

The Spanish Composer Manuel de Falla and His Eyes: The Musical Brain

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ABSTRACT: Manuel de Falla was a Spanish musician of the XIXth and XXth centuries who had international recognition likely due to his musical fusion talent. His knowledge about Spanish musical traditions gave to his early compositions a new and fresh intellectual interpretation for the typical Spanish folk music. However, in the middle of his musical career, he suffered a strange disease of his eyes named recurrent acute iridocyclitis. This eye flushing is caused by an inflammation of 2 structures of the anterior pole of the ocular globe, the iris, and the ciliary body. It is usually a symptom of another disease and it causes many psychological impairments and disabilities (severe eye pain in bright light, blurry vision, headache, stress for organization (orderliness), and depression in some cases). This soreness of his eyes had an effect over Falla's compositions and marked an inflection point in his line of musical creations. Eyes in music have been so relevant in another composers and musicians throughout history.

KEYWORDS: Music, Spanish composer, iridocyclitis, uveitis, correspondence, manuscripts, handwritten, visual brain, musical brain, uncinate fascicle, letters, Manuel de Falla

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Introduction

In Middle Ages, the music was considered a Science, together with Astronomy, Rhetoric and Mathematics. Many useful instruments were made later on according to those Sciences: metronome, thermometer, barometer, telescope, microscope.¹ Music is a complex ability, which involves learning, attentional and motor areas of the brain and which reveals the mind and particular interpretative and compositional characteristic of the musicians.

Originally, the word music derives from Greek *mousiké* [téchnē] that means the “technique of Muses.” In its expression it combines harmony, melody, rhythm, pitch, meter, timbre, etc, to create psychoanemic states with hormones, steroids, and other metabolic endogen compounds contributing to those psychological effects.² And, in its compositive and interpretative dimension, music also has many complexities and intricate brain mechanisms which are still unknown in their whole complexity.

Music requires the attentional system, such as the frontal lobes and the anterior cingulate, which are not fully developed in a child. It is probed with experiments that newborns like and prefer the music he/she have listened in the womb. “We can say is that musical preferences are influenced, but not determined, by what we hear in the womb.”³ There is a *fasciculus* of fibers in the brain named uncinate fascicle, which connects the temporal lobe with the prefrontal cortex (Figure 1). It is very related to music perception and perhaps musical hallucinations.⁴

Visual hallucinations also occur with Charles Bonnet Syndrome. It has been suggested in these patients hallucinations might be happening secondary to the altered activation

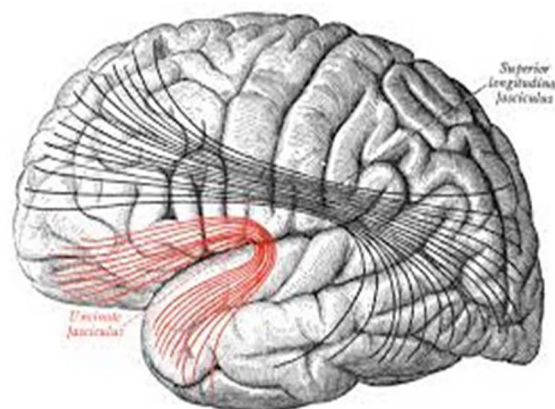


Figure 1. Schematic representation of the human brain connectivity for musical perception. The uncinate fascicle is drawn with red lines, which plugs in the anterior (prefrontal) and temporal cortices.

and release of the visual association cortex. Physical damages on eyes or the lost of certain corticocortical inputs might cause a malfunction of some serotonergic processes in the visual system which originates conscious and clear visual hallucinations.⁵

Daniel Levitin wrote: “If a child doesn’t learn language by the age of six or so (whether a first or a second language) the child will never learn to speak with the effortlessness that characterize most native speakers of a language. Music and mathematics have an extended window, but not unlimited one.”³

Special Brains in Music

Throughout the history of music, several relevant, and transcendent musicians had bizarre behaviors, strange habits, or



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complaints about dizziness, specific phobias, or eye troubles (for instance, Beethoven, Schumann, Bach, Ravel, and Falla).

Music comes into the brain from the inner ear, arriving first at the primary auditory cortex, the first place at which the information is processed, then consciousness of sounds happens. The primary auditory cortex corresponds to transverse temporal gyri (TTG), also known as Heschl's gyri, is normally hidden in the depths of the lateral sulcus, which lies between the temporal lobe and the parietal lobe. The area behind it is the planum temporal (PT), locus on the upper surface of the temporal lobe and running to the end of the lateral sulcus. This is part of Wernicke's area which is also important for language. Both parts of the brain auditory cortex, TTG, and PT, process information concerning sounds, music, and language. The planum polare (PP), in the anterior part of the superior temporal gyrus, is involved more specifically with processing music than with language.⁶

In some cases, vision, music, and reasoning are intertwined in the minds and patterns of thinking: some individuals hear what they see in synesthesias, which are particular and consistent manners of perceiving the music involving various senses and based on the intrinsic neuronal networks, that is, an idiosyncratic patterns of each brain in hyper-connectivity.⁷ For instance, they can see colors while listening to music. They have always perceived the world this way, so synesthetes assume, until they realized that, on the contrary, they do experience the external stimuli as everyone else does.^{8,9}

While this particular mixed and high level specific perception occurs, synesthetes show an electromagnetic activation in the prefrontal and temporal cortex, while their music surfaces are both connected via the uncinate fascicle (Figure 1), but no activation was found in primary visual areas V1, V2, or V4, implying that high level associative visual areas can contribute to conscious visual perception.¹⁰ However, with low-resolution brain electromagnetic tomography, the posterior inferior temporal regions of visual areas (V4) and orbitofrontal regions were stronger activated in synesthetes while synesthesia occurred in fast and automatic response.¹¹

Some great pieces of music have been composed by musicians while they were suffering from some illnesses that might have had an effect over their brains while their music surfaced, such as the Bolero of Ravel or the Requiem of Mozart.

Levitin wrote that Maurice Ravel had a damage in his left cortex which impaired his ability to hear pitch sequences in time and melodic space. "*When portions of his left cortex deteriorated, the composer Ravel selectively lost his sense of pitch while retaining his sense of timbre, a deficit that inspired his Bolero. . .*"³ The Bolero was composed before the onset of any symptoms.¹² Maurice Ravel was small in stature with a large head, the same as Manuel de Falla, and he suffered from a medical condition which was deteriorating his health progressively (aphasia, apraxia, agraphia, amusia, slowing of memory, and mental processes). Other physicians sustained Maurice Ravel was affected not by a pure amusia,

but by a perceptive amusia.¹³ Being a brilliant musician, he was noticeable intelligent, ironic, shy, and had obsessive personality traits.¹² His autopsy via craniotomy revealed a restricted form of cerebral atrophy with bilateral ventricular enlargement secondary to cerebral degeneration.¹⁴ The taxi accident he suffered on October 9, 1932, and which was explained to Manuel de Falla in a letter, might have had an effect over his degeneration, provoked a left hemispheric chronic subdural hematoma which caused increased intraventricular pressure.¹³ Maurice Ravel knew about his own degeneration and he admitted the impact of the disease on his creativity. In July 1937 he said: "*I still have so much music in my head. I've said nothing. I still have so much to say.*"^{13,15} His musical perception was preserved but his musical expression disturbed. His musical thinking was better than his musical language, which is why it was suggested "*to conceive is nothing, to express is all.*"¹³ Ravel claimed ". . . *I have noted a melody in my head, I can perhaps still write music.*"¹²

Wolfgang Amadeus Mozart is another enigmatic case of music emerging from pain. His musical setting of the Requiem in D minor, based on the funeral Catholic liturgy, is indeed such a moving and incredible deep mature work of art that one might have difficulty believing it was created by an only 35-years-old person. Medical research has proved Mozart might have had a medical condition named anosognosia¹⁶ or perhaps "neglect" as denial of his own bad physical health.

Robert Schumann suffered from bipolar disorder with manic and depressive periods from the age of 18 to 38. From year 1848, his mental health went into decline. In year 1854 Schumann reached a dramatic mental health crisis and he attempted suicide. He also had auditory hallucinations and delusions.¹⁷ During his compositional years, the higher amount of music creation happened on his top hypomanic phases and during his severe depressive times he barely composed any piece of music.⁶ His autopsy revealed brain atrophy and thickening of the meninges, which were adhered to the cortex, but not in a significant manner. None of these symptoms were elucidated as a cause of his psychoaffective disorder or as a consequence for the heavy medication.¹⁷

The great Dutch composer Jan Pieters Sweelinck, considered as the forerunner or precursor for Johann Sebastian Bach and Haendel, was an example on how music in the Netherlands was on high top during the end of Renaissance and beginning of the Baroque eras, years of such important and relevant changes for musical concepts.¹ A new technique for music called *basso ostinato* was present in Europe from the Middle Ages onwards and implemented during the XVIII century: it consists on a main voice, theme or motive, frequently in the same pitch, which is repeated and repeated over and over again stubbornly, with slight changes or variations in timbre or in crescendo intensity. A repetitive rhythmic-harmonic schemes the same that was used by Maurice Ravel for his Bolero.

Simeon Ten Holt, another great Dutch composer, made and wrote his Canto Ostinato, using consonant and tonal materials for 1 or several pianos. He also repeated the main theme, as the *basso ostinato*, to be interpreted in a style close to *ad libitum*. The interpreters make their performance almost in a *sui generis* style following the written music sheet by Ten Holt.

Even the body movements, made with wrist, torso, and head, made by performers while are interpreting music, contribute to the expressivity of the performance as judged by the audience. These movements, coordinated by the motor brain cortex, use to be systematic and related to structural features of the music.¹⁸ All senses, the whole brain and perhaps every human organs might be implied in magnifying the perception of music and the ability to express it.

Eyes in the Music

When eyes vision, music, and reasoning are intertwined in the minds, synesthesia happens. Structural brain lesions can cause musical hallucinations in the absence of auditory stimuli.¹⁹ It has been proved with brain imaging techniques that a hyper-metabolism occurs in frontal and temporal lobes, not the visual areas, which are connected through the uncinate fascicle, when musical hallucination are present.⁴ Some patients with musical hallucinations have showed temporal lobe abnormalities, which might have an effect on epilepsy.²⁰

Oliver Sacks wrote in his book *Musicophilia*⁹ about this phenomenon: [*A thirty three years old man also experienced musical hallucinations only when recumbent: "Just the movement of lying down on my bed would trigger them, and in a fraction of a second the music appear. . . . But if I try to stand up or even sit up, or even rise my head slightly, the music would disappear"*].

When people hear music "inside their heads" and independently of light, the pupils dilate, and constrict in response to internal noradrenergic activity due to the relationship between the pupil size and the locus coeruleus—norepinephrinergic system. In natural conditions, pupil size is a good measurement to infer an individual's state of attention and mental effort.²¹

Beethoven was suffering from painful eyes because of his hypovitaminosis A due to his chronic pancreatitis.²² How this pain might have had an effect over his compositions is something we will not know. Beethoven's hair could prove he was exposed to lead his last 110 days of life, which might have contributed to the hepatic decompensation.²³

Johann Sebastian Bach had a decline in his vision at the age of 64, most likely as a result of poor illumination which overstressed his vision. He had an insanitary eye surgery which caused him a lot of pain, total blindness, and the inability to play instruments or to compose. After a few months of his eyes insalubrious intervention he passed away and his legacy was not properly cared: some of his hand written music sheets were found in a pile to be used as wrap-up paper by a butcher, no mattered the ink toxicity. The lethal postoperative result might be due most probably because of asepsis or disinfection were

not well known those days and bacterial endophthalmitis might have caused a fatal sepsis.^{24,25}

Wolfgang Amadeus Mozart's eyes were quite large and he had protruding beautiful blue eyes (exophthalmia). Such medical condition, are common in hyperthyroidism, as well as Grave's disease or myopia. However they do not match very well with what we know about Mozart and the accurate diagnosis remains unclear.²⁴

Several orchestral musicians have presented some sort of visual complains, since eye troubles (dry and tired eyes) may be quite common among musicians.²⁶ The brain somatotopic representation of the fingers in blind individuals is often topographically disordered because cortical reorganization after neurological injuries might bring both positive and adaptative outcomes but also negative and aversive conditions.²⁷ As a hypothesis to be proved we suggest brains of musicians might have a specific topographical representation which combines listening and seeing, but having some differences depending on the nature of the musician as an interpreter or as a composer. Daniel Tammet, who is an author and mathematician with Asperger Syndrome (autistic savant), excels in math, plastic arts and music, but might have problems with reading or writing compositions as his weak areas.²⁸

However, functional brain imaging studies reveals specific brain areas are activated in a significantly stronger functional connectivity during compositional mental state in composers. These are the anterior cingulate cortex, the right angular gyrus, and the bilateral superior frontal gyrus, areas related to language processes, while none of the primary visual and motor areas are activated. Perhaps the neurons of these other brain areas (visual and motor), which are related to the music interpretation, are recruited to connect with auditory cortex (cingulate cortex and angular gyrus) in composers.²⁹ In blind people a cross modal plasticity happens between auditory and tactile brain areas in an expansion of the tonotopic brain area to interact effectively with their environment according to the principle formulated by Merzenich et al³⁰ of the continual competition for cortical space.³¹ In monkeys, the major topographic changes occurred inside an area of a cortical zone of 500 to 700 μm on either side of the initial boundaries of the representation for an amputee digit.³⁰

Manuel de Falla, the Musician

Manuel de Falla y Matheu was born in Cadiz, in 1876 and received his basic general and musical education in this city, during a period when the maritime trade with the Antilles was at its peak. His first records as student are preserved in Cádiz (*Archivo Histórico Provincial*) (Figure 2). They show how he was receiving exquisite education as he was good in arithmetic, careful calligraphy, and dictation. A sentence he wrote as a child by dictation was: "*El que no piensa por si mismo, ni razona sobre lo que le enseñan, está condenado a ser explotado toda su vida.*" Translation:

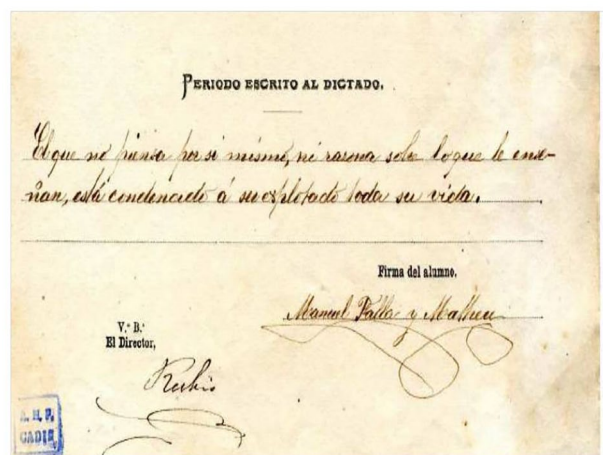


Figure 2. Example of a handwritten dictation made by Manuel de Falla, in 1888 (September 14th) while taking an exam to get access for his high school education in Columena School of Cadiz. He was 11 years old.

“He, who does not think for himself, or reasons about what he is taught, is condemned to be exploited all his life.”

Although he was educated mainly by his mother in domestic classes, *doña María Jesús Matheu y Zabala*, who was originally from Catalanian, he completed his exams as a free student in very good educational organisms. Falla's link to the Catalanian area was always present during his musical career, for instance, he got inspiration for his music from Catalanian poets such as Jacinto Verdaguer and his *Psyqué* was first performed in *Palau de la Música* in Barcelona, February 9th, 1924.

As a Spanish composer and pianist, he was one of the most important musicians of the first half of the 20th century. His music and Art have been known all around the world, because of his deeply rooted Andalusian origins and his sensitive interlaced knowledge about the folkloric popular music (Flamenco) together with the classical music. His written music are well known although the number of pieces he composed was relatively modest. His austere life restrained the impulsivity and passionate unbridled intellectual fury of others composers of his time. His style was framed inside the sweetness and smoothness of other costumbrist Romantic composers, such as Debussy, Albéniz, or Granados, but with the incorporated unique knowledge of gypsy culture and folk/popular music.

The newspaper ABC Diary in Spain defined in 1907, when he was 31 years old, his piano playing in such distinguished terms: “. . . se trata de un ejecutante de poderoso dominio del mecanismo y de un profundo conocimiento del espíritu de los autores que interpreta. . .” (Figure 3). Translation: . . . He is a performer with a powerful command of the mechanism and a deep knowledge of the spirit of the authors he interprets. . .

The Spanish writer Pérez de Ayala described the composer from Cádiz with these endearing words: “*Falla es algo frailelico. Cartujo por su recogimiento, benedictino por su asiduidad, franciscano por su mirada limpia, de éxtasis deleitable antes las obras de Dios; carmelita por la pureza de su música.*” Translation: Falla is



Figure 3. Press clipping of the Spanish newspaper ABC which describes so much admiration and appreciation toward Falla's piano performance that happened in Madrid, Teatro de la Comedia, 1907.

something of a friar: Carthusian for his recollection, Benedictine for his assiduity, Franciscan for his clean gaze, of delightful ecstasy before the works of God; Carmelite for the purity of his music.”³²

Besides his musical creative activity, he had a tremendous and exuberant communicative activity, being in often, international and friendly mail correspondence with other musicians, poets, bankers, painters (written in France and Spanish), Art organizations, writers, politicians, King Alfonso XIII, radios and such an impressive amount of intellectuals of that period, in a total of about 25 000 documents. He kept bidirectional correspondence with a total of 2379 different correspondents, of which 84 had an abundant amount of letters, more than 50 letters. For some of these correspondents, a total of 27, there is an unknown number of letters, for no specified reason. These documents are all guarded and preserved by the private institutional organization, in Granada, Spain, *Archivo Manuel de Falla*; (www.manueldefalla.com). Some of these documents are hand written by the correspondent as their original letters and many of them are written by Manuel de Falla, in draft copies before being sent to the recipient. In some cases, total communication has been possible to be rebuilt in clear and bidirectional dialogs because of this hard work and organizational meticulousness by Manuel de Falla with his letter ordering and charcoal copy prints. This information provides quite good insights and ideas about the Art state of those years, but also about the mind, health state and ideas of the manuscripts writers. In this research article we have carefully analyzed several of those letters.

Manuel de Falla, His Letters

In several of his letters Manuel de Falla explains to his correspondents he was suffering with an acute iridocyclitis (in Spanish named *iritis*). This eye flushing is caused because of the inflammation of 2 structures of the anterior pole of the

felicidad la excursión. El concierto de aquella noche
 fué el único a que asistí, pues las corrientes de aire
 del Palacio me perjudicaron para lo de la vista. Gra-

Figure 4. Fragment of the letter written by Manuel de Falla to the painter Ignacio Zuloaga, in 1928, July 5th. He mentioned his sight disease “. . .para lo de la vista. . .”

ocular globe, the iris and the ciliary body. It is usually a symptom of another disease, such as ankylosing spondylitis, leprosy, tuberculosis, gonorrhea, syphilis, or reactive arthritis. Many ocular diseases are related to psychological disorders and the appearance of these diseases could further aggravate mental states. Various studies report an association between stress and uveitis (iridocyclitis) activation.³³ Certain personality traits are also more common in patients with this eye disease. For instance, organized personalities (orderliness), with desire to control the randomness, punctuality, and hard worker are personality traits very commonly found in uveitis patients.³³

Acute iridocyclitis might have had an effect over Falla's psychological distress or vice versa. This influence has been proved to happen on another patients with depression, compulsion, somatization, or paranoia, because the intensive changes of emotion (anxiety) might affect the eye dysfunction.³⁴ Actually Falla usually complained in his letters about dizziness, headaches, fatigue, posture effect on his headaches, etc. We will exposed and discussed the Falla's messages about his health states related to his eyes.

In 1928, July 5th, Falla wrote to the painter Ignacio Zuloaga with these words: “El concierto de aquella noche fue el único al que asistí, pues las corrientes de aire del Palacio me perjudicaron para lo de la vista.” Translation

The concert that night was the only one I attended, because the air currents from the Palace were hurting me for the sight (Figure 4).

In 1932, July 19th, Falla wrote again to his friend the painter Zuloaga this words: “Ante todo ruego a usted me perdone que, por primera vez, utilice la máquina para escribirle, pero es el caso que, a consecuencia de unos fuertes dolores neurálgicos que acabo de sufrir, debo evitar en lo posible la escritura a mano, porque se reproducen los dolores con la continuada posición inclinada del cuerpo.” (Figure 5) Translation: First of all, I beg your pardon because, for the first time, I use the machine to write to you, but it is the case that, as a consequence of a severe neuralgic pain that I have just suffered, I must avoid writing by hand as much as possible, because with the continuous inclined position of the body the pains are reproduced.

On June 7th, year 1928 Falla's sister wrote a letter to John Trend dictated by Falla and explaining Manuel was unable to write by his own because of a condition on his eyes: “Mi querido amigo: tengo que dictar esta carta a M^a del Carmen porque desde hace cosa de un mes estoy sufriendo de la vista y aunque, gracias a

ATL 2/32
 Granada, 19 de Julio 1932
 Querido don Ignacio:
 Ante todo ruego a usted me perdone que, por primera vez,
 utilice la máquina para escribirle, pero es el caso que, a
 consecuencia de unos fuertes dolores neurálgicos que acabo
 de sufrir, debo evitar en lo posible la escritura a mano, por-
 que se reproducen los dolores con la continuada posición in-
 clinada del cuerpo.

Figure 5. Fragment of the letter written by Manuel de Falla to painter Ignacio Zuloaga, in 1932, July 19th where he mentioned some neurological troubles (headaches) depending on the body posture: “. . . FORTES dolores neurálgicos. . .”

7 junio 1928 -
 Trend
 Mi querido amigo: tengo que dictar
 esta carta a M^a del C. porque desde
 hace cosa de un mes estoy sufriendo
 de la vista y aunque, gracias a Dios,
 me encuentro muy mejorado, el médico
 no me permite que escriba todavía
 Le supongo en salud

Figure 6. Fragment of the letter written by Mari Carmen de Falla (sister) and dictated by Manuel de Falla to the Hipanist John Trend in June 7th, year 1928. He explains his sight sufferings “. . .estoy sufriendo de la vista. . .”

Dios, me encuentro muy mejorado, el médico no me permite que escriba todavía” (Figure 6). Translation: My dear friend: I have to dictate this letter to M^a del Carmen because I have been suffering from my sight for about a month and although, thank God, I am much better now, but the doctor does not allow me to write yet.

Granada, 6 de Julio 1928.

Querido Leopoldo:

Recibo tu epistelilla! Ante todo nuestra cordialísima felicitación para Ana María y par ti. Deseando estoy conocer vuestra infantica, y espero esta alegría para Septiembre, por las razones que luego te dare. Desde que por Natalio Rivas, que encontré en el Washington, supe la gratísima nueva de querido escribirte, pero sin duda ignoras que he pasado dos meses con una enfermedad en la vista que me impedía escribir y aun leer. Gracias a Dios empieza la convalecencia, pero teniendo que extremar las precauciones, y esta es una de las primeras cartas que salen de...mi máquina.

Figure 7. Fragment of the letter written by Manuel de Falla to the lawyer and politician Leopoldo Matos in July 6th, year 1928. He explains his sight disease "...he pasado dos meses con una enfermedad en la vista. ..."

15 marzo 1930.

El Ministro de Fomento
Particular

Sra. Doña María del Carmen de Falla.

Mi querida amiga.

Mucho lamento las noticias que Vd. me da sobre la indisposición padecida por Manolo, deseando que se encuentre ya totalmente restablecido de la crisis que sufrió y en disposición de volver a reanudar con normalidad su vida y sus trabajos.

Figure 8. Fragment of the letter written by the lawyer and politician Leopoldo Matos to Manuel de Falla year 1930, March 15th. He express his good wishes for Falla's diseases and mentioned the word crisis: "...crisis que sufrió. ..."

Next month that year Manuel de Falla wrote a letter to his friend Leopoldo Matos, explaining how his eye illness was causing his inability to write by hand.³⁵ He wrote: "...sin duda ignoras que he pasado dos meses con una enfermedad de la vista que me impedía escribir y aún leer. Gracias a Dios empieza la convalecencia, pero teniendo que extremar las precauciones, y esta es una de las primeras cartas que salen de...mi máquina" (Figure 7). Translation: "...certainly you ignore that I have been the past two months with an eye sickness that prevented me from writing and even reading. Thank God convalescence begins, but I have to take extreme precautions, and this is one of the first letters to emerge out of...my machine."

This eye disease might have caused him some discomfort or nervous imbalance, because in 1930 his friend Leopoldo Matos wrote to Manuel and Mari Carmen Falla these words: "Mucho lamento las noticias que Vd. me da sobre la indisposición

Siento mucho que el iritis no se ha curado del todo; pero sé de Pilar Cruz que U. ha pasado muy malos ratos y ahora se encuentra mejor. No deja U. de informarme de sus señas.

Figure 9. Fragment of the Postcard written by the Hispanist John Trend to Manuel de Falla year 1931, September 7th. He firstly mentioned the word "iritis" as the diagnosis made for the Falla's eye pains (iridocyclitis).

se lo mandaré. Cuenta, pues, con él para el nº de septbre. A más tardar lo recibirá a mediados de la semana próxima. La noche misma del día en que le escribí comencé a sufrir unos vértigos -a causa del calor insufrible- que me inutilizaron por algún tiempo para el trabajo. En fin,

Figure 10. Fragment of the letter written by Manuel de Falla to the editor and writer José Bergamín in 1933 year, August 29th, where he explains he suffered dizziness: "...sufir unos vértigos. ..."

padecida por Manolo -(Manuel's nickname, author note)-, deseando que se encuentre ya totalmente restablecido de la crisis que sufrió y en disposición de volver a reanudar con normalidad su vida y sus trabajos" (Figure 8).³⁵ Meaning: I very much regret the news that you gave me about the indisposition suffered by Manolo (nickname of Manuel), hoping that he is already fully recovered from the crisis he suffered and in a position to normally resume his life and works again.

Next year 1931, September 7th, John Trend sent to Manuel de Falla a very nice postcard with a painting of the British Museum (Venus and her team of Doves) where he expressed his empathy for the eye disease of Falla, still present. "Siento mucho que el iritis no se ha curado del todo, pero sé de Pilar Cruz que Ud. ha pasado muy malos ratos y ahora se encuentra mejor." (Figure 9) Translation:

I am very sorry that your iridocyclitis has not completely cured, but I know from Pilar Cruz that you have had a very bad time and now you are feeling better.³⁶

In 1933, August 29th, Manuel de Falla wrote to his friend José Bergamín this message: "A más tardar lo recibirá a mediados de la semana próxima. La noche misma del día en que le escribí comencé a sufrir unos vértigos -a causa del calor insufrible- que me inutilizaron por algún tiempo para el trabajo" (Figure 10).³⁷ Translation: You will receive it by the middle of next week at the latest. The very night of the day I wrote to you, I began to

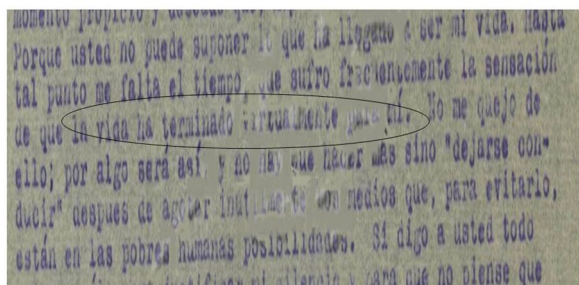


Figure 11. Fragment of the letter written by Manuel de Falla to the editor and writer José Bergamín in 1935, where he explains some mood disorders that might be pointing out to a depressive state; “. . .sufro frecuentemente la sensación de que la vida ha terminado virtualmente para mi. . .”

suffer from vertigo—because of the unbearable heat—that made me useless for some time for work.

Year 1935, Falla wrote to Bergamín these words, that certainly might be pointing out toward an acute depressive disorder³⁷; “. . . Porque Ud. no puede suponer lo que ha llegado a ser mi vida. Hasta tal punto me falta el tiempo, que sufro frecuentemente la sensación de que la vida ha terminado virtualmente para mi. No me quejo de ello, por algo será así, y no hay que hacer más sino ‘dejarse conducir’ después de agotar inútilmente los medios que, para evitarlo, están en las pobres humanas posibilidades. . .” (Figure 11). Translation: “Because you cannot imagine what my life has become. I lack time to such an extent that I frequently suffer the feeling that my life has virtually ended. I am not complaining about that, some reason might be happening, and there is nothing else left to do but to ‘go with the flow’ after all the poor tools of human possibilities to avoid such feeling are uselessly used up.”

Falla had headaches frequently and they might have affected his music. In 1938, May 20th, Manuel de Falla wrote a letter to his friend José María Pemán³⁸ and explained: “Yo sigo casi igual en mis padecimientos, que solo en estos muy últimos días han empezado a experimentar alguna mejoría. Y por si fuera poco, desde hace cosa de un mes sufro a veces como anuncios de congestión cerebral, consecuencia de las constantes preocupaciones.” Translation: I remain almost the same in my ailments, which only in these very last days have started to experience some improvement. And last but not least, for the last month or so I have been suffering from announcements of brain congestion (Figure 12), as a result of constant concerns.

Falla was a man not very tall with a large skull, similarly to Ravel, particularly noticeable when he got older and thinner (Figure 13). Due to the troubled and convulsed time he had to live in Spain in the middle of several wars, he might have not received a proper and complete diagnoses for his pains and illnesses. Only from the correspondence with his colleagues and artistic partners some further details might be elucidated.

In year 1938, May 29th, Manuel de Falla wrote a letter to his friend Joaquín Romero Murube³⁷ in response to one of his recent published chapter where he described Falla’s illnesses. “Por cierto que nunca como en ese capítulo (salvo en cierta foto) he

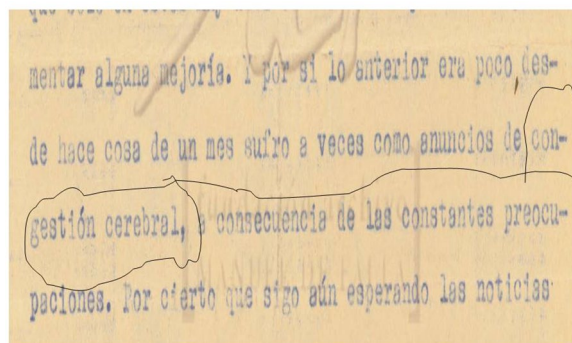


Figure 12. Letter fragment written by Manuel de Falla to the writer and Journalist José María Pemán in year 1938, May 20th, where he explains with a metaphor what he was feeling inside his brain, like a runny nose for a cold “. . .congestion cerebral. . .”

encontrado un reflejo más exacto de los efectos de mi enfermedad, ni tampoco andaluzada mayor que esos generosos calificativos con que Ud. lo adorna (Figure 14).³⁹ Translation: “By the way, never like in that chapter (except in a certain photo) I have found the most exact reflection of the effects of my illness, nor Andalusian greater definition than those generous qualifiers with which you adorn it.”

Searching for the definition of Falla’s disease we look for the book “Sevilla en los Labios”⁴⁰ and find exactly where Falla was mentioned and the reflection of his illness Falla himself qualified as “most exact.” These are the Murube’s words about Falla’s disease which explain the mystery and taboo about difficulty to reach musical rhythm (named son) in Andalusian dance: “Quizás, musicalmente, haya llegado a penetrarla algo ese viejecito santo, con tipo de sacristan de pueblo y un genio musicalmente imponderable: Don Manuel de Falla en su Amor Brujo.” Translation: Perhaps, musically speaking, that old saint man, with a type of village sacristan and a musically imponderable genius, has come to perceive the mystery somewhat: Don Manuel de Falla in his *Amor Brujo*.

The same year on August Manuel de Falla wrote these lines to the writer Pedro Pérez-Clotet these lines in 1938: “Mi régimen de alimentación es a base de jamón, legumbres y mermeladas (más algo de yogur, que, claro está, no será posible prepararlo allí).” (Figure 15). Translation: My diet is a base of ham, legumes and jams (plus some yogurt, which, of course, will not be possible to be prepared there).

The vague definition of Falla’s medical condition might have increased the obscurantism of Falla about his own disease, and turned his health care toward important but superficial aspects such as his diet and habits. It is remarkable to remember those days people were assassinated under the law because of their different ideas.

Effects of Manuel de Falla’s Eye Disease on His Compositions

Manuel de Falla lived in the city of Granada from 1920 to 1939. During those years, the eye diseases firstly appeared, as it was mentioned the first time by John B. Trend in his 1931



Figure 13. Two different portraits of Manuel de Falla. Left is an oil on canvas painting made by Ignacio de Zuloaga, in 1932 (Museo Ignacio Zuloaga, Segovia). Right side is a photograph of a sculpture in bronze made by Juan Cristobal in 1927, May (in the picture). The bust is located in the hallway of the Auditorio Manuel de Falla in Granada. It is noticeable how in both plastic art representations, the skull of the musician is quite important and prominent.

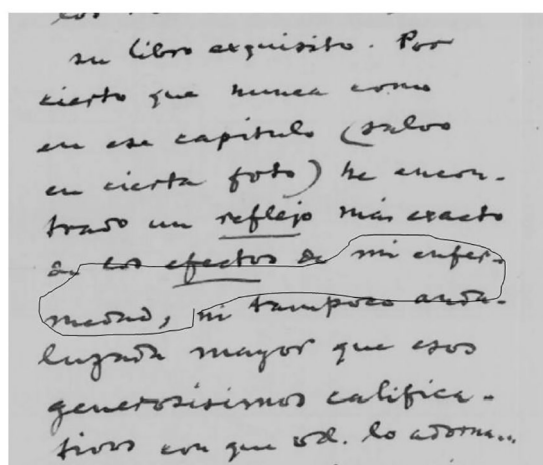


Figure 14. Fragment of the letter written by Manuel de Falla to the poet and articulist Joaquín Romero Murube in response to the mention written by Romero Murube about Falla in his book "Sevilla en los Labios," 1938. Falla mentioned his disease, but not related to the eyes, but to some of its consequences: ... un reflejo más exacto de los efectos de mi enfermedad. ...

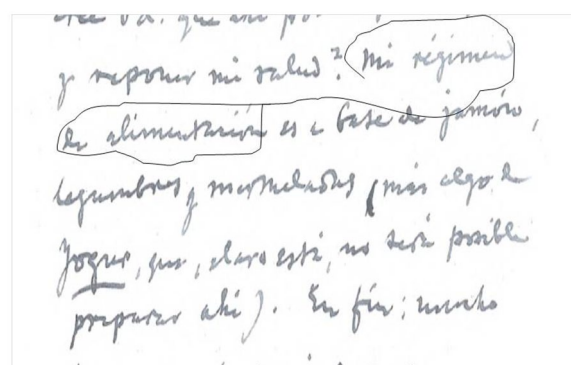


Figure 15. Fragment of the letter written by Manuel de Falla to the writer Pedro Pérez-Clotet, explaining him how his diet and nutritional requirements were: ... Mi regimen de alimentación. ...

postcard. The eye disease in Falla changed his line of compositions. On Table 1, it is noticeable how during those years, the time when his eye disease is explained in his letters to his friends as exposed above, there are no new compositions (empty squares in the table). Later on, from 1932 onwards, his music took a turn and he never composed again any scenic works or any piece for voice and instrument. From 1932 onwards, his pieces were with religious sense with choral and spiritual compositions, versions of other composers, tributes and some isolated pieces (Fanfarre 1934) and *Pour le Tombeau*, 1935) far away from the his costumbrists style that happened before (ie, *La vida Breve*, 1913; *El Barbero de Sevilla* and *El Amor Brujo*, 1925) (Table 1).

This eye lesion he mentioned several times in his letters to quite a number of his letter recipients might have had an effect over his musical activity, and over his psychological and balance state. His compositive intellectual activity was, during those years, some way frozen because of the increase of his health worries. However, his correspondence and communicative activity was preserved during those years, partly because of his sister's help and partly because he could find the way to keep writing without pain or dizziness (with a machine, dictations, etc). Even a few years after, his worries and pains did not disappear and his psychological balance was not improved for the environmental situation: some of his friends and colleagues, such as Federico García Lorca, were imprisoned and sentenced to be assassinated without judgment in 1936. Falla and Lorca were very much in touch while Falla lived in Granada and because of the musical folkloric competition "Cante jondo" that happened in Granada 1921.

Table 1. This table represents only a period of time in Falla's life and a few number of his compositions. Those years, from 1925 to 1936, when he was living in Granada, he wrote several letters explaining his eye condition. It is noticeable how those years, specifically from 1928 to 1931, his new compositions were absent and later on his style in composing changed somehow.

Musical compositions												
	El barbero de Sevilla		Soneto a Cordoba					Ave Maria	Balada a Mallorca	Fanfarre sobre Arbos	Pou rle Tom ban	
	Atlántida		Atlántida	Atlántida	Atlántida	Atlántida	Atlántida	Atlántida	Atlántida	Atlántida	Atlántida	Atlántida
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Year of Premiere												

Conclusions

Manuel de Falla is an eminent figure in the classical Spanish musical scene. His compositions reached the international recognition and his musical work is known worldwide. From years 1928 to 1938 he was systematically complaining in his letters about his health state, particularly referring to his eyes. He reported dizziness, vertigos, brain congestion, headaches depending on body posture, pain in his eyes due to the air, to the light or to personal crisis, symptoms of mood disorders, etc, but no clear diagnosis was made besides the iridocyclitis mentioned by Trend in 1931. His personality traits are found to be around the orderliness style, he was a very hard and meticulous worker. This style has been shown to be associated with more likely episodes of anxiety and stress, increased themselves those years because of wars, and that might certainly have had an effect over his eye soreness. His eye condition, as occurred with another musicians throughout history, had a backlash over his music and compositions. Falla's physical complexion was very similar to Ravel's one, although he have never had a cranionen-cephalitic trauma, nor neuropsychological impairments as Ravel did, to the best of our knowledge. Beside of the presented here, more examples of his pain and discomfort do exist in his excessively abundant correspondence, but we were unable to get the original documents. Further research on this topic of neuropsychology of Manuel de Falla would certainly help to a better understanding and appreciation of his music and compositions. In a further line of research in music, it would be of interest to prove as an overarching neuroscientific framework that all senses, the whole brain and perhaps every human organs might be implied in magnifying the perception of music and the ability to express it.

Credit of Images

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Author Contributions

AG and DS may have contributed in multiple roles. AG prepared the draft and the final version of the manuscript, DS corrected these versions. AG looked for the target original letters in Spanish (investigation and resources). DS provided the theoretical frame to interpret the letters for musical creativity in neurosciences in relation to conceptualization and terms.

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