

# Dmitri Shostakovich: a work of virtuosity or a profitable misfortune?

Dmitri Shostakovich: ¿virtuosismo o infortunio provechoso?

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## ABSTRACT

Dmitri Shostakovich was one of the greatest composers of 20th century, famous for his piano and violin compositions. One of the compositions, the 5th symphony, is arguably his greatest work, which brought him back to the grace of the Soviet authorities in a moment of a political crisis in Russia. Among the experts, there is a theory which supports that Shostakovich's talent was due to a traumatic brain injury involving a shrapnel. Moreover, he might have suffered from a neurodegenerative process throughout his life. In this paper, we intend to discuss these viewpoints.

**Keywords:** Neurology; Neurosurgery; Hallucinations; Brain Injuries, Traumatic; History; Music.

## RESUMEN

Dmitri Shostakovich fue uno de los más renombrados compositores del siglo XX, famoso por sus obras para violín y piano. Su Quinta Sinfonía, es para muchos su obra más importante. Esta pieza le trajo gran simpatía con las autoridades militares en un momento de crisis en la Unión Soviética. Entre opiniones de expertos, existe una teoría que postula que el talento de Shostakovich es secundario a un trauma craneoencefálico producido por herida de metralla. También se cree que pudo haber sufrido de un proceso neurodegenerativo. Nuestra intención en el presente artículo es discutir estos puntos de vista.

**Palabras clave:** Neurología; Neurocirugía; Alucinaciones; Lesiones Traumáticas del Encéfalo; Historia; Música.

## AN EMERGING RUSSIAN TALENT

Born in Saint Petersburg in 1906, Dmitri Shostakovich was a renowned Soviet composer. From an early age he was exposed to a musically nurturing environment, mostly due to the influence of his pianist mother. His remarkable talent and instrumental ability granted him entry into the local conservatory at the age 13; under the tutelage of Glazunov and Steinberg, Shostakovich built a musical and personal character that would soon become his signature<sup>1</sup>. His First Symphony, which premiered shortly after the completion of his musical training, granted him the reputation of a bold and

inventive musician. Shostakovich became an icon among other rising Russian musicians<sup>1</sup>.

Dmitri Shostakovich was a revolutionary for his time: early on he departed from his fellow musicians and created a style of his own. His innovative compositions, markedly different from the ones of his chronological peers, represented the synthesis of elements from different musical periods, including influences from both Romantic and Impressionist periods as well as the traditional Russian school<sup>2</sup>.

It is important to consider Shostakovich's social and political context, and its influence on his work. In 1936 Shostakovich premiered his opera "Lady Macbeth of

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Mzensk” in Moscow. Joseph Stalin was in the theater on the opening night. After only a few bars of music, Stalin furiously stormed out. He condemned the opera in an article published in *Pravda*, an official journal; and released an outline of requirements for public entertainment. After that, Shostakovich composed restricted by fear of censorship or imprisonment. All of these transgressions and the opposition against Stalin’s politics rendered him to be known as a “watered-down Prokofiev”<sup>3</sup>.

## A TRAUMATIC EXPLANATION FOR HIS BRILLIANCE

It could be accepted that Shostakovich’s musical brilliance is explained in part by his full commitment to studying and composing. However, curiosity spiked in the minds of some researchers and historians since some pieces of evidence pointed out to an incident that may have impacted Shostakovich’s performance in music.

In 1941, Shostakovich was volunteering in Leningrad’s fire brigades. Apparently, during this time he experienced a head injury. An x-ray showed that Dmitri had a metallic fragment lodged near the temporal horn of the left lateral ventricle. He refused to have it surgically removed alleging that it “filled his head with melodies”. Some authors believe that this may have caused auditory and synesthetic hallucinations, epilepsy, and cognitive impairment; although this last affliction has been proposed as a consequence of his depression, mainly caused by the Soviet regime’s oppression, as the composer was mainly described as “sluggish” or “lethargic” while his wit and judgment never declined<sup>1</sup>. In his book entitled *“The Man Who Mistook His Wife for a Hat”*, the neurologist and writer Oliver Sacks presented Shostakovich’s case and suggested that he might have had musical hallucinations due to focal seizures provoked by gliosis. He presented several other cases of auditory hallucinations and explained how organic lesions could be the cause of unusual, behavioral, and cognitive symptoms<sup>4</sup>.

In 1983, Dr. Dajue Wang, a Chinese neurosurgeon, published an article in *The Musical Times*, a renowned British music journal. Dr. Wang described how, when shadowing an important Soviet neurosurgeon throughout his training, he encountered the case of Shostakovich himself. The composer presented to his consult, expressing concern on the fact that after an incident with a shell explosion in a street close to his residence, he sustained a head injury and a piece of shrapnel ended up lodged within his skull. Shostakovich claimed that after a particular tilting of his head, he would start to hear melodies that later on he would transform into compositions<sup>5</sup>. In addition, Dr. Wang reports that the lead physician-in-charge of Shostakovich’s case, found the object in a head X-ray performed upon his arrival, and even witnessed — through fluoroscopic imaging — the foreign body moving in the composer’s temporal horn of his left lateral ventricle<sup>5</sup>.

An article regarding Shostakovich’s case, written by Donal Henahan and published in *The New York Times* in 1983, further supports the thesis stated by Dr. Wang<sup>6</sup>.

Shostakovich may have had other physical conditions in addition to the ones allegedly caused by the shrapnel. Some doctors reported that Dmitri might have had a motor neuropathy, or even amyotrophic lateral sclerosis (ALS). For over 15 years, the composer had several neurological symptoms, including weakness of the limbs, numbness and paresthesias<sup>7</sup>. Several letters written by Shostakovich, addressed to his sister Nina and some close friends, account for his deteriorating medical condition, as can be read below:

*“My right hand became very weak. I often have pins and needles. I cannot lift heavy things. I find it difficult to brush my teeth...”; “...When I write my hand gets tired. I can only play slowly and pianissimo”<sup>8</sup>.*

## DISCUSSION

Musical hallucinations are the perception of melodies, harmonies, and rhythms in the absence of any actual sound. Frequent causes include psychiatric disorders, dementia, brain tumors, neurosyphilis, substance abuse, and epilepsy<sup>9</sup>. Moreover, auditory hallucinations are a sign of contralateral hemispheric damage<sup>10,11</sup>. Penfield and Perot, for instance, electrically stimulated the right temporal cortex of patients, inducing contralateral musical hallucinations<sup>12</sup>.

Paradoxical functional facilitation (PFF) is the development of a particular skill following neurological injury. There are two types of PFF. The first one, in which the subject has an abnormal functional level for a specific task, and after the injury, that functional status returns to normal or near-normal performance. The second form, in which damage to a neural circuit grants the subject a superior performance in specific tasks compared to healthy subjects<sup>13</sup>. PFF has been described in language functioning, attention-related tasks, memory processes, and sensory and perceptual functions<sup>13</sup>.

Following brain injury, new connections appear in the unaffected areas of the brain<sup>13</sup>. This adaptive response provides rewiring and cortical reorganization in the areas closest to the lesion<sup>14</sup>. Mapping studies in non-human primates, done through functional MRI (fMRI) and direct visualization using marking agents, have shown that originally injured cortical areas, particularly in somatosensory and motor regions, undergo neuroplastic processes that encompass regain of function and even PFF<sup>15</sup>. Since the shrapnel that Shostakovich apparently had was located near the temporal horn of his left lateral ventricle, the primary auditory cortex (Brodmann areas 41 and 42) might have developed new brain connections and undergone cortical reorganization through neural plasticity mechanisms.

In addition, Shostakovich's case is not the first one to present a foreign body embedded adjacent to the ventricular system. In fact, more than six cases had been published prior to the composer's incident, all of which presented with a variety of symptoms, ranging from focal neurological deficits, cognitive impairment, and psychiatric disturbances. Furlow et al, for instance, presented a case with metabolic alterations in which the foreign body was in close relation to the *sella turcica*<sup>16,17,18,19,20,21</sup>.

Shostakovich had his accident when he was 35 years old; nonetheless, he started to compose in 1925, at the age 19. It is possible that he changed his way to compose after his brain injury, which can be explained by the physiological reasons mentioned above. On the other hand, Shostakovich may also have suffered from a neurodegenerative disease, such as ALS. However, patients with this condition have rapid and disabling progress, as opposed to Shostakovich, who

complained of symptoms for decades. In any case, we do not believe that this could have influenced Shostakovich's career as ALS symptoms usually do not include cognitive impairment<sup>22</sup>. Could Shostakovich's talent have been even greater, had he not suffered from this ailment?

Throughout his life, Shostakovich experienced several medical, social, and political circumstances that may have had an impact in his work. Perhaps he had musical hallucinations due to a shrapnel injury close to his primary auditory cortex. Also, he could have even drawn inspiration from his struggles with censorship. Nevertheless, Shostakovich remains as one of the greatest composers of the 20th century. His original and enigmatic style for composing, as well as his role in the post-revolution Russian music make him well known in the conservatoires around the world and among non-musicians. His Waltz No. 2, for instance, has been widely used in many TV shows and films.

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