SENSORIAL AND TEMPORAL INTERCONNECTIONS IN THE MESSAGE OF ARTISTIC COMMUNICATION

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Abstract: The paper looks over some cross-cultural and cross-modal hypostases of art reception. Correspondences, quest for meaning and natural or cultural substitution are adjacent to some less known sensorial particularities which, accidentally or not, are mirrored in cultural projections too. The accustomed use to characterise a visual object by hearing terms or vice versa opens to more subtle connexions between senses and brings again in the core of opens a discussion regarding connexions between senses with connotations as well psychological as cultural. The (real) synaesthesia and its opposite (fictitious) sensorial split both find in cultural history a common sphere which provides meaning and inspiration for art creators. A rather brief mention of some temporo-spatial distortions brings on the issues of the contemporary artist and, hopefully, opens a perspective for a further debate.

Keywords: meaning, human brain, synaesthesia, cross-cultural correspondences, time-space perception

The art perception's mechanisms that involve interactions between different sensory modalities, be they cross-modal approaches or temporo-spatial deviations are the subject of recent preoccupations among scientists. One of the main discussions upon the topic refers to the origin of these transmutations, namely whether they come from a neurophysiologic function, or they are just cultural artefacts, which determined in time a reflection in brain activity too. Indeed, analogies and/or transpositions in a different sensorial modality are closely bound to the evolution of art in society. In traditional cultures, any artistic action becomes subject of symbolic interpretation, aiming at establishing an unwavering signification.

The quest for a stable meaning was and still remains the ultimate driving force for art's comprehension and acknowledgement. An empiric observation led to the ascertainment that the need of symbolic translation is inversely proportional to expertise. The musical life in the 19th Century offers more than one examples for. The musicians treated with condescension, irritation, or derision the audience's insistent preoccupation to find a suitable meaning for a musical piece. It is well-known by musicians the episode when Ludwig van Beethoven was asked the umpteenth time "what did you intent to express by this sonata?" He replied sarcastically: "What does it mean? Exactly this!" And he played again the whole piece. Frédéric Chopin watched amused the feverish attempts to find titles or scenarios for his works, and Franz Liszt, although he was one of the promoters of the program music, had never created scenarios or metaphors to "explain" his music. The Faustian scenario attributed to the *B minor Sonata* was entirely fabled by his followers. Liszt never said that it might have any program[1]. The term "absolute music[2]" seemingly coined by Richard Wagner designs a music without a scenario, object, and poetical purpose. The superiority of the word over the sound triggered febrile debates among theorists and philosophers of culture in the 19th Century. It had been different conceptions regarding the hierarchy of Arts: Johann Gottfried Herder or Arthur Schopenhauer regarded music of the pinnacle of the arts, considering the invisibility of sound a mark of spirituality, while Immanuel Kant, for instance, believed that music is "more enjoyment than culture" because of its lack of conceptual content. Wagner, an advocate of

[1] Keneth Hamilton, *Liszt: Sonata in B Minor*, Cambridge: Cambridge University Press, 1996, p. 28
[2] See the critical writing of Carl Dahlhaus: *The Idea of Absolute Music* (orig. Kassel, 1978, English version Chicago/London 1989) Ch. 10

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the presence of word amidst music, have reversed an old Christian precept which put music on the highest level: "where words end, music begins", claiming that: "Where music can go no further, there comes the word […] the word stands higher than the tone[3].

Yet, beyond any symbolic, poetic and philosophical interpretation, musicians used liberally visual terms to describe technical aspects of music as: up, down, high, low, thick, coloured etc. The perception of a "musical space" is widespread – and not only among non-professional audients – even if it has no any physical reality. Even if the rejection of the idea of musical space was firmly pioneered by Schopenhauer or Igor Stravinsky, the last defining music just as a chrononomy[4], the spatial analogies are part of the average language for music. The persistency and widespread of cross-modal sensorial oscillation in art perception process infer that they might rely more on an internal structure of the human brain, than on deliberate contrivances built during cultural history[5]. The need to tie music not only to words, but also to visual effects provided, beyond metaphorical analogies, a lot of technical inventions. Isaac Newton supposed that musical tones and colour tones shared common frequencies, a hypothesis retrieved by Goethe in his book *Theory of Colours*. In the chapters referring to the relation between music and colours (747-750), Goethe stated: "Colour and sound are both referable to a higher formula" [6].

The cross-modal phenomenon closest to the hypothesis of its natural origin is synaesthesia. Synaesthesia is defined as a perceptual phenomenon in which stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in one or more sensory or cognitive pathways. This perceptual feature might be sometimes provoked by brain lesions or use if hallucinatory drugs, but one can hardly reduce it solely to pathologic states. A synaesthete "may feel the shape of the melody, the aroma of timbre or the taste or colour of harmony"[7]. Obviously, nowadays there are a lot of recent papers treating cross-modal phenomena through the lens of the Cognitive Sciences. The new MRfI technologies have proven to be alluring for this field too[8]. They permit to see the brain activity in real time and hence to sketch a more comprehensive map of the receptive brain. Today cross-modal perception, integration and plasticity are increasingly studied in neuroscience to gain a better understanding of the large-scale and long-term properties of the brain.

We have to mention a basic difference between cross-modalities as educational means for enhancing memory and the spontaneous phenomena, which define more accurately synaesthesia. In spite of any scientists' attempt, synaesthesia still remains an ambiguous topic, which rather calls for description than for a rigorous framing. This might come from multiple causes. One, probably the most frequent relies on the important differences between subjects. Moreover, synaesthesia does not remain constant during the subjects' life. There are several forms; some subjects have multi-sensorial synaesthesia, other, the most numerous point out just the sound-colour association. And finally, almost never the sound-colour correspondences are identical. Scriabin criticized the coloured hearing of his friend, the composer Rimsky Korsakov, as "being artificial", because he reported different cross-modal associations. For instance, whereas to Scriabin the key of F# major

[3] Lydia Goehr, *The Quest for Voice: Music, Politics and the Limits of Philosophy*, Berkley, Los Angeles, London: University of California Press, 1998, p. 112
[4] Igor Stravinsky, *Poetics of Music: In the Form of six Lessons* Cambridge MA, London: Harvard University Press, 2003 p. 28
[5] Crétien van Campen, "Synesthesia and Artistic Experimentation" in: Psyche: *An Interdisciplinary Journal of Research on Consciousness* 3 (6) Nov. 1997, p. 9
[6] Goethe, Johann Wolfgang von (1810) *The theory of colours* (Rom translation) Iaşi, Ed. Princeps, 1995, pp. 207-208
[7] Svetlana, Rudenko, Maria José de Córdoba Serrano (2017) "Musical-Space Synaesthesia: Visualisation of Musical Texture" in: *Multisensory Research* No. 30 p. 280
[8] Among dozens of publications, e.g. Bradley W. Vines *et alii*, "Cross-modal interactions in the perception of musical performance" *Cognition* No. 101 (2006) pp. 80–113; Julia Simner *et alii* "Synaesthesia: The prevalence of atypical crossmodal experiences" in: *Perception*, No. 35 (8) 2006, pp. 1024-1033; Sagiv Noam, 2005 "Synaesthesia in perspective", in *Synesthesia: Perspectives from Cognitive Neuro-science* Eds L C Robertson, N Sagiv New York: Oxford University Press, pp 3-10; Daniel J. Levitin, & V Menon, "Musical structure is processed in 'language' areas of the brain: A possible role for Brodmann area 47 in temporal coherence" in: *Neuroimage*, 20/2003, 2142–2152 etc.

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appeared violet, to Rimsky Korsakov it appeared green. Scriabin had even an explanation for this inadvertency: Korsakov might be influenced by the use of this key in pastoral music, hence the association with the green grass and leaves[9]. This episode is strengthening not just the extreme individuality of this feature, but also its unshakable reality for the subject itself. A disconcerting issue is given by some experiences which revealed the existence of a so-called visual imagery stirred by sounds even from blinds from birth. Also the colour-blinds who accuse synaesthesia perceive textural differences which could be assimilated with colours. It might imply that our phylogenetic imagery could be deprived of sensory support. For now, these researches are now just in phase of finding[10]. Richard E. Cytowic in his book *The Man who tasted Shapes* (New York: Putnam & Sons 1993) has formulated some general criteria to define synaesthesia: 1) involuntary but elicited, 2) projected, 3) durable, discrete and generic, 4) memorable, 5) emotional and noetic[11].

Some important artists have confessed in the last two centuries to have this issue, namely a visual-hearing concomitancy. Among them, Franz Liszt, Nikolai Rimsky-Korsakov, Alexandr Scriabin, Vasili Kandinsky and Olivier Messiaen are the best known. It seems that Kandinsky's abstract art is related with his multi-modal experiences, which have seriously preoccupied him. The artist presumed that one can feel the multi-sensory consonances and dissonances in simultaneously performed colour movements, musical movements and dance movements[12]. Arnold Schoenberg who has also participated to Kandinsky's cross-sensorial experiments has created his "*Klangfarbenmelodie*" – a musical technique that involves the splitting of a musical line or melody between several instruments, rather than assigning it to just one instrument (or set of instruments), thereby adding colour (timbre) and texture to the melodic line. "In a musical sound (*Klang*) three characteristics are recognized: its pitch, colour [timbre], and volume. [...] The evaluation of tone colour (*Klangfarbe*), the second dimension of tone, is thus in a still much less cultivated, much less organized state"[13].

It is interesting the fact that the confessions about synaesthesia are not older than two centuries. One cannot assume that this feature started just then; most likely the subjects living in remote times avoided to confess such oddity. The significant change in mentality referring to the artist that have been brought by the Romantic epoch has highlighted the "special", the "unaccustomed" personality. A new mythology replaced the luminous Apollo with the obscure and mysterious Saturn[14]. The Illuminist objectivity mirrored in an Apollonian musical message which ruled during the last decades of the 18th century began to fade. The much too recent secularization of the society gave signs of decline and the need to find again a transcendental spirituality gave birth simultaneously to a reinforcement of the traditional religions, together with creation of new cults and revival of old superstition. In the Romantic century to be odd was no more a reason for hiding, but a kind of confirmation of the artist condition. We must also mote a peculiar coincidence: all the known artists having synaesthesia had intense preoccupations for mysticism, occultism or esoteric[15].

The cultural reverse of cross-modal conditions dates back to ancient times. In an inverted chronological order, we are now witnesses to a multitude of sound-light-colour effects, used in musical shows, visual art exhibitions or happenings, not to mention other art form more or less innovative. Before the domination of electronic technology, there were built a number of devices meant to put together music and visual effect, as the colour organ invented by Scriabin for his work *Prometheus: Poem of Fire* (1915) – the so-called "*clavier a lumière*". Inventors like Jameson,

[9] C. van Campen, *op. cit.* p. 11
[10] Vilaynur Ramachandran & E.M. Hubbard "Synaesthesia—A Window into Perception, Thought and Language" in*: Journal of Consciousness Studies*, 8, No. 12, 2001, p.11, 27
[11] C. van Campen *op. cit.* p. 10
[12] *Ibidem* p. 12
[13] Arnold Schoenberg, *Harmonielehre* (*Theory of harmony*), Vienna: Universal-Edition, 1966 p. 503
[14] Veronica Gaspar, *My Papers* A bilingual volume (under press) p. 196
[15] Greta Berman, „Synesthesia and the Arts" in: *Leonardo*, Vol. 32, No. 1, 1999, p. 16

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Kastner, Bainbridge, Bishop created devices that could produce music and colour simultaneously on the basis of tone-colour correspondence schemes. Alexander Wallace Rimington patented the name "*colour-organ*" in 1893, and had considerable success in concert halls with his colour-music performances of compositions of Wagner, Chopin, Bach and Dvorak. In the 18th Century the Jesuit Louis-Bertrand Castel manufactured a "*claveçin oculaire*" which had a certain impact over his contemporaries.

The correspondences musical scale-colour were part of an ancient tradition, as part of broaden signification grills. In Early Modern Europe there were some attempts to systemize several tables of correspondences that aimed to establish a novel Ethos, nearer to the expression of sentiments issued from the Epoch of Affects. The musical correspondences created (or maybe, collected) by Marc-Antoine Charpentier, Jean Phillipe Rameau or, later E.T.A. Hoffmann and Albert Lavignac did not directly refer to colours, but to feelings, states of mind etc.[16]. These meaning-tables did not coincided; still a certain tradition led to prefer some musical modes "to express" a specific feeling. Nevertheless, these analogies could bear an unconscious influence of the average use of tonalities. For instance, the epithets "pastoral, rural" used by Albert Lavignac to design F major is more likely related to the current use of this key for this kind of repertoire, starting with Beethoven's Pastoral Symphony[17]. A direct correspondence between sound and colour starts with Isaac Newton, to be completed by Goethe[18] as we noted above. In the *Conversations with Eckermann* (March 23, 1829) Goethe stated: "I have found a paper of mine among some others in which I call architecture 'petrified music'. Really there is something in this; the tone of mind produced by architecture approaches the effect of music"[19].

Here we meet no more the expression of a cross-modal contamination, but a statement issued from a specific culture. We might consider, or not, that the cultural facet of perceptual cross-modalism is coming from the ancestral art-syncretism, which might also left neurological atavisms. Yet such hypothesis, however appealing could it be from a theoretical perspective, does not fall in support of a scientific demarche. The differences between these European meaning-tables are more salient when comparing them with the immutable signification's grills lasting hundreds of years in China or India. In Europe such signification-tables did not have neither stability nor complexity as the Asiatic ones, a part the Antique Greek's *Ethos*, where some important philosophers as Pythagoras, Aristoxenus of Tarentus or Plato achieved a rather stable connexion between musical modes and moral qualities. The upsurge of the emotional side in art communication, in the late "Epoch of Affects" led to the revival of antique meaning correspondences and of the less remote medieval rhetorical formulas in music. Yet, the cultural complexity of Pre-modern Europe and the endemic tendency to ceaseless change[20] made happen imperfect and inconsequent these attempts to systemize musical communication; attempts which eventually have been reduced to simple intellectual games.

In traditional Asia the cultural side of cross-modal interferences led to a supreme model, which have influenced not just art communication, but the entire social structure. In India the primary cause of universe's creation was the "fundamental vibration *sa*". Therefore, music and its sub-compounds might led to discover "the ground sound which corresponds to our deepest nature"[21]. The nine vowels, two principal and seven secondary, are related to musical notes, planets, colours etc. These assignments are not arbitrary, according to Alain Daniélou, but issued from

[16] *Ibidem* p. 156
[17] Jean-Jacques Nattiez, *Bases of a Musical Semiology*, Paris: Union Générale d'Éditions, 1975, p. 155
[18] see note 6
[19] Johann Peter Eckermann & Frédéric Jacob Soret, *Conversation of Goethe with Eckermann and Soret*, Vol. II, London: Smith, Elder & Co. 1850, p. 146
[20] Veronica Gaspar, "Culture, Cultures, Apprenticeship", in *JRSL* No. 6, Iulian Boldea (Ed.) Târgu-Mureş: Arhipelag XXI, 2015, p. 38
[21] Alain Daniélou, „MANTRA. The principles of language and music according to Hindu cosmology", *Cahiers d'ethnomusicologie* 4, 1991, p. 69

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consistent observations of common characteristics, calling for cosmologic principles, related to the intrinsic nature of the world[22]. Both music and words were considered parts of a same integrator principle. "The parallelism is obvious between musical sounds and vowel-sounds of the articulated language. Both have a same name: *svara*"[23].

The Antique China built a general system based on digit 5, and on the five tones of the traditional Chinese musical scale. Unlike India, where the correspondences started from sounds in relation, the Chinese created a projection in colour, seasons, fundamental elements, until social structure etc. based on isolated sounds. Confucianism was created half millennium earlier than the Christian era, during *Zhou* Dynasty (1045 -256 BC). It have had a significant role in the development of the musical culture, not only by raising music at the highest level of the human knowledge, but also by the creation of the principle of the five steps[24]. "Correct" music according to *Zhou* concept would involve instruments correlating to the five fundamental elements and would bring harmony to nature. The five types of *chi* (vital energy) comprised Five Elements, Five Phases, the Five Agents, the Five Movements, Five Processes, the Five Steps/Stages, the Five Celestial Emperors and the Five Planets. The same system was also used for describing interactions and relationships between phenomena unified under the educational system of the Five Arts (*Feng shui*, Astrology, Medicine, Military strategy, Martial Arts)[25]. It is obvious that people educated in this way could and still can easily associate a specific colour with a specific sound.

In spite of the severe differences between the cultures of both Continents, the Asiatic tradition meet the tradition of Ancient Europe in the intellectual perception of music through non-musical analogies. The gap, which singularized Europe in space and in time occurs after Renaissance along with the development of arts as autonomous fields. Incidentally, in the same epoch began also the first mentions upon cross-modal perception.

A reverse phenomenon than cross-modalism can be found in a novel by H.G. Wells, wrote in 1895: "*The Remarkable Case of Davidson's Eyes*". In this singular little story Wells describes the case of separation between view and hearing. It is one of the earliest descriptions of "remote viewing": a young man suffers an electric accident, which provokes a terrible sensorial detachment between his body keeping all his senses but the sight, which was projected in the opposite part of the world. His "eyes" assists impuissant to the drama of a shipwreck, unable to act or to be heard, while his hearing, touch etc. is in London. This particular "remote view" is unlike the imagery described by psychics, spiritualists or persons under the effect of hallucinatory drugs, because his eyes saw a real event, occurring in real time.

The most frequent phase-shifts in art reception are related to time. A whole literature raises from the issue of subjective time and of events which can define and value it. The actors are rolling again and again a same time slice and visual artists have petrified in their works the time necessary for creation. In music, the performer lives in a time and plays/sings the music of another. The pianist Dinu Lipatti advocated the priority of the time of direct transmission over the composer's time[26] and its hypothetical aesthetics. Michel Imberty observed that music itself goes through several temporo-spatial hypostases. It refers to the cultured music that suffer a non-temporal phase: the written score[27]. A score, as well as a musical analysis is a kind of "reification of the musical time"[28]. Therefore the performance might be conceived as a temporalization of the space of the score and also as a dissolution of reification.

[22] *Ibidem*, p. 78
[23] *Ibidem*, p. 76
[24] V. Gaspar, *My Papers*… p. 243
[25] Idem, *Treaty of Comparative Musicology*, Paris: Hermann, 1959, p. 87
[26] Dragoș Tănăsescu, Grigore Bărgăuanu: *Dinu Lipatti*, Bucharest, Grafoart, 2017 p. 116
[27] Michel Imberty, "Hyposthases of Time in Musical Creation" in: *Musicae Scientiae*, Vol. 8 No. 2, 2004 p. 8
[28] *Ibidem* p. 10

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The ambiguous relation space-time in art perception led Gaston Bachelard to state: "In its countless alveoli, space contains compressed time"[29]. To "sink" into an art work means to escape from the empiric time. The painters from Middle Age until Modern Times placed the characters in their familiar time. A man ploughing a field in Peter Bruegel's *Landscape with the Fall of Icarus* is dressed like a peasant from the 16th Century. Several *Nativities* painted by Flemish artists take place in a winter scenery. And such temporal incongruities continue since the 20th century in movies, operas and theatre plays even if, this time it is no more a matter of ignorance of the historical time of the piece, but a deliberate artefact of the director. For instance: the 1996 version of *Hamlet* in Kenneth Branagh's movie and, in the same year another Shakespearian adaptation, *Romeo and Juliet* made by Craig Pearce under the direction of Baz Luhrmann place sceneries, costumes and actors' gestures in a different time. Nevertheless, beyond the temporal deformations, which can be seen in the above-mentioned contemporary works, any artistic reception is assuming somehow temporal alterations. "The reverie of musical tensions may be compressed or dilated in the post-perceptual reality, requesting neither the necessary time to re-compose stable referents, nor a rigorous narrative succession"[30].

The relation time-space in Art is a truly rewarding topic, especially nowadays. The technological progress in the last century determined significant mutations in art perception. For instance, the graphic reproductions dissolute geographic frontiers, as well as television and Internet. Since the invention of the gramophone, the music audient can stop the time and recompose any musical epoch whenever the listener wants. The listeners from Baroque, for instance, have no alternative than the music of the present time. Even the church music, which was always older than the everyday music, was performed in the real time of the audience. The time-distortions topic deserves a broaden approach; yet we might here mention that the contemporary art consumer has more means to manage both time and space in work's perception. To the extent that time and space become more controlled by the receiver than by the creator, we might imply that the cultural responsibility of the latter increases. To adapt to the audience's demands can be just a temporary compromise. The contemporary art creator has to face many temptations as the fear to be swallowed by the anonymous mass in an overcrowded public space, the temptation of special effects due to technological upgrading to which we can add the loss of control over time. Thus in an epoch, which is very interesting for sociologists and art historians, the artist seems caught between art receivers and technology. No further solution can be found either in the too much used quest for novelty or popularity. Maybe the choice of most part of art receivers in the artistic forms of the past might suggest a path toward our basic cultural core, which sometimes is revealed by symbolic reminiscences and fortuitous connections.

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[30] M. Imberty *op. cit.* p. 13

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