenti/d/delmaschio-nicola>
Link to OSR/UniSR personal page:

Descrizione del progetto/Project description (Tra i 2.000 e 3.000 caratteri spazi inclusi/ Number of characters, including spaces: 2.000 - 3.000):

The interest of cognitive neuroscience in the relationship between language and emotion has steadily increased in recent years (Brooks et al., 2017). In general, findings from psychophysiological, electrophysiological, and functional brain imaging methods indicate an effect of language competence (in different forms and at different levels) on the perception, recognition, and control of emotional stimuli (Lieberman et al., 2011; Lindquist, 2017; Souter, Lindquist, & Jefferies, 2021).

Also in light of physical and virtual communicative contexts increasingly characterized by the coexistence of different languages, a recent strand of research has extended the investigation of the relationship between language and emotions - with special reference to the effect of language competence on emotional processing - to bilingual or multilingual populations


Using various indices (e.g., autonomic arousal, galvanic conductance, event-related potentials), this line of research has shown that a person's foreign language (L2) is generally associated with reduced emotional resonance compared to the native one (L1), especially in sequential bilinguals exposed to L2 in non-immersive contexts (Mavrou, Pérez Serrano, Dewaele, 2022).

A similar 'foreign language effect' on emotional processing has also been observed in the area of decision making, notably in decision-making contexts involving risky choices (e.g., lotteries, moral dilemmas). In such contexts, compared to L1, L2 appears to promote decisions that are more deliberate and thoughtful and less prone to impulsivity and automatism (therefore more 'rational') (Del Maschio et al., 2022)..

As individuals in modern globalized societies are often called upon to make decisions in their L2, the implications of this 'foreign language effect' for socioeconomic and public health policies are potentially relevant (see Costa, Vives & Corey, 2017).

Nevertheless, the brain structures and circuits involved in decision-making in contexts characterized by emotional valence and physiological activation in L1 vs. L2 are largely unknown.

The present research project aims to investigate by means of functional imaging and behavioral indices the neural and psychological correlates of the 'foreign language effect' on emotional processing in bilingual subjects engaged in decision-making tasks under risky conditions.

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Competenze che deve acquisire lo studente/Skills to be acquired by the student (Max 600 caratteri spazi inclusi/ *Number of characters, including spaces: max 600*):

Acquisition and analysis of behavioral data
 Acquisition and analysis of fMRI data
 Scientific writing
 Autonomy and integrity in scientific research (responsible data collection, management, sharing, communication and reporting, open science policies).

Bibliografia/References (max. 15)

Brooks, J. A., Shablack, H., Gendron, M., Satpute, A. B., Parrish, M. H., & Lindquist, K. A. (2017). The role of language in the experience and perception of emotion: A neuroimaging meta-analysis. *Social Cognitive and Affective Neuroscience*, 12(2), 169-183.

Costa, A., Vives, M. L., & Corey, J. D. (2017). On language processing shaping decision making. *Current Directions in Psychological Science*, 26(2), 146-151.

Del Maschio, N., Crespi, F., Peressotti, F., Abutalebi, J., & Sulpizio, S. (2022). Decision-making depends on language: A meta-analysis of the Foreign Language Effect. *Bilingualism: Language and Cognition*, 25(4), 617-630.

Lieberman, M. D., Inagaki, T. K., Tabibnia, G., & Crockett, M. J. (2011). Subjective responses to emotional stimuli during labeling, reappraisal, and distraction. *Emotion*, 11(3), 468.

Lindquist, K. A. (2017). The role of language in emotion: existing evidence and future directions. *Current opinion in psychology*, 17, 135-139.

Mavrou, I., Pérez Serrano, M. & Dewaele, J.-M. (Eds.) (2022). *Recent advances in second language emotion research*. Aranzadi, Thomson Reuters.

Souter, N. E., Lindquist, K. A., & Jefferies, E. (2021). Impaired emotion perception and categorization in semantic aphasia. *Neuropsychologia*, 162, 108052.