A 78-year-old woman with hypertension, diabetes mellitus type 2 and bilateral sensorineural hearing loss was referenced to geriatric psychiatry consultation. She presented cognitive dysfunction, erotomanic delusion and complex musical hallucinations (MH), described as hearing her neighbour singing a familiar church song along with bells in the background, making comments and talking to her. A computed tomography (CT) of the brain detected small right nucleocapsular and bilateral external capsules hypodensities of presumed vascular aetiology during hospitalisation. MH are a rare phenomenon with heterogeneous aetiology. Most frequently, the cause is hearing impairment; other causes include social isolation, cognitive dysfunction, vascular risk factors and medication. Studies suggest that some brain areas related to musical memory circuitry might be related and not fully mapped. Auditory verbal hallucinations with a voice that either comments, talks or sings to the patient have never been described in the literature, making this clinical case attractive.
Does music affect citizens' evaluations of candidates?

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While some candidates use music in some of their campaign ads to shape individuals' perceptions of their competence or compassion, for example, it is unclear whether the relationship between music and trait perceptions is empirically valid. Considering the importance of knowing where trait perceptions—which represent important determinants of the vote—come from and the extent to which it is possible to manipulate trait perceptions by means of music, this study investigates the effect of music on trait perceptions using data from an online survey experiment conducted between October 30 and November 12, 2020. In this experiment, 362 individuals were exposed to a random sequence of five campaign ads, either with their original music or with no music. Following each campaign ad, individuals were asked to evaluate the candidate's competency, honesty, leadership, and compassion. The analyses reveal that music marginally affects perceptions of competency, honesty, and leadership. Moreover, music exerts no significant effect on perceptions of compassion.

Mentre alcuni candidati usano la musica in alcuni degli annunci della loro campagna per modellare le percezioni individuali, ad esempio, della loro competenza o compassione, non è chiaro se la relazione tra la musica e le percezioni dei tratti sia empiricamente valida. Considerando l'importanza di sapere da dove provengono le percezioni dei tratti, che rappresentano importanti determinanti del voto, e la misura in cui è possibile manipolare le percezioni dei tratti per mezzo della musica, questo studio indaga l'effetto della musica sulle percezioni dei tratti utilizzando i dati di un esperimento di sondaggio online condotto tra il 30 ottobre e il 12 novembre 2020. In questo esperimento, 362 persone sono state esposte a una sequenza casuale di cinque annunci della campagna, con o senza musica originale. Dopo ogni annuncio della campagna, alle persone è stato chiesto di valutare la competenza, l'onestà, la leadership e la compassione del candidato. Le analisi rivelano che la musica influenza marginalmente sulla percezione di competenza, onestà e leadership. Inoltre, la musica non esercita alcun effetto significativo sulla percezione della compassione.

What if sharing music as a language is the key to meeting halfway?
Absolute pitch, pitch discrimination and Autism Spectrum Disorder

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Absolute pitch is the ability to identify a given note in the absence of a reference note. The prevalence of absolute pitch in autism is between 5% and 11% and autism involves notably enhanced abilities in pitch discrimination. The goal of this study was to summarize the evidence about the role and the meaning of these special skills in autism. Systematic electronic database searches were conducted using Pubmed, Scopus, Psycinfo, and Web of Science. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRI-SMA) guideline was followed, and, after thorough screening by two independent reviewers, 17 articles remained eligible for inclusion in this study. We have two different groups of results. Eight case-control studies discuss pitch discrimination and autism. The second group included four case reports about autistic individuals with absolute pitch and five case-control studies. These results strongly suggest that music elicits special attention for children with autism, and taken together, this evidence supports a major frequency of AP in autistic children. Based on this evidence, future perspectives could include studies aiming to detect absolute pitch at an early age and to use this special skill to stimulate joint attention, as well as socio-communicative skills.
Rapid encoding of musical tones discovered in whole-brain connectivity

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Information encoding has received a wide neuroscientific attention, but the underlying rapid spatiotemporal brain dynamics remain largely unknown. Here, we investigated the rapid brain mechanisms for encoding of sounds forming a complex temporal sequence. Specifically, we used magnetoencephalography (MEG) to record the brain activity of 68 participants while they listened to a highly structured musical prelude. Functional connectivity analyses performed using phase synchronisation and graph theoretical measures showed a large network of brain areas recruited during encoding of sounds, comprising primary and secondary auditory cortices, frontal operculum, insula, hippocampus and basal ganglia. Moreover, our results highlighted the rapid transition of brain activity from primary auditory cortex to higher order association areas including insula and superior temporal pole within a whole-brain network, occurring during the first 220 ms of the encoding process. Further, we discovered that individual differences along cognitive abilities and musicianship modulated the degree centrality of the brain areas implicated in the encoding process. Indeed, participants with higher musical expertise presented a stronger centrality of superior temporal gyrus and insula, while individuals with high working memory abilities showed a stronger centrality of frontal operculum. In conclusion, our study revealed the rapid unfolding of brain network dynamics responsible for the encoding of sounds and their relationship with individual differences, showing a complex picture which extends beyond the well-known involvement of auditory areas. Indeed, our results expanded our understanding of the general mechanisms underlying auditory pattern encoding in the human brain.
complessa. Nello specifico, hanno utilizzato la magnetoencefalografia (MEG) per registrare l'attività cerebrale di 68 partecipanti mentre ascoltavano un preludio musicale altamente strutturato. Le analisi della connettività funzionale eseguite utilizzando la sincronizzazione di fase e le misure teoriche dei grafi hanno mostrato un'ampia rete di aree cerebrali reclutate durante la codifica dei suoni, che comprende le cortecce uditive primarie e secondarie, l'opercolo frontale, l'insula, l'ippocampo e i gangli della base. Inoltre, i risultati degli Autori hanno evidenziato la rapida transizione dell'attività cerebrale dalla cortecchia uditiva primaria alle aree di associazione di ordine superiore, tra cui l'insula e il polo temporale superiore all'interno di una rete dell'intelletto, che si verifica durante i primi 220 ms del processo di codifica. Gli Autori hanno anche scoperto che le differenze individuali nelle abilità cognitive e nella musicalità modulavano il grado di centralità delle aree cerebrali implicate nel processo di codifica. Infatti, i partecipanti con maggiore esperienza musicale hanno presentato una maggiore centralità del giro temporale superiore e dell'insula, mentre gli individui con elevate capacità di memoria di lavoro hanno mostrato una maggiore centralità dell'opercolo frontale. In conclusione, questo studio ha rivelato il rapido dispiegarsi delle dinamiche della rete cerebrale responsabile della codifica dei suoni e la loro relazione con le differenze individuali, mostrando un quadro complesso che si estende oltre il ben noto coinvolgimento delle aree uditive. In effetti, i risultati degli Autori hanno ampliato la nostra comprensione dei meccanismi generali alla base della codifica del pattern uditivo nel cervello umano.

The Pierfranco and Luisa Mariani Foundation
Since its beginnings in 1985, the Mariani Foundation has established itself as a leading organization in the field of paediatric neurology by organizing a variety of advanced courses, providing research grants, and supporting specialized care. The Foundation works in close cooperation with major public healthcare institutions, complementing their scientific programs and other activities. In 2009 it became the first private entity in Italy to join the founding members of the National Neurologic Institute “Carlo Besta” in Milan. In addition to its services, the Foundation aims, through its continuing medical education courses and publications, to spread knowledge in the field of paediatric neurology in order to help treat or alleviate a large number of paediatric neurologic disorders.

In the year 2000, the Mariani Foundation has added a new and important dimension to its activities: fostering the study of the multiple links between the neurosciences and music, including music education and early intervention. This significant commitment has inspired the series of “Neurosciences and Music” conferences, held in Venice (2002), Leipzig (2005), Montreal (2008), Edinburgh (2011), Dijon (2014), Boston (2017), and Aarhus (2021). All these meetings have led to the publication of major volumes in the Annals of the New York Academy of Sciences.

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