LETTERS TO THE EDITOR

A case of music imperception

Defective perception of music due to an altered capacity to discriminate the elementary components of musical stimuli (rhythm, pitch, timbre, intensity and duration) produces an alteration in the aesthetic enjoyment of and the emotional involvement in music.[1] To our knowledge, there is no previous evidence of the existence of a condition in which the primary disruption is to the capacity to process the musical stimulus as a whole. We report a case of a young musician who, as a result of a right temporo-parietal lesion, presented with loss of the gestalt capacity to process music, with the consequent loss of aesthetic pleasure.

Our patient was a 24 year old male, who was an amateur musician and a skilful guitar player. He reported an early interest in music: during primary school he played keyboard instruments and during secondary school, the flute. He later started playing the guitar, attending private lessons for two years.

On 31 December 1987, after a muscular strain (jumping over a gate), he noticed he had difficulty in understanding "the nuances of words and inflection of sentences". The same day he realised that he had difficulties in understanding music: he could not perceive the structure of musical pieces clearly; the relationship between the accompaniment and the soloist was indiscernable, and aesthetic pleasure for the musical world had completely vanished. At the same time he complained of generalised headache, described as pressure, mostly on the right side.

On 5 January 1988, he came under our observation. He still complained of a receptive musical impairment, although less severe than at onset, while his previous prosodic difficulties and headache had disappeared. Neurological examination, tonal audiometry and standard neuropsychological examination were normal. In particular, he showed no language impairment; oral and written comprehension of complex passages was good. He was able to recognise simple and complex figures and recognise faces, both familiar and unknown, on comparison tasks. On a meaningful sound recognition test, he recognised animal, human and environmental sounds and voices, effortlessly. The patient was ambidextrous; there was no family history of left handedness.

Examination of musical abilities (recognition and production of physical features of musical sounds, plus identification and/or reproduction of rhythm, melody and harmony; vocal and instrumental performance, and listening to musical compositions) were normal. However, he complained of difficulties from the very beginning for the listening task. On hearing the pieces played on the piano, he complained, "my perception is changed... it's flat, it's no longer 3-dimensional; it's only on two planes... there's no emotion...". His difficulties increased as the presented compositions became more complex: "... this is even worse: I can distinguish the different instruments, but I can't perceive the whole... in jazz pieces, the relationships between the accompaniment and the soloist escape me."

An EEG showed slight right temporal abnormalities. A CT scan was scheduled, but the patient did not keep the appointment.

On 31 April 1988 he had a generalised tonic-clonic seizure: a CT scan (figure, left) and MRI (figure, right) showed the presence of a right temporo-parietal malacic area, involving the plica curva and supramarginal gyrus. This area was post-haemorrhagic, with peripheral haemosiderin deposits, and was surrounded by serpiginous hypointense images. A DSA showed an arterio-venous malformation (AVM), fed by right sylvian branches.

On 16 June 1990, he developed left hemianopia and headache due to a haemorrhage involving the right temporo-parietal region. A month later, the AVM was surgically removed. Since that time, the patient has experienced normal health.

The correct characterisation of this patient's disturbances poses considerable difficulties. It is neither auditory agnosia nor word deafness, given his correct performance on neuropsychological tests. The complexity of his deficits, on the other hand, rule out their being due to "paracousia", that is, simple distortion in the perception of sound.

This impairment could instead be classified as a type of receptive amusia, which can manifest itself not only as the incapacity to discriminate between melodic patterns, timbre and pitch, but also as qualitative alterations of the acoustic experience, including an emotional involvement in the music.[1] The patient may have lost the ability to convert musical perception into something emotionally or intellectually meaningful (the third fundamental ability of musical function[2]). Disturbances of this type are, unfortunately, difficult to view objectively because of their highly subjective nature. These deficits are perhaps undervalued and overlooked, and as a result, there are only two cases in which the loss of aesthetic enjoyment in listening to music[3] or problems in "conceiving of a whole piece" and "conjuring up the appropriate atmosphere for composition"[4] are mentioned in the literature.

Even though much of our case is based on the patient's subjective reports, it seems convincing for the selectivity of the disturbance (altered perception of the whole and of the emotional component of music, without compromise to analytical perception) and for the strict focal nature of the lesion (AVM involving the right plica curva and the supramarginal gyrus). This supports the hypothesis that the right hemisphere, or at least some of its supramodal areas, is better than the left hemisphere[5] at performing the process of appreciation of the entire sound.

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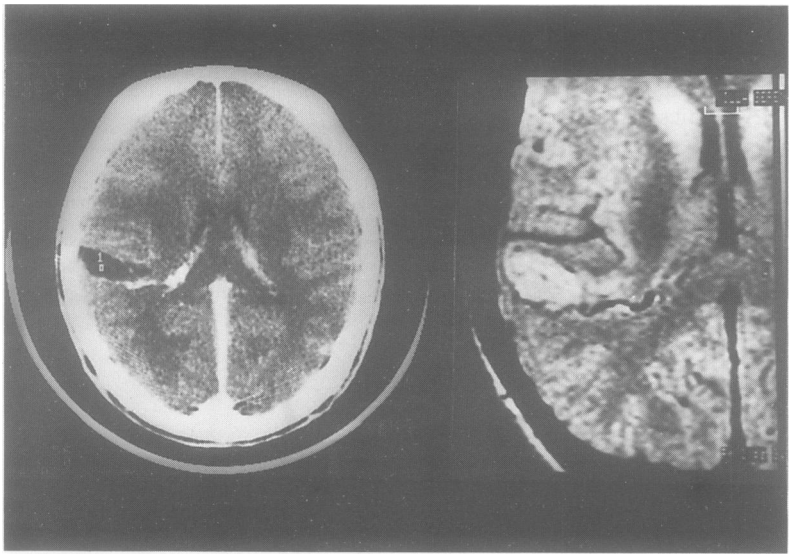

Figure Left: CT scan (2 May 1988) showing a ribbon-shaped malacic area in the right temporo-parietal region, the posterior part of which has absorbed contrast agent Right: MRI (5 May 1988) showing the malacic area involving the plica curva and the supramarginal gyrus.

1 Benton AL. Le amusie. In: Critchley M, Henson RA, eds. *La Musica e il Cervello*. Padova: Piccin, 1987:397–417.
2 Wertheim N. Esiste una localizzazione anatomica per le facolta' musicali? In Critchley M, Henson RA, eds. *La musica e il cervello*. Padova: Piccin, 1987:294–310.
3 Mazzucchi A, Marchini C, Budai R, Parma M. A case of receptive amusia with prominent timbre perception defect. *Journal Neurol, Neurosurg Psychiatry* 1982;45:644–7.
4 Judd T, *et al.* (unpublished research) quoted by Kaplan JA, Gardner H. Artistry after unilateral brain disease. In: Boller F, Grafman J, eds. *Handbook of neuropsychology*. Amsterdam: Elsevier, 1989:147.
5 Gates A, Bradshaw JL. Music perception and cerebral asymmetries. *Cortex* 1977;13: 390–401.

Frégoli delusion and erotomania

The Frégoli delusion involves the belief that a familiar person disguises himself or herself as others. It was named after an Italian