

MAURICE RAVEL'S *BOLERO*: A MYSTICAL DANCE HIDDEN BENEATH A SENSUAL BALLET. AN APPROACH TO ITS SYMBOLIC MEANINGS¹

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[...] the Perfect One [...] after having divided himself up
in the multiplicity, finds himself again in unity.²

ABSTRACT

Claudio Naranjo's thesis that Ravel's *Bolero* was inspired by a Sufi dance allows us to delve deeper into an interpretative reading of a symbolic message. The relationship between music and number throbs within the rhythmic, melodic, harmonic and timbre parameters of the work's musical discourse. The reiterative return and resurgence of the melody from the pole of the tonic in Ravel's *Bolero* forms the structure of a melodic cone, which ascends, coloured with new incoming frequencies, into a sonorous helicoidal spiral, leading to the luminous metamorphosis of a perfect and absolute realization at the end of this magnificent composition.

KEYWORDS: Maurice Ravel, *Bolero*, music and symbolism, music and number, mystical dance, body and music, 20th-century French music.

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2. Louis CATTIAUX, *The message rediscovered*, Brussels, Beya, 2005, book x, verse 20; cf. *El missatge retrobat*, Barcelona, Claret, 2007.

EL *BOLERO* DE RAVEL: UNA DANSA MÍSTICA AMAGADA DARRERE
UN BALL SENSUAL. UNA APROXIMACIÓ AL SEU SIGNIFICAT SIMBÒLIC

RESUM

La hipòtesi de Claudio Naranjo sobre la inspiració del *Bolero* de Ravel en una dansa sufí permet aprofundir en una lectura interpretativa del missatge simbòlic que, a través de l'òptica de les relacions entre música i número, sembla bategar sota els paràmetres rítmics, melòdics, harmònics i tímbrics del discurs musical de l'obra. El retorn reiteratiu i el ressorgiment de la melodia, des del pol de la tònica, desplega l'estructura d'un con melòdic que ascendeix, acolorit de noves freqüències, en una espiral sonora helicoidal, que mena a la metamorfosi lluminosa d'una realització perfecta i absoluta al terme de l'obra.

PARAULES CLAU: Maurice Ravel, *Bolero*, música i simbolisme, música i número, dansa mística, el cos i la música, música francesa del segle XX.

1. BODY AND MUSIC: THE VOICE AS PROTAGONIST

Our body, the visible part of our souls, or “a portion of Soul”³ as William Blake would say, has been and continues to be considered by most human spiritual traditions as the temple of the Spirit, the holy place where the sacred becomes matter, or incarnates. Thus, in Christian tradition, Mary, human as she was, becomes the model and the paradigm of the reception of the presence of the Spirit, a reception that becomes continuous in her and culminates in the Incarnation.

A brief excursus on the inveterate relationship between body and music, with the voice as protagonist, would lead us to consider the important role that the voice plays in the founding myths of humanity's spiritual traditions. The power of the divine voice is evident in the mythological account of the Creation in the Hebrew tradition, according to which the words uttered by *Elohim* are creative in themselves.⁴ In the Gospel, Jesus – embodiment of the Word – heals with the power of his Word and echoes the Creator's breath in Man⁵ when he declares: “we have played the flute and you have not danced, we have sung songs of mourning and you have not cried”.⁶ Man becomes the sounding board and the instrument which the *Logos* plays with its plectrum.

For the spiritual Man, according to the Pythagorean school, the body was also the sounding board allowing the Harmony of the Spheres to be heard. It was a listening experience that became a *theoria*, that is to say, a *contemplative* expe-

3. William BLAKE, *The marriage of heaven and hell*, ed. Geoffrey Keynes, London, Oxford Univ. Press, 1975, p. 3.

4. Gn 1:3.

5. When I write “Man”, I am referring to Adam, comprising man and woman in one.

6. Lc 7:32.

rience flowing from within the heart of the philosopher, which allowed him to vibrate with the heart of the Universe, and which could probably be related to “l'écoute par le cœur des discours du monde invisible (*khatib al-ghayb*)”,⁷ evidenced by the testimony of Sufi mysticism.⁸

Within the context of the Greek Classical culture, the myth of the Sirens' song also embodied the power of a metaphysical chant, the hearing of which, however, would bring about either horrific or beneficial consequences. The Neoplatonist philosophers Porphyry and Iamblichus included in their respective biographies of Pythagoras a sentence from the Catechism of the Acousmatics, which defined the *tetractys* – the Pythagorean sacred tetrad – as “la armonía en la que están las sirenas”.⁹ The Sirens' anthropomorphic body, torso and face have womanlike features. Their voices – eclipsed only by that of the divine Orpheus' – were described as extremely sharp and entirely devoid of gravity, which has led some cabalists to establish a concordance between the alluring trap of their sonorous attributes and the whistling voice of the serpent in Genesis.¹⁰

The sharp and seducing Sirens' chant is the enrapturing web of a sexless beauty devoid of physical pleasure and of the capability to procreate. Only through their voices will the suggestive humanity in them become apparent, yet the animal condition of their lower body reveals their impotence: no fundamental is perceived when their high chant is produced. Only Ulysses would know how to satisfy them: counselled by Circe, he would approach them linked to his gravitational weight and to his fundamental harmonics.¹¹

In relation to above mentioned, it may be noted that the iconography of sound in Christian cultures has incorporated these analogies between body and voice emerging from Antiquity. From medieval tunes on the Passion of Jesus to the appearance of the dramatic genres of the Baroque, the musical role which gave voice to the figure of Jesus Christ was always embodied by a male voice with a low vocal tessitura – baritone or bass. The voice of Christ, the foundation stone of every Christian and of the Church, sings the weight, the solidity and the foundation of the Word, the *Logos*.

Likewise, it is interesting to see how in the repertoire of the Baroque dramatic genres, the vast majority of the musical roles representing the Virgin Mary

7. Jean DURING, *Musique et extase: L'audition mystique dans la tradition soufie*, Paris, Albin Michel, 1988, p. 51.

8. Josep Maria GREGORI I CIFRÉ, “L'armonia delle sfere, simbolo di un ascolto contemplativo”, *Materiali di Estetica*, 7 (2002), p. 211-221; “L'armonia de les esferes”, in *Música Caelestis: Reflexions sobre música i símbol*, Tarragona, URV-Arola, 2012, p. 61-71.

9. JÁMBLICO, *Sobre la vida pitagórica*, XVIII, 82, in David HERNÁNDEZ DE LA FUENTE, *Vidas de Pitágoras*, Vilaür, Atalanta, 2014, p. 281.

10. Emmanuel d'HOOGHVORST, *Le fil de Pénélope*, Paris, La Table d'Émeraude, 1996, p. 83-89; *El fil de Penèlope*, Barcelona, Claret, 1999, p. 73-78.

11. Josep Maria GREGORI I CIFRÉ, “El canto de las sirenas: reflexiones en torno a un símbolo musical”, in Margarita VEGA RODRÍGUEZ and Carlos VILLAR-TABOADA (eds.), *Música, lenguaje y significado*, Valladolid, SITEM-Glares, 2001, p. 221-231.

were assigned to the contralto male range of voice (the male *altus*), such roles being only rarely or never written for sopranos. In this case, setting aside moral and sociological aspects, it is likely that we find ourselves before another symbolism of timbre tone which, perhaps in its origin, was intended to avoid any type of sound association between the Genesis serpent's high-pitched voice and Mary's human voice.

Music wanders in an invisible way, just as energy does in the Universe. Not only does the power of its waves interact with the physical body, but its resonance also has the capability of penetrating deep into the most hidden domains within our souls. Music is able to set in motion the ontological foundation on which Man was created.

Igor Reznikoff considers St. Augustine knowledgeable of this experience, owing to the fact that when he defined music, first as *ars bene modulandi* and later as *ars bene movendi*,¹² he did so thanks to his knowledge of the power of music, to the extent of setting into vibration the nucleus of the being.¹³ Nevertheless, ancient Orphic and Pythagorean traditions – the latter conveyed by Plato – already witnessed the perceptive awareness of the emotional power of *ethos* on music and on the *psyche*, that is to say, the human soul.

The perception of these unseen effects manifests itself in the body, thanks to the expansive irradiation of this concealed vibration, which expands from the core of the soul, stirring the spirit and channelling what cannot be uttered. The spirit then transforms this communication into emotional awareness. The body will eventually be in charge of channelling, through our senses, the forthcoming signals of the commotion originating inside.¹⁴

A further demonstration of one of the ontological laws that show the exterior world to be the objectification of the inner world became evident in the research carried out by Dr. Masaru Emoto on the effect of music on water molecules. He stated that the organic structure of molecules in water is directly affected by the influence of the harmonic structure of the music involved.¹⁵ In according with the aforementioned reactive effects, it is easy to recognize the power and influence of music on the development and vertebration of awareness, as well as on the cellular structure of the physical body. In addition to Dr. Emoto, other researchers have also set about finding analogies and interactions between

12. St. AUGUSTINE, *De Musica*, I, II, 2-3 and I, III, 4. Cf. *Obras completas de San Agustín*, vol. XXXIX, Madrid, BAC, 1988, p. 73-78.

13. In this regard, see IGOR REZNIKOFF, "On primitive elements of musical meaning", *The Journal of Music and Meaning*, 3 (2004-2005), section 2.3. The adverb *bene* in the Augustinian definition seems to give music not only the moral complement of a movement of correctness and quality, but also the goodness, beauty and truthfulness – *bonus, bellus et verus* – that are implicitly integrated in the fulfillment of its noble objective.

14. Cf. ALEKSEI NIKOLSKY, "¿Cómo funciona la emoción musical?", in Teresa CASCUDO (ed.), *Música y cuerpo: Estudios musicológicos*, Logroño, Calanda, 2015, p. 211-240.

15. Masaru EMOTO, *Messages from water*, Tokyo, Hado Kyoiku Sha Co., 1999; cf. *Mensajes del agua: La belleza oculta del agua*, Barcelona, La Liebre de Marzo, 2003, p. 73-91.

music and the development of the physiological structure of our bodies' organs.¹⁶

Music, springing as if it were an echo or resonance from the Fountain of Life, behaves like the word of God, which "secretly conveys its light to the soul before enlightening the spirit".¹⁷

2. OUR BODY DANCES WITH THE UNIVERSE

Life is like a dance, and the energy of the Universe dances within it, from the macrocosm to the microcosm. Stars, planets, the wind and the sea, the birds and the bees, the chemistry in cells, and atoms and photons all dance about under the ebb and flow of the energy fields that move the universe. And not only do they dance: they sing as well. The Universe sings from the macrocosm of the Harmony of the Spheres to the microsonic frequencies in the quantum energy in DNA, under whose frequencies the chant of a luminous body as it is meant to be is woven.¹⁸

Let us talk, then, about the effects of sound on matter and, therefore, on the body. Experiments carried out on cymatics show that the vibrational frequency of sound waves arranges matter and gives it shape. The vibrational sound applied to solid matter like flour or salt, and even to a liquid when placed on a flat surface, leads to the creation of geometrical patterns based on the vibrational frequency of sound.¹⁹

The change in shape takes place according to the frequency of the vibration in the waves. It should be noted that an apparent instant of chaos or of the undefined is produced between one shape and the other, until a new one comes forth. As the vibration increases the sharpness of its frequency, the shape becomes more complex, thus indicating that the complexity of the shape adapts itself to the complexity of the vibration. Hence the importance of quality in the fractal range of harmonic sounds and of the morphological effects they exert, not only on the physical body, but also on the body of energy that surrounds it.

Thanks to the advances in energy medicine, we now know that our physical body is wrapped in an energy body of electromagnetic origin, with which it is closely linked, and that the intervention of one of them on a certain point of the other produces a holistic interaction in the intervening one. This leads us to con-

16. Armin HUSEMANN, *The harmony of the human body*, Edinburgh, Floris Book, 1994, and *Human hearing and the reality of music*, Massachusetts, Steiner Books, 2013.

17. Louis CATTIAUX, *The message rediscovered*, Brussels, Beya, 2005, book XVIII, verse 67'; cf. *El missatge retrobat*, Barcelona, Claret, 2007.

18. Susan ALEXJANDER and David DEAMER, "The infrared frequencies of DNA bases: Science and art", *IEEE Engineering in Medicine and Biology Magazine*, 18, 2 (March-April 1999), p. 74-79.

19. See the video of Dr. Hans Jennyn, a pioneer in cymatic studies: <https://www.youtube.com/watch?v=W6PSA5bYTxs>.

sider that the effects of the perception of music on the complexity of molecular structure of the physical body are already produced in the biofield or electromagnetic structure of the energy body.

The invisible data which music conveys through its sound frequencies interacts with electromagnetic waves in the biofield, which behaves like a receiver antenna that transfers music's invisible message to the physical body. The body bears testimony to its reception by means of sensations, emotions or reactions, which the body itself exteriorises in different ways.

The acoustic and vibrational complexity of a piece of music, that is to say, the arrangement of sound emerging from the harmonic and the contrapuntal language, together with the disposition of its harmonic and fractal range, creates patterns of vibrational interference that interact with the energy field which the physical body projects into its electromagnetic biofield.

The dynamic level which such interaction may reach becomes extremely impressive and evident when the phenomenon of musical improvisation occurs. When musicians gather in order to improvise, what assembles them is their biofields. They are in charge of facilitating the musical information, so that it may be transmitted instantly among the musicians without the need of previous rehearsals.²⁰

This would lead us to conclude that the effects which the vibration of sound exerts on the very structure of the human body by means of the synchronization with the energy circuit of a person's biofield influence the overall balance of the organism's reharmonization, restoring disarrangements or making sound information circle over energetic zones which may have been blocked. This is shown in Fabien Maman's research on the effects that sound vibrations have on the cellular regeneration of the body and on its magnetic field when they are produced with diapason ranges.²¹ Thanks to the advances in bio-energetic medicine and quantum physics, we are able to extend the old Platonic postulate which states that "music is the medicine of the soul" by saying that "music is the medicine of the soul and of the body as well".

But how is the connection between the physical body and the vibrational energy that surrounds it produced? In his research on the energy body, Dr. Manel Ballester and his team – to whose observations I am greatly indebted – have contributed to the discovery of the interrelationship between magnetic fields and proteins situated on the cellular surface acting as reception and emission antennas.²² In recent studies on the heart's electromagnetic fields, it has been observed that what allows it to stay alive is not the so-called mechanism of ventricular al-

20. It may be said that the phenomenon of musical improvisation has long existed, extending from medieval music to the magnificent performers of the 19th century and to jazz, modern music and popular music in the 21st century.

21. Fabien MAMAN, *The role of music in the twenty-first century*, Redondo Beach, Tama-Dö Press, 1997.

22. Cf. Manel BALLESTER-RODÉS, Francesc CARRERAS-COSTA, Teresa VERSYP-DUCAJU, Montserrat BALLESTER-RODÉS and Davendra MEHTA, "Field dynamics in atrioventricular activation. Clinical

ternation but rather the reception of an exterior magnetic impulse, which is in charge of establishing the ventricular rhythm's interconnection, in such way that when its reception is interrupted the heartbeat stops.²³

Nowadays, energy medicine acknowledges what Hindu tradition has known since ancient times, namely that the link between the electromagnetic field and the physical body is channelled through a number of focal points or centres of energy, called *chakras* by that tradition. Through its energy swirls, the body enters into harmony with vibrational energy in its surrounding area and, therefore, with the dance of the energy flowing in the Universe.

That is the reason why life in Man, as in all other living organisms, is the result of the continuous exchange of energy, through its magnetic fields, with the energy that moves the Universe. Humans' threefold nature of body, soul and spirit acts as the intersection in this exchange. Man, however, is summoned to participate in the most profound dimension of this energy dynamics because he possesses within himself the potential to participate in the instant-space-eternity dimension, coming from the same chronological dimension which limits him.

Having said this, we shall now seek to show how Maurice Ravel's *Bolero*, similarly to the way in which the body becomes the soundboard and vibrational cord of the energy frequency within the Universe's diapason, weaves a sound expansion which, vertebrated from the base of the fundamental note, spins like a dervish dance, spiralling timbre mutations, until the summit of its cone reaches a bountiful harmonic state in which sound turns into light.

3. THE CONCEPTION OF *BOLERO*: A MYSTICAL DANCE BENEATH A SENSUAL BALLET

Why did Ravel give this piece the name of *Bolero*? We know that the dance by this name became popular in Castille and in the south of the Iberian Peninsula around the middle of the 18th century and that it was accompanied by the guitar and castanets. Nevertheless, the term's etymology seems to suggest that it derives from "voleo", that is to say, from the "vuelo aéreo" (aerial flight) of the dance.²⁴ *Bolero* was conceived by Ravel between the months of July and October of 1928 as a piece of ballet music inspired by Spanish popular melodies. It was commissioned by Ida Rubinstein, a former ballerina of Sergei Diaghilev's ballet.

Its premiere took place on the 22nd November 1928 at the National Theatre of the Opera in Paris, with a picturesque Spanish-like choreography. Ida Rubin-

evidence of a specific field-to-protein interaction", *Medical Hypotheses*, 124 (2019), p. 56-59; and see Ballester's communication at <https://www.youtube.com/watch?v=2Vt3p5xiDsw>.

23. James L. OSCHMAN and Nora H. OSCHMAN, "The heart as a bi-directional scalar field antenna", *Vortex Science and Technology*, 2, 121 (2015).

24. Elvira CARRIÓN MARTÍN, "El origen de la escuela bolera. Nacimiento del bolero", *Danza-ratte: Revista del Conservatorio Superior de Danza de Málaga*, 12 (2019), p. 30-44.

stein danced on a round table, while at her feet a circle of male dancers showed their ardent desire to possess her in an all but endless crescendo which culminated in a final ecstasy. This choreography led, with slight variations, to Maurice Bejart's *Bolero* and others that followed.

Beginning with that first choreographic reading, the expressive force of the upheaving crescendo in the intensity of the timbre and sound acquired the representation of the birth and gradual development of the formation of a genic energy of passionate character which, in the image of the progressive inflammation of a loving possession, finds its culmination in the final climax that leads to the outburst of an orgasm. Without a doubt, this message lies implicit in the choreographic interpretations of *Bolero* that have been made since then.

However, the meanders in the river of fire through which human love flows and finds its means of expression are nothing but an unconscious objectivity of the divine Eros, whose love interpolates us from within our human condition. The arrow of Eros, the first of the gods and an archer, just as Annik de Souzenelle established, "embrasse la totalité de l'expérience amoureuse" and "si dévoyée soit-elle au départ de nos vies, peut à chaque instant retrouver la voie de sa juste cible, son axe créateur, qui l'appelle."²⁵

The quest for information on *Bolero* led me to an article by Claudio Naranjo – psychiatrist, disciple of Fritz Perls (founder of Gestalt therapy) and also a musician – where, in spite of not citing the source, he stated the following:

He tenido noticia de que Ravel tuvo contacto con un grupo sufí en Túnez, y que su bolero fue compuesto como un dhikr –esto es, como un medio de evocación de lo divino–. Así como un dhikr verbal es una fórmula que se repite una y otra vez con la intención de recordar a Dios más y más profundamente, también podemos utilizar el bolero para profundizar e intensificar una concentración en lo divino, y para quien lo intente no cabrá duda de que el estallido musical final expresa un éxtasis.²⁶

Naranjo's suggestion opened the door to the reading, in the dance of *Bolero*, of an image resembling the dance of divine energy which, like an underlying sap, nurtures the "Beginning" (*Bereixit*) that lives within us, the Image that roots us, awakened in our hearts as an impulse energized by a love force, so as to elevate in a spiral, ascending to the culmination of Man, fully replenished with his body of light – the second body which Saint Paul mentions when he says: "an animal's body is planted and a spiritual body is resurrected".²⁷

That is why I perceive that Claudio Naranjo's words open the door for a focus on new considerations concerning the senses or the symbolic message that this

25. Annick de SOUZENELLE, *L'arc et la flèche: Merveilles de l'Éros*, Paris, Albin Michel, 2003, p. 10; cf. *L'arc i la fletxa: Meravelles de l'Eros*, Barcelona, Claret, 2016, p. 12.

26. Claudio NARANJO, "Forma significativa en el *Bolero* de Ravel", *Revista de Música, Arte y Proceso*, 8 (1999), p. 21-26.

27. 1 Co 14: 44.

piece of music seems to have, far beyond its conventional meaning. Could the design of the structure of its harmonic, rhythmic, melodic and timbre parameters be read in this way? Here we would then have an invitation to contemplate *Bolero*, which we have surely heard so many times, within the fragrance of a subtle gaze.

4. THE MUSICAL STRUCTURE: FROM SOUND TO LIGHT

The first thing that astounds us, from a musical point of view, is the omnipresence of the tonic in its quality of fundamental tonality, all along the composite discourse. The sound discourse develops around it as if it were a gravitational axis from which the music emerges and to which it returns at its ending.

With respect to its metric structure, *Bolero* is written in a single movement containing 340 bars, divided into 18 sections numbered by Ravel and preceded by an unnumbered one. The correlative distribution is as follows: 20 bars (section [0]) + 306 bars (sections 1 to 17; with 18 bars each) + 14 bars (section 18) = 340 bars [3 + 4 + 0 = 7].

4.1. THE AXIAL VALUE OF THE HARMONIC BASE

Bolero is exceptional in that it presents the line of its harmonic discourse in circles over and over again, in a continuous and repeated way, on the perfect major chord of the fundamental tone (C major). This fact led Claudio Naranjo to consider:

El primer significado que discierno es de la tónica, tan reiterada en él. Puedo decir que la tónica es el “hogar musical”, la base de todo lo que la música dice, fondo omnipresente, comienzo y fin esperado que evoca en nosotros la base, el alfa y omega de todo: lo Divino.²⁸

Basically, the whole journey through the harmonic discourse of *Bolero* rises over the gravitational weight of the tonic in a constant and indefectible way, from the first pianissimo (with the pizzicato of the violas and cellos) to the culmination of the last fortissimo of the orchestra's tutti, except for a modulation of 8 bars in E major, which is performed before the final cadence of the piece.

The harmonic pedal persistently hammers over the articulation between the tonic (C) in the first beat of the bar, and the 5th of its chord, the dominant (G) in the second and third beats, to fall on the tonic in the following bar, thus reproducing it until its conclusion.

The presence of this quite unusual phenomenon in Western music allows the reading of the omnipresent weight of the “pedal note” that sustains it in this

28. Claudio NARANJO, *La música interior: Hacia una hermenéutica de la expresión sonora*, Barcelona, La Llave, 2015, p. 84-85.

infrangible tonal line, accompanying it like the drone (*bourdon*) of a Tibetan's mantra plainchant or, in the case of Ravel having been inspired by a Sufi dance, like the drone of a *dhikr* being sung.

In musical traditions linked to prayers, the drone represents, under a sonorous structure, the basal reference to the divine foundation and, at the same time, it evokes an image of the oneness reached at the unison upon which the glory of the human chant rises, as could be the case of a melodic ornament. According to a certain Sufi tale, "une vieille femme émerveillée d'entendre toujours son époux jouer sur son 'ney' la même note s'étonna, lors d'un concert donné dans son village, que la musique provienne d'une multitude de notes produites par de nombreux musiciens, à quoi l'homme répondit: 'Oui, ma chérie, eux, ils cherchent!'..."²⁹ This persistence of the drone in *Bolero* seems to indicate both the fundamental weight upon which the sound discourse rises, as well as this discourse's continuous reintegration into it.

Hence, to our understanding, Naranjo's accomplishment is to consider the fundamental note as the "musical home" of *Bolero*. This very idea leads us to read in this "musical home" of the tonic, a sonorous symbol of the sacred "place", *makom* (Gn 28:17), the soil of the "kingdom", *malikut*, from where the roots of the *sephiroth* tree rise in the Hebrew tradition. This "place" is also positioned on the first of the seven *chakras* in the Hindu tradition, from which energy ascends to reach oneness in the matrix of the unifying silence of the seventh.

From a harmonic standpoint, it is equally surprising – in a piece supported on the consistent stability of the pedal on C major – to observe the modulation to E major produced between bars 327 and 334, at the start of section 18. The natural harmonic modulation, according to the scale of C major, would have led to degree III on the scale, that is, E minor. This seems to be due to an aspect of signification: after 326 bars based on the harmonic stability of the tonic, modulating to a natural degree III would have weakened the solidity of the harmonic message which transmits the discourse. This would be even more so in the final phase leading to the climax, reached both by the dynamics – placed on total fortissimo (*ff*) – as well as by the timbre palette of the orchestra, rich in colour following the appearance of theme B in section 17.

After this single modulation, the piece recovers the fundamental tonality, C major, in its four last bars (335-338). In the next to last bar of *Bolero* (339), Ravel writes a plagal cadence on F minor in order to seal the final conclusion in the tonic. In the aim of carrying out this cadence, he makes use of a modal interchange with the degree IV of C minor,³⁰ which allows him to present, in the next to last bar, a sort of harmonic compression of the synthesis of theme B at the end of the vibrant metamorphosis that leads to the end of the piece.

29. Annick de SOUZENELLE, *L'arc et la flèche: Merveilles de l'Éros*, Paris, Albin Michel, 2003, p. 62; cf. *L'arc et la flèche: Merveilles de l'Éros*, p. 55.

30. It is a melodic pattern written from the 6th interval of the minor melodic scale of A flat (natural Locria 2).

The sound compression in this final cadence may offer an interesting reading from a symbolic point of view. What takes place in this last bar is significant. It is usually read as the downfall which precedes the final burst of ecstasy. However, this downfall could be interpreted, from the standpoint of alchemic symbolism, like the last dissolution that precedes the final clotting, fruit of the continuous inner mutations in Man, represented in theme B alongside the fight within the animalistic drives in his soul. This fight “with” – and not “against” – is what allows him to reach, with the help of Divinity, a complete purification before becoming a living soul within the solidity of his new spiritual body.

4.2. THE RHYTHMIC CELL AND THE RITORNELLO

Bolero is written in the ternary beat of 3/4 and its rhythm is articulated on a cell built on two motifs. The first one, played on the snare drums, is two bars long and articulated by 24 notes, 10 in the first bar and 14 in the second. The second motif, interpreted by double basses, cellos and violas, becomes the rhythmic base of the entire harmonic discourse and is closely linked to the melody.



FIGURE 1. *Bolero*: bars 1-2.

SOURCE: Own elaboration.

Let us try to come closer to a symbolic reading of its presence by centring on the results of its numerical values. The first rhythmic motif repeats itself a total of 169 times between bars 1 and 338, making 4,056 percussion sound strokes, to which 8 final articulations of bars 339 and 340 must be added. The total count is thus 4,064 articulation points, with 5 being the numerical value of the following figure ($4 + 0 + 6 + 4 = 14$ and $1 + 4 = 5$), a number traditionally associated with the measure of the human being.

Within the frame of the ternary time signature, the second rhythmic motif makes the first pulsation correspond with the tonic note (I: C) and the other two with the dominant (V: G). All along the piece, the number of its metric pulsations reaches the figure of 1,020 ($340 \text{ bars} \times 3 \text{ beats} = 1,020$), from which we must deduct the two quarter note final rests in the last bar. The final result is thus 1,018 pulsations, giving 10 or 1 as a result, being the sum of its factors ($1 + 0 + 1 + 8 = 10 = 1$), a number traditionally associated with both the divine plenitude (10) and the wholeness of the One (1), basis and foundation on which the life of Man (5) is articulated.

A symbolic look into the rhythmic language of *Bolero* would also lead us to observe the way in which the becoming of Man (5) is articulated, bar by bar,

measured in 7 ($3 + 4 + 0 = 7$), over the ternary basis of the divine rhythm (3), while the rhythm of the becoming of Man (5) fluctuates alternatively between the metric measure of the first rhythmic motif of the odd bars (whose value equals 10) and the even ones (whose value equals 5), inside the two bars which constitute the measure of the ritornello. It is just as interesting to see that in the binary measure of the ritornello, the numerical values of the fundamental rhythm – symbol of perfection and divinity ($3 + 3 = 6$), and of the overlapping rhythm of the box – symbol of Man ($10 + 14 = 24$ and $2 + 4 = 6$) – reunite in a happy analogy.

From beginning to end, the ritornello marks the vital cycle of *Bolero*, the rhythmic cycle within which Man and God blend beneath the beating of the Spirit. The numerical representation of the presence of the ritornello by means of its number of bars offers the following result: 4 bars (first ritornello) + 36 bars (18 ritornellos \times 2 bars each) + 4 bars (last ritornello) = 44 ritornello bars, and 44 is the same as 8 ($4 + 4 = 8$). Framed within Christian symbolism, the number 8 is associated with the resurrection of Christ and the very design of the figure seems to evoke, in its intrinsic verticality, the assumption that the measure of the *Verbum* (“the Word”) (8) shapes the unreachable and limitless dimension of infinity (∞). May we not read in the iterative presence of the ritornello an image of the omnipresent heartbeat of the divine nature in the heart of Creation and within the deepest awareness in Man, as well as in the indefectible persistence of its devoted wish to guide Man to his apotheosis and glorification?

On the other hand, the measure of Christ (8) – the true Image of God – and the measure of Man (5) – created in the image of the Image of God, just as is taught by Origen³¹ – seem to show up during the display of the four bars in the last ritornello (335-338) which, from a formal standpoint, reflects like a mirror the ritornello in *Bolero*'s prelude, from the upper circle of the spiral in the sound cone.

This ritornello, which precedes the final cadence, seems to summarize in its 4 bars the interaction between the measures of Christ and Man within the orchestral density that surrounds it. The sum total of notes that make up the sound body of the orchestra's tutti offers this evocative outcome:

- bar 335: 377 notes ($3 + 7 + 7 = 17$ and $1 + 7 = 8$)
- bar 336: 482 notes ($4 + 8 + 2 = 14$ and $1 + 4 = 5$)
- bar 337: 374 notes ($3 + 7 + 4 = 14$ and $1 + 4 = 5$)
- bar 338: 482 notes ($4 + 8 + 2 = 14$ and $1 + 4 = 5$)

31. *Origène: Homélie sur la Genèse* (Paris, Les Éditions du Cerf, 1976, “Sources Chrétiennes”, 7bis), Homily I, 13, 57-65: “Donc, ‘Dieu fit l’homme, il le fit à l’image de Dieu’. Il nous faut voir quelle est cette image de Dieu et chercher à la ressemblance de quelle image l’homme a été fait. Car il n’est pas dit que Dieu fit l’homme à son image ou à sa ressemblance, mais qu’il le fit à l’image de Dieu. Quelle est donc cette autre image de Dieu à la ressemblance de laquelle l’homme a été fait ? Ce n’est peut-être que notre Sauveur : il est ‘le premier-né de toute créature’ ; de Lui il est écrit qu’il est ‘la splendeur de la lumière éternelle et la forme visible de la substance de Dieu’ [...]”.

The sum of the 4 bars being 1,715 notes ($1 + 7 + 1 + 5 = 14$ and $1 + 4 = 5$). Number 8, symbol of the incarnated divinity, precedes the three measures of the incarnated humankind, just like the indisputable suggestion that Christ (8) is the model according to which Man (5) lives the triple transformation – in body, soul and spirit – which will lead him to the apotheosis of the birth of his spiritual body, in a luminous burst of exuberant joy.

4.3. THE MELODIC DRAWING

Ravel drew the melodic design of *Bolero* with two themes built, respectively, on two motifs. Theme A is presented without any accidental alteration, within the scope of a major ninth, through a syncopated narrative which, originating from the tonic (C), circulates through the dominant (G), the subdominant (F) and the supertonic (D), then returning to the tonic.

The theme develops along 16 bars – (A1 8 + A2 8), ($1 + 6 = 7$) – throughout the 42 notes in A1 and 59 notes in A2, that is to say, with a total number of 101 notes. Theme A presents itself 9 times, so the numerical factor of its intervention results in nine hundred and nine ($9 \times 101 = 909$), being 9 the sum of its factors ($9 + 0 + 9 = 18$ and $1 + 8 = 9$).

It should be noted that melody A starts and ends in the tonic (C) and emerges from its core, as if it were an emanation that sings from within the liquid horizontality of the melody unfolded in the time of the becoming, the nature of its condensed state within the solidity of the tone in the fundamental.



FIGURE 2. Theme A1. *Bolero*: bars 5-12.

SOURCE: Own elaboration.

In the first section of the melody (A1), it emerges from the tonic and prolongs itself in its surroundings (bars 1-2), magnetized by the attraction that the harmonic pole, from which it comes, exerts on it. From its first phrase, A1 shows the perfume of the modality that inspires it: the Lydian scale of F within the key of C major. It is thus announced in the second bar by the A note in the melody, in spite of remaining at the tonal base of C. A shift directs it towards the dominant (G) (bars 3-5), to take up again the tonic (bar 6) and establish itself in the dominant (bars 7-8), giving the sensation that the theme has not completed its journey and that it will go on.

FIGURE 3. Theme A2. *Bolero*: bars 13-21.

SOURCE: Own elaboration.

The second section of the melody (A2) is built on the dominant (G): it evolves from the dominant of G (D, bars 9-10), arrives at the subdominant of C (F, bars 11-12), and returns to the dominant of G (D, bars 13-15) and then to the dominant of C (G, bar 16), finally reversing to the “musical home” of the tonic (C), the source from which A1 emerged at the beginning. It is interesting to point out that the modal perfume in the Lydian scale of F, despite the drone in G, becomes quite evident in this second part of A, when the melody is set at the subdominant (bars 11-12).

The reference to the tonic (C) is heard on 9 occasions in the interior of A1, and on 10 in A2. They are 19 “instants” of the sounding presence of the tonic in the horizontality of the melodic discourse, which do nothing but remind us of the melody’s connection to its primordial source. The impregnation of the tonic in the melody’s design shows the unfolding of the solidity of its foundational and axial value in the outcome of the melodic dimension which sings it, unfolding in time. However, it is equally interesting to notice the coincidence between the numerical value of the aforementioned presence of the C note in theme A (19, and $1 + 9 = 10$, $1 + 0 = 1$) and the synthesis of the rhythmic pulsations ($1, 018$, and $1 + 0 + 1 + 8 = 10$, $1 + 0 = 1$), in the bass of the drone, as we have previously pointed out.

Theme B is also present on 9 occasions in the course of the piece, with a numerical value of 783 notes ($87 \times 9 = 783$), giving 9 as the sum of its factors ($7 + 8 + 3 = 18$, and $1 + 8 = 9$), in consonance with the numerical value of theme A.

The two melodic motifs in theme B (B1 and B2) have an extension range of two octaves and one semitone, practically twice as much as in theme A. Its design also develops along the 16 bars, through the 43 notes in B1 and 44 notes in B2, being 87 the total number of notes which draw this melody, whose numerical value is 6 ($8 + 7 = 15$ and $1 + 5 = 6$).

FIGURE 4. Theme B1. *Bolero*: bars 41-48.

SOURCE: Own elaboration.

The melodic unfolding of theme B is not produced on the tonic (C) but rather on the drone of the subdominant (F). The sequence of the scales on which this melody is built is as follows:

- B1 a) F major scale (bars 1-4); b) F minor harmonic scale (bars 4-8).
- B2 c) F minor melodic scale (bars 9-13); d) F minor natural scale, equivalent to the C Phrygian scale (bars 14-16).

The expressive effect of this second theme is extraordinary and it would appear to fit in well with the symbolic gaze we are trying to suggest.



FIGURE 5. Theme B2. *Bolero*: bars 49-57.

SOURCE: Own elaboration.

In theme B, it is obvious that C behaves as a tonic from the harmonic base, but it is nevertheless also evident that in this part C assumes the dominant role of F, since the melody is built on four scales of F. This is what makes it lose resolution weight during the displays of theme B, in spite of the omnipresence of the tonic (C) in the harmonic base of the orchestral discourse, since the melody, relegated to the key of F, sings with a different colour from the one in the fundamental, whose dominant is precisely C. This duplicity in colour seems to confer upon theme B a mysterious touch.

The melodic distancing of the tonic in theme B becomes explicit from the very first note: B flat. This note, B flat, is repeated 5 times in the first phrase of theme B, 4 in the second, 3 in the third and none in the fourth, its presence diminishing until fading away as the melody gets closer to the tonal source (C) and coming to an end as it returns to its “musical home”.

This detachment from the source, which B flat prompts from the first phrase in theme B, practically turns into a rupture upon reaching the melodic limit of D flat, just to strike 11 times inside the second phrase in theme B, before descending to E (the degree VII of F, and the III of C as well). It is worth noting that the melodic scope between the initial and final notes of the two phrases in theme B1 is that of B flat-E, a diminished 5th, the celebrated tritone to which medieval theoreticians gave the name of “diabolus in musica”.

The second melodic motif of theme B begins very much like A2, from note D. Its phrases draw a progressive descent by successive intervals in the natural scale of F minor (C Phrygian), to its reunion with the tonic of the fundamental tone (C).

A symbolic gaze would lead us to read in this melodic drawing in theme B

an evocative retreat of Man from his divine source deep within himself, driven by the unconscious energies pulsating from his animal soul, which now dominate or control him. His level of withdrawal – described in the myth of the Fall (Gn 3) – comes close to the levels of fracture – represented in the melody by D flat – but the progressive descent towards the depths of his conscience traces the path of the inner mutations which will guide him back to the ontological source that, from the tonic, sustains him and vivifies him.

In previous lines, we were suggesting that the numerical value of this melody could be represented by the number 6, a figure that, as René Allendy points out, “marca esencialmente la oposición entre la criatura y el creador en un equilibrio indefinido”.³²

If in theme A we heard Man linked to his divine source – Man on the seventh day of Creation (Gn 2:3) – in theme B we can perceive the echo of Man exiled from himself and coated by “tunics of skin” (Gn 3:21), that is to say, moved away from his ontological rules and driven by the unconscious pulsations of his animal soul, in a state of regression on the sixth day of Creation.³³

It is also interesting to observe that when *Bolero* introduces the last display of theme B in the interior of the ritornello before the final burst, it modifies the second part of the melody and styles it throughout the 91 notes (bars 324-340), with which its numerical value comes to achieve plenitude ($9 + 1 = 10$ and $1 + 0 = 1$) as a result of the encounter with the tonic of the final bar. Thus, its numerical value rejoins the numerical value in theme A.

The melodic synthesis in theme B may also be read in a summarized way, in the cadence of bar 339. Just as we pointed out earlier, when dealing with the orchestral density of the cadence in the ritornello, the melodic collapse which draws the design could be read as the last symbol of the disintegration of the animal body before reaching its sublimation within the spiritual body. All this leads us to make some brief considerations on the timbre of the luminous journey of *Bolero*.

4.4. THE ORCHESTRAL RAINBOW

For the orchestration, Ravel used a tonal palette of 45 colours, made of 17 wooden, 12 brass, 9 percussion, 2 harmonic and 5 string instruments. It should be considered that the number of instruments with which Ravel depicts the sounding skin of this dance agrees with the number which Hebrew gematria attributes to Adam (אָדָם), all of Humankind, men and women: $45 = (\delta) 40 + (\tau) 4 + 1 (\aleph)$.³⁴

32. René ALLENDY, *Le symbolisme des nombres*, Paris, 1948, quoted by Jean CHEVALIER and Alain GHEERBRANT, *Diccionario de los simbolos*, Barcelona, Herder, 1991, p. 919-920.

33. Cf. Annick de SOUZENELLE, *Pour une mutation intérieure*, Paris, Dervy, 2003; *Per una mutació interior*, Barcelona, Claret, 2019, p. 64-68.

34. Annick de SOUZENELLE, *Alliance de Feu: Une lecture chrétienne du texte hébreu de la Genèse*, vol. I, Paris, Albin Michel, 1995, p. 57.

As *Bolero* advances, the timbral range of the drone's harmonic unit is coloured and expanded in every new section. New instruments and new octaves overlap their colours, as if all the octaves unfolded by the instruments were embraced in the nuclear unison of the harmonic fundamental cell. Indeed, it is a true timbral wonder!

From the flute, the instrument closest to the acoustic purity of the sinusoidal line, up to the final tutti, Ravel manoeuvres the instruments in the orchestra, sometimes as soloists and at other times in pairs or groups, seeking to obtain new colourations by mixing their timbres. On the other hand, when he presents an instrument as a soloist, he usually does so by exploring an unusual tessitura in it, with the aim of painting new ranges of timbre colours. The treatment Ravel gives to instruments makes this piece a veritable treatise on orchestration.

The sum of colours in the rainbow is represented in the timbral arches of the successive advancing curves, coloured with new timbres within a luminous spiral rising with new chromatic and harmonic octaves from the nucleus of the sinusoidal foundation towards the birth of light in the last bar.

BY WAY OF A CONCLUSION

Claudio Naranjo's hypothesis that *Bolero* was inspired by a Sufi dance is quite plausible, considering the symbolic aspects which we have described as impregnating its rhythmic, melodic, harmonic and timbral parameters.

The ballet dances all the time on the divine gravitational nucleus that supports it and that is conveyed in the rhythmic cell, prompting its pulsations from beginning to end, as in the weight of the harmonic base which indefectibly sustains it. The melody is born from the tonic in theme A, departing from it thereafter, in theme B, like a symbol of the regression in human nature – dominated by the pulsations of Man's animal soul – to the state of the sixth day, according to the myth of the Exile.

The reiterative return and resurgence of the melody from the pole of the tonic unfolds the structure of a melodic cone which ascends, coloured with new frequencies, in a sonorous helicoidal spiral, leading to the luminous metamorphosis of a perfect and absolute realization. The ascending progression of the set of parameters in *Bolero* turns it into a sort of sonorous metaphor of the spiral which draws the swirling in a Sufi dance. Analogously, such a metaphor could be related to the vibrational energy column that ascends from the foundation *chakra* to the most subtle one, the crown *chakra*, summit of the head or "womb to the skull" and door of the "path" of the Taoist tradition,³⁵ where the germination takes place and the divine seed flourishes in Man.³⁶

35. In Greek mythology, Pallas Athena was born from the head of Zeus. Annick de SOUZENELLE, *La Parole au cœur du corps*, Paris, Albin Michel, 2017, p. 81; *La Paraula al cor del cos*, Barcelona, Fragmenta, 2021.

36. "La lumière est la rencontre d'Elohim et de יהוה. Le lieu de la rencontre est l'Homme qui, s'il coordonne et catalyse, accomplit le divin ; et la lumière éclate": "Light is the meeting of Elohim

From the perspective of this symbolic gaze, the conception of *Bolero* also brings about a musical evocation of the most mysterious journey to which Humankind is invited: that of the germination of the Divine Image, according to which Man was created, and which would lead him to the acquisition of the spiritual body, alluded to by Saint Paul in 1 Cor 14:44.

In the resurrection of Christ, Christian tradition exemplifies the archetype of the assumption of this glorious body.³⁷ The Tibetan Buddhist tradition also gathers the testimonies of the transfer of sanctified lamas to the “coming world”. Just as was quoted by Eric Edelmann, “su cuerpo se reabsorbe en la esencia luminosa de los elementos que lo han creado y su cuerpo físico se funde en luz y desparece completamente”.³⁸ Ravel’s *Bolero* seems to sing, under the beat of the divine essence of the Universe which guides Mankind into reaching the One, who, as Louis Cattiaux said, “can only be named by silence”.³⁹

BIBLIOGRAPHY

- ALEXJANDER, Susan; DEAMER, David. “The infrared frequencies of DNA bases: Science and art”. *IEEE Engineering in Medicine and Biology Magazine*, 18, 2 (March-April 1999).
- AUGUSTINE, Saint. *De Musica*. I, II, 2. In: *Obras completas de San Agustín*. Vol. XXXIX. Madrid: BAC, 1988.
- BALLESTER-RODÉS, Manel; CARRERAS-COSTA, Francesc; VERSYP-DUCAJU, Teresa; BALLESTER-RODÉS, Montserrat; MEHTA, Davendra. “Field dynamics in atrioventricular activation. Clinical evidence of a specific field-to-protein interaction”. *Medical Hypotheses*, 124 (2019), p. 56-59.
- BLAKE, William. *The marriage of heaven and hell*. Ed. G. Keynes. London: Oxford Univ. Press, 1975.
- CARRIÓN MARTÍN, Elvira. “El origen de la escuela bolera. Nacimiento del bolero”. *Danzararte: Revista del Conservatorio Superior de Danza de Málaga*, 12 (2019), p. 30-44.
- CATTIAUX, Louis. *Le message retrouvé*. Paris: Dervy, 2015. [First edition, Paris: Denoel, 1956] [English edition, *The message rediscovered*. Brussels: Beya, 2005; Catalan edition, *El missatge retrobat*. Barcelona: Claret, 2007; Spanish edition, *El mensaje reencontrado*. Barcelona: Herder, 2011]

and ויהי. The place of encounter is Man who, if he coordinates and catalyses, fulfils the divine; and light bursts forth.” Annick de SOUZENELLE, *Alliance de Feu: Une lecture chrétienne du texte hébreu de la Genèse*, vol. 1, p. 106-107.

37. “Christ, for his part, belongs to all peoples, fecundates all religions and – as a divine seed in the heart of every Adam – is in all Men and makes the heart of the world beat.” Annick de SOUZENELLE, *Pour une mutation intérieure*, Paris, Dervy, 2003; *Per una mutació interior*, Barcelona, Claret, 2019, p. 51.

38. Éric EDELMANN, *Jesús hablaba arameo*, Barcelona, Obelisco, 2006, p. 377.

39. Louis CATTIAUX, *The message rediscovered*, book XIII, verse 28; cf. *El missatge retrobat*, XIII, 28.

- CHEVALIER, Jean; GHEERBRANT, Alain. *Dictionnaire des symboles*. Paris: R. Laffont, 1969. [Spanish edition, *Diccionario de los símbolos*. Barcelona: Herder, 1991]
- DURING, Jean. *Musique et extase: L'audition mystique dans la tradition soufie*. Paris: Albin Michel, 1988.
- EDELMANN, Éric. *Jésus parlait araméen*. Paris: Relié, 2006. [Spanish edition, *Jesús hablaba arameo*. Barcelona: Obelisco, 2006]
- EMOTO, Masaru. *Messages from water*. Tokyo: Hado Kyoiku Sha Co., 1999. [Spanish edition, *Mensajes del agua: La belleza oculta del agua*. Barcelona: La Liebre de Marzo, 2003]
- GREGORI I CIFRÉ, Josep Maria. "El canto de las sirenas: reflexiones en torno a un símbolo musical". In: VEGA RODRÍGUEZ, Margarita; VILLAR-TABOADA, Carlos (eds.). *Música, lenguaje y significado*. Valladolid: SITEM-Glares, 2001, p. 221-231. [Catalan edition, "El cant de les sirenes". In: *Música Caelestis: Reflexions sobre música i símbol*. Tarragona: URV-Arola, 2012, p. 73-84]
- "L'armonia delle sfere, simbolo di un ascolto contemplativo". *Materiali di Estetica*, 7 (2002), p. 211-221. [Catalan edition, "L'harmonia de les esferes". In: *Música Caelestis: Reflexions sobre música i símbol*. Tarragona: URV-Arola, 2012, p. 61-71]
- "¿A qui aplaudim al final d'un concert? Reflexions sobre el fenomen de la inspiració". In: ABELL, Arthur M. *Música i inspiració: Converses amb Brahms, Strauss, Puccini, Humperdinck, Bruch i Grieg*. Barcelona: Fragmenta, 2020, p. 9-26. [Preface] [Spanish edition, *Música e inspiración: Conversaciones con Brahms, Strauss, Puccini, Humperdinck, Bruch y Grieg*. Barcelona: Fragmenta, 2021]
- HOOGHVORST, Emmanuel d'. *Le fil de Pénélope*. Paris: La Table d'Émeraude, 1996. [Catalan edition, *El fil de Penèlope*. Barcelona: Claret, 1999]
- HUSEMANN, Armin. *The harmony of the human body*. Edinburgh: Floris Book, 1994.
- *Human hearing and the reality of music*. Massachusetts: Steiner Books, 2013.
- JÁMBLICO. *Sobre la vida pitagórica*. XVIII, 82. In: HERNÁNDEZ DE LA FUENTE, David. *Vidas de Pitágoras*. Vilaür: Atalanta, 2014, p. 281.
- MAMAN, Fabien. *The role of music in the twenty-first century*. Redondo Beach: Tama-Dö Press, 1997.
- NARANJO, Claudio. "Forma significativa en el Bolero de Ravel". *Revista de Música, Arte y Proceso*, 8 (1999), p. 21-26.
- *La música interior: Hacia una hermenéutica de la expresión sonora*. Barcelona: La Llave, 2015.
- NIKOLSKY, Aleksei. "¿Cómo funciona la emoción musical?". In: CASCUDO, Teresa (ed.). *Música y cuerpo: Estudios musicológicos*. Logroño: Calanda, 2015, p. 211-240.
- Origène: *Homélies sur la Genèse*. Paris: Les Éditions du Cerf, 1976. (Sources Chrétiennes; 7bis)
- OSCHMAN, James L.; OSCHMAN, Nora H. "The heart as a bi-directional scalar field antenna". *Vortex Science and Technology*, 2, 121 (2015).
- REZNIKOFF, Igor. "On primitive elements of musical meaning". *The Journal of Music and Meaning*, 3 (2004-2005), section 2.3.
- SOUZENELLE, Annick de. *Alliance de Feu: Une lecture chrétienne du texte hébreu de la Genèse*. Vol. 1. Paris: Albin Michel, 1995.

- SOUZENELLE, Annick de. *L'arc et la flèche: Merveilles de l'Éros*. Paris: Albin Michel, 2003. [Catalan edition, *L'arc i la fletxa: Meravelles de l'Eros*. Barcelona: Claret, 2016]
- *Pour une mutation intérieure*. Paris: Dervy, 2003. [Catalan edition, *Per una mutació interior*. Barcelona: Claret, 2019]
- *La Parole au cœur du corps*. Paris: Albin Michel, 2017. [Catalan edition, *La Paraula al cor del cos*. Barcelona: Fragmenta, 2021]