Museum A/V Branding

Daniele Rossi[(✉)] and Alessandro Olivieri

School of Architecture and Design,
University of Camerino, Camerino, Italy
Daniele.rossi@unicam.it

Abstract. This article aims to illustrate the potential of the combined use of visual branding and sound branding applied in museums. After discussing sound branding and its use in areas related to the marketing of industrial products, it will deal with the contribution of sound design to visual communication, the synaesthetic relationships that link visual and auditory perceptions and how these can amplify the message you want to communicate. The case study on which the experimentation was conducted concerns the audio/visual rebranding of the tactile museum of Ancona (IT). The process of developing an audio/visual logo will be illustrated on the basis of the method identified by the Italian artist Luigi Veronesi based on the identification of a precise relationship between the diatonic scale and the chromatic scale for the visual transposition of musical melodies. The logo was then animated in order to obtain a dynamic version to be used alongside the static one, to be used on contemporary digital broadcasting channels.

Keywords: Sound branding · Sound design · Audio/visual logo · Synesthesia · Museum · Luigi Veronesi

1 Sound Branding

Sound branding (or sonic branding) is defined as the use of a melody, a song or a simple noise in order to enhance the identity of a brand.

Sound branding is able to model the emotional experience associated with a brand, define its values, keep it in the memory of the public. Unlike an image, which in order to acquire meaning must first be processed in an analytical way to reconstruct its meaning, the sound acts on a more direct sensory channel, operates very quickly and unconsciously.

The sound associated with a visual stimulus makes its perception deeper, because the sense of sight and hearing, stimulated at the same time activate a process of sensory strengthening capable of amplifying the message.

For these reasons, sound, whether structured in musical form or simple noise, has become a powerful element of design and recognition of a commercial product. It is able to evoke emotions, as well as memories far in time.

In the field of technological products, sounds are born in an integrated way in the design process and are essential in shaping the interactive experience of the end user.

Brian Eno, world-renowned composer and author of the Windows 95 audiologist, says: "Microsoft asked me for music that would inspire, universal, optimistic, sexy,

futuristic, sentimental, emotional, plus another set of about one hundred and fifty adjectives, and they concluded by saying that the song should last three seconds and a quarter".

In the automotive field, some noises produced by the engines of certain cars or motorcycles are so identifiable that for a wide audience of enthusiasts it is not necessary to see the car or motorcycle in question to immediately recognize the brand and model. Almost all major car manufacturers conclude their commercials with a sound logo, which fixes the identity of the brand in a few seconds and facilitates its persistence in the memory. In the agri-food sector, where sound/noise is closely linked to the perception of taste, this can become a distinctive element of the product. The level of specialization is such that some companies are able to control and design the sounds of food and drink to make them more appealing to the consumer (Ferreri and Scarzella 2009).

In order to verify the potential of sound branding, this article instead aims to investigate the methods of construction of a audio/visual identity project to be applied in museums. The museum object of the experimentation is the state tactile museum of Ancona, a museum where you experience the works present inside through the privileged use of touch and that, for this reason, can also and especially be used by visually impaired people.

In the museum field, in recent years, sound has become a fundamental design component for any exhibition, encouraging participation, interaction and communication of the cultural contents set up (Bubaris 2014).

A museum can potentially contain all kinds of sounds: ambient sounds, localized sounds, interactive sounds, etc. Often in the installations we find all these types mixed together, without this mix being actually designed. The resulting effect is that of noise pollution in which the distracted listener, immersed in the sound flow, is no longer aware of what he is listening to (Marchetta 2010).

This problem is even more evident in a museum space specifically dedicated to people with a specific sensory disability such as the visually impaired. The latter use the sounds of an environment to echolocate. In these spaces, the use of sounds must be carefully calibrated to generate environments that respect the principles of acoustic ecology. The buzz from the people who crowd the room as well as the audio from small and large screens that now permanently populate any museum event are real obstacles to the enjoyment of what is on display.

In the structuring of a communication system linked to a cultural institution that by statute specifically addresses a user with sensory disabilities, all the expressive codes must converge synchronously towards the objective of making this system usable by everyone.

The qualities of a project of sound and visual identity of a tactile museum, can not be solved trivially in translating the graphic sign into sound and vice versa, but in conceiving the entire project avoiding gaps in perception, as well as loads and redundancies only on some sensory channels.

2 Sound Design for Visual Communication

Among the different types of sound signs characterizing the areas of application related to advertising sound communication for a product or service, three are those around which to build a dedicated taxonomy: onomatopoeia, sounds of objects, music and jingles.

In particular, music and jingles in advertising are often complementary to visual logos, helping the latter to establish themselves in the collective imagination. The music can be manipulated from famous pieces. Based on factors of rhythmic or emotional closeness or composed specifically by sound designers (Castellano and Falcidieno 2013).

On the other hand, onomatopoeia and sounds of objects are suitable for product types centered on the promotion of products capable of activating certain sounds while they are difficult to apply for the promotion of systems and services of a cultural nature.

Therefore, music and jingle, if properly used, improve the correlation between the different graphic signs of a communication project. Sound, as well as text or an abstract or figurative graphic element, contributes to the formal composition of the project, guiding the user to its understanding. The sound can be synchronized with respect to the dynamics of the graphic elements, so as to synaesthetically accompany the vision, or arrange itself in contrast thus acquiring a sort of formal autonomy within the communicative narrative.

2.1 Synaesthetic Relations

Designing the sensory involvement of a product means examining all the qualities and considering simultaneously the synaesthetic references of which each of them is the bearer.

Visual observation alone perceptively anticipates other sensory modes. In this way, looking at an object becomes the act able to precede the multisensory perception of an object.

To facilitate the formation of synesthesias it is therefore necessary to connote the communicative artifact of stimuli belonging to a single register, provided that the user can receive the stimulus. The presence of several expressive codes linked, for example, to the senses of sight and hearing, increases the "persuasive" capacity of the message, since it forcibly induces the synaesthetic process. This is not entirely true for some categories of users who, due to particular physiological conditions, need more than others, congruent and synaesthetic sensory qualities.

The visually impaired, for example, finding the information related to the visual code inaccessible, need more than others a targeted sensory design that respects both the specificity and the unity of the senses (Riccò 2008).

It has been mentioned here how the synaesthetic process is the basis of multisensory activities caused by a particular expressive register.

At least three different uses and meanings of the term synesthesia can be distinguished. All three meanings have in common the search for congruence between the correspondences of sensations.

Synesthesia as a subjective perceptual phenomenon and therefore linked to the sensations of each individual. Synesthesia as a linguistic expression linked not to the user's subject-activity but to the intrinsic characteristic of an object, thus becoming an adjective capable of describing a physical attribute and no longer psychic or physiolo-gic.

Finally, synesthesia as a representative form. This meaning is of particular interest to those involved in the project because the concept of "associated sensations" and transfer of sensations is not aimed at a perception, but at a representation. A multimedia representation that acts on the transfer-loss of sensations from one sensory register to another or a representation in which sensations from different registers act in synchrony (Riccò 2008).

3 The Work of Luigi Veronesi

Among the artists who investigated and studied synesthesia as a representative form, Luigi Veronesi is the one who has tried most of all to write on a scientific basis a grammar capable of translating sounds into colors.

Luigi Veronesi, graphic designer, painter, photographer and director, since the early 70s has been involved in a series of works centered on the graphic translation of music into chromatic representations (Fig. 1). These works consist in the application of a particular methodology developed by the author himself, based on scientific notions and not on intuitive approaches of an emotional nature. Veronesi's reflections are based on the observation that both light and sound are undulating phenomena and for this reason can be expressed through numbers, which propagate in space according to an undulatory movement. In reality, this theory met at least two problems of Physics: the oscillations that generate colors and music are different in nature and light is a phenomenon based on the particle transfer of photons (Bolpagni 2009). Leaving aside these inconsistencies, Veronesi then considers the numerical relationship between note and note, and between color and color, and observes that the ratio of frequencies between the extreme violet and the extreme red, in the spectrum, is 1/2, exactly as in the frequencies of the musical octaves between C and C.

In essence, he has compared the diatonic scale to the chromatic scale, thus finding the wavelength of the semitones and their corresponding colour. Also in this case, the starting assumption seems to be arbitrary because it is based on the seven chromatic tonalities distinct from Newton that the artist puts into direct relation with the seven musical notes.

Starting from the completely arbitrary identification of C = violet, and then chromatically translating the entire extension of the piano keyboard, Veronesi made use of the other characteristics of the colour: saturation and luminosity. He says: "We know that due to the effect of "saturation" or "brightness" the colours can take on higher or lower aspects. Since the sound, going up towards the highest octaves, is lighter, that is, it is sharpened by 50% at each octave, the same must be done by the corresponding colours, which lose 50% of saturation for each octave compared to the previous one; conversely, towards the low tones, the saturated colour loses 50% of luminosity"

(Veronesi 1977). The result was thus perfected by comparing the diatonic scale to the chromatic scale of twelve sounds, thus finding the wavelength of the semitones and their corresponding colour (Fig. 2).
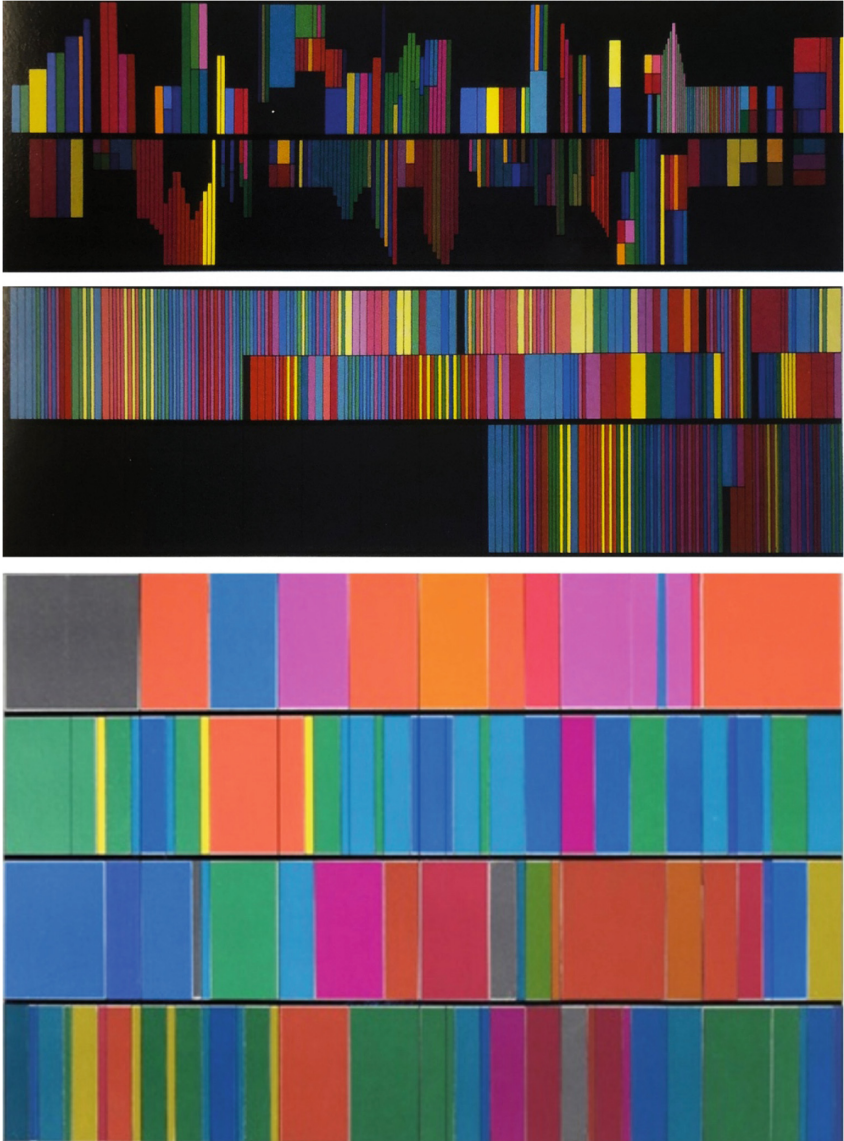

Fig. 1. Luigi Veronesi's chromatic interpretations of Arnold Schonberg's *Preludio della Suite* op.25 (above), Johann Sebastian Bach's *Fuga dalla Sonata* BWV965 (centre) and the *I Contrappunto de L'arte della Fuga* by Johann Sebastian Bach
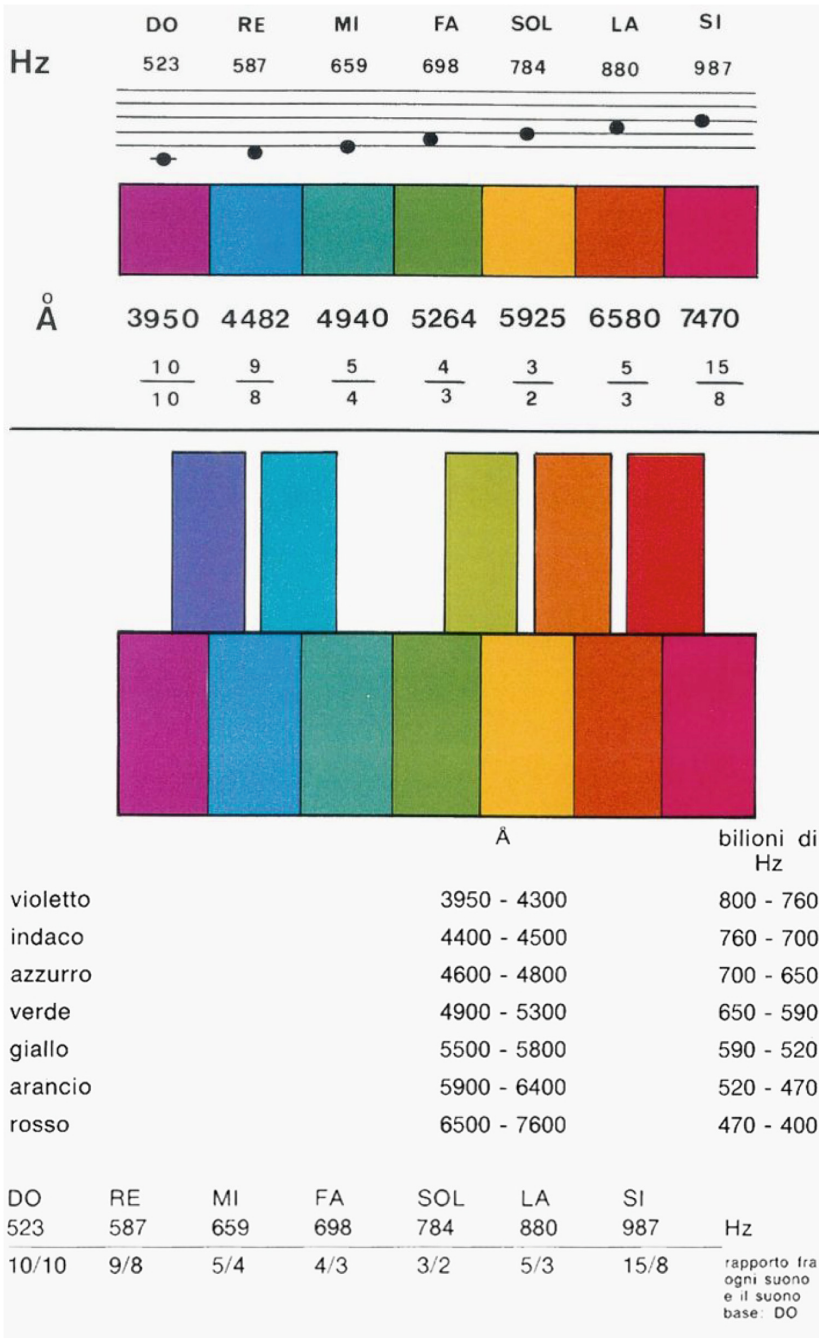
	DO	RE	MI	FA	SOL	LA	SI
Hz	523	587	659	698	784	880	987
Å	3950	4482	4940	5264	5925	6580	7470
	10/10	9/8	5/4	4/3	3/2	5/3	15/8

		Å	bilioni di Hz
violetto		3950 - 4300	800 - 760
indaco		4400 - 4500	760 - 700
azzurro		4600 - 4800	700 - 650
verde		4900 - 5300	650 - 590
giallo		5500 - 5800	590 - 520
arancio		5900 - 6400	520 - 470
rosso		6500 - 7600	470 - 400

DO	RE	MI	FA	SOL	LA	SI	
523	587	659	698	784	880	987	Hz
10/10	9/8	5/4	4/3	3/2	5/3	15/8	rapporto fra ogni suono e il suono base: DO

Fig. 2. Relationship between the diatonic scale and the chromatic scale in the Veronesi method.

4   Case Study: Museo Omero

The "Omero" State Tactile Museum in Ancona is located at the Mole Vanvitelliana in the port of Ancona, an 18th-century pentagonal building designed by architect Luigi Vanvitelli. Currently the monument is used to host temporary exhibitions and other cultural events, a part of it houses the "Museo Omero". The museum, intended primarily for use by the visually impaired, is centred on the idea of freely touching works of art (Fig. 3). There are three sections of the museum: the first is the section dedicated to sculpture in which faithful reproductions in plaster of important sculptures from various historical periods are presented: Etruscan, Greek, Romantic and Gothic, Roman, Mannerist and Baroque, Neoclassical; the second section is dedicated to archaeology, with more than one hundred and fifty historical finds found in the Marche area; finally there is the section dedicated to architecture, where there are extremely accurate scale models of the most important architectural buildings in Italy. In addition to the entire tactile collection, the museum includes a documental center and areas for laboratory activities that complete the cultural offer.

Fig. 3. The current "Omero" tactile museum logo (above) and a picture illustrating how users touch artworks in the museum

4.1 The Audio/Visual Logo

The experimentation therefore involved the design of an audio/visual logo in static form and one in dynamic form for the definition of the audio and visual identity of the "Omero" Tactile Museum in Ancona. Operationally, the method developed by Luigi Veronesi has been adopted, as briefly described above in the text.

The graphic and sound composition process was conducted synchronously so that each hypothesis was verified both from a visual and a musical point of view.

The graphic transposition of the notes was made by means of coloured rectangular blocks on a square field with black bevelled edges in order to favour the contrast and facilitate its reading by visually impaired users (Fig. 4). The black square thus acts as a stave on which to place the rectangles from left to right so as to represent the order of height of the notes.
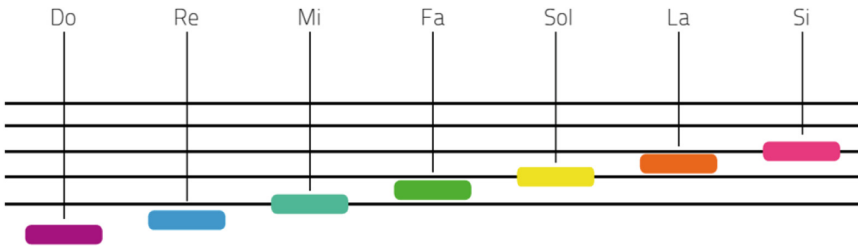

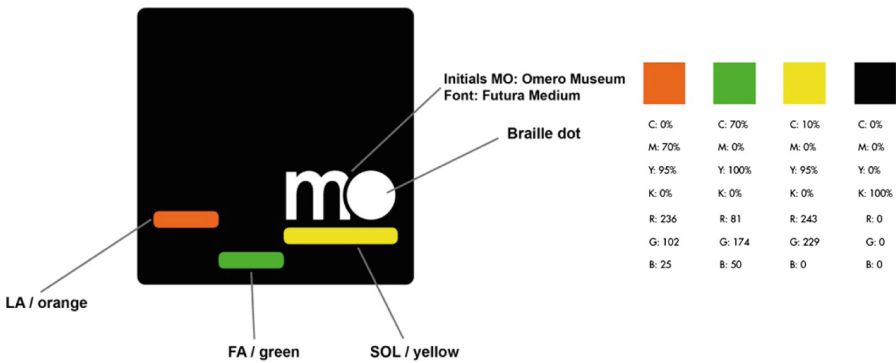**Fig. 4.** Graphic translation of the musical scale (Italian).

Fig. 5. Graphic composition of the audio/visual logo

The space between the blocks has also been designed so that the pauses between the notes are respected. The colours used for the blocks follow the indications of the Veronesi method. In particular, from a musical point of view, the audiologist is composed of three notes in sequence A, F and G. For this reason, the first rectangle has been assigned the color Orange corresponding to A, followed by the F with the color green, and finally the G with the color yellow. The yellow rectangle has a length equal to twice the other two, because the final note has a longer duration than the other two (Fig. 5).

The logo is graphically completed by the two white letters M and O, corresponding to the initials of "Museo Omero", placed above the yellow rectangle. The font used for the letters is the Futura medium, and the letter O, represented with a full disc, takes on the features of a round dot so as to evoke a point in relief typical of the Braille language used by the visually impaired, for reading texts (Fig. 6).
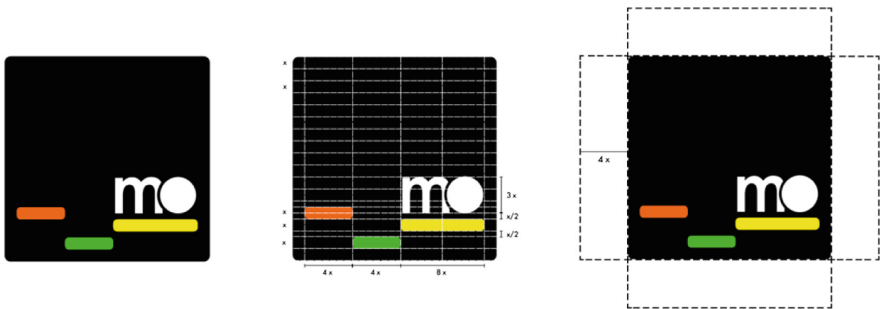

Fig. 6. Proportional grid and respect area of the audio/visual logo

The sound that completes the logo, lasting four seconds, was conceived with the aim of being easily identifiable and memorized. The three notes, composed using a digital audio workstation (FL Studio), are sampled on the *sequencer* in order to simulate classical musical instruments such as piano and violin, considered most appropriate in a museum context of a historical nature, thus avoiding the use of electronic sounds considered out of context.

The audio/visual logo thus conceived can obviously be used for different contexts of use, depending on the chosen communication channel.

In static form, the logo, in its visual part, represents the "Museo Omero" in the traditional works such as writing paper, business cards, information brochures, and in general for museum merchandising products (Fig. 7). In its sound part, instead, the logo can be used for radio spots, for audio books produced by the museum, for the answering machine and, in general, in museum spaces as a sound track for introduction to internal communications.

Fig. 7. The audio/visual logo placed on some of the museum's communication supports. From top to left and clockwise: writing paper, labels supporting the works on display, business cards, website.

For other contexts of use such as TV commercials, website, introduction to shared video content on *social* platforms, an animation has also been created for a total of four seconds in which, on a black background, the three rectangular colored blocks, corresponding to the three notes of the jingle, appear synchronously to the musical notes, from left to right with an effect of lateral stretching. The letter O, the dot of the Breille alphabet, appears in the final part of the animation, from right to left and overlaps as the last graphic element to the letter M, which is formed together with the longest yellow block (Fig. 8).

As references, for the elaboration of the animations, some of the artists who have most experimented on the relationships between sound form and graphic form have been taken (Fig. 9).
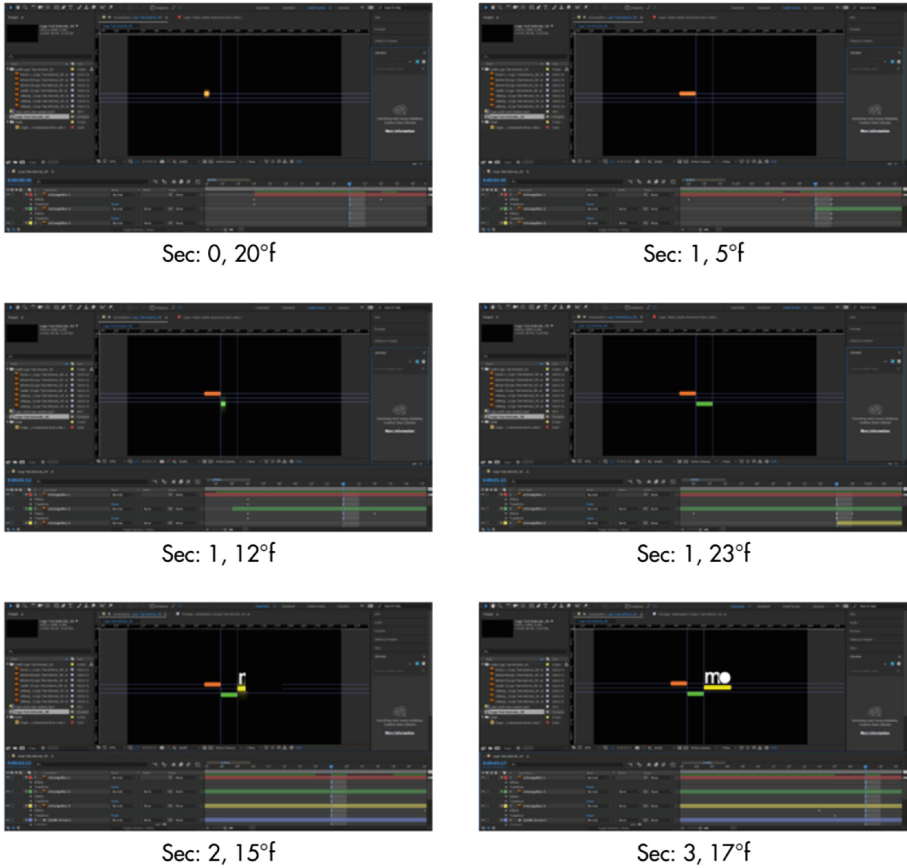
Sec: 0, 20°f   Sec: 1, 5°f

Sec: 1, 12°f   Sec: 1, 23°f

Sec: 2, 15°f   Sec: 3, 17°f

Fig. 8. Time sequence of graphic elements in the logo animation.

Among them: Norman McLaren in 1971 entitled *Sinchromy* an animation of his obtained by direct drawing on a film and then reproduced by a system of audio diffusion so that the graphic sign and sound were natively synchronized. Oskar Fischinger, a pioneer of abstract cinematography, is famous, among other things, for having choreographed the *Toccata e Fuga* section of the Disney feature film Fantasia in 1940. Larry Cuba, a member of the second generation of digital animators and always fascinated by the potential of computer graphics for the processing of geometric and three-dimensional animations.

Finally, it is impossible not to mention as a reference work a masterpiece of film science fiction such as *Close Encounters of the Third Kind* directed in 1977 by Steven Spielberg, in which humans and aliens dialogue with each other through a channel of communication based on the combined use of music and colors.
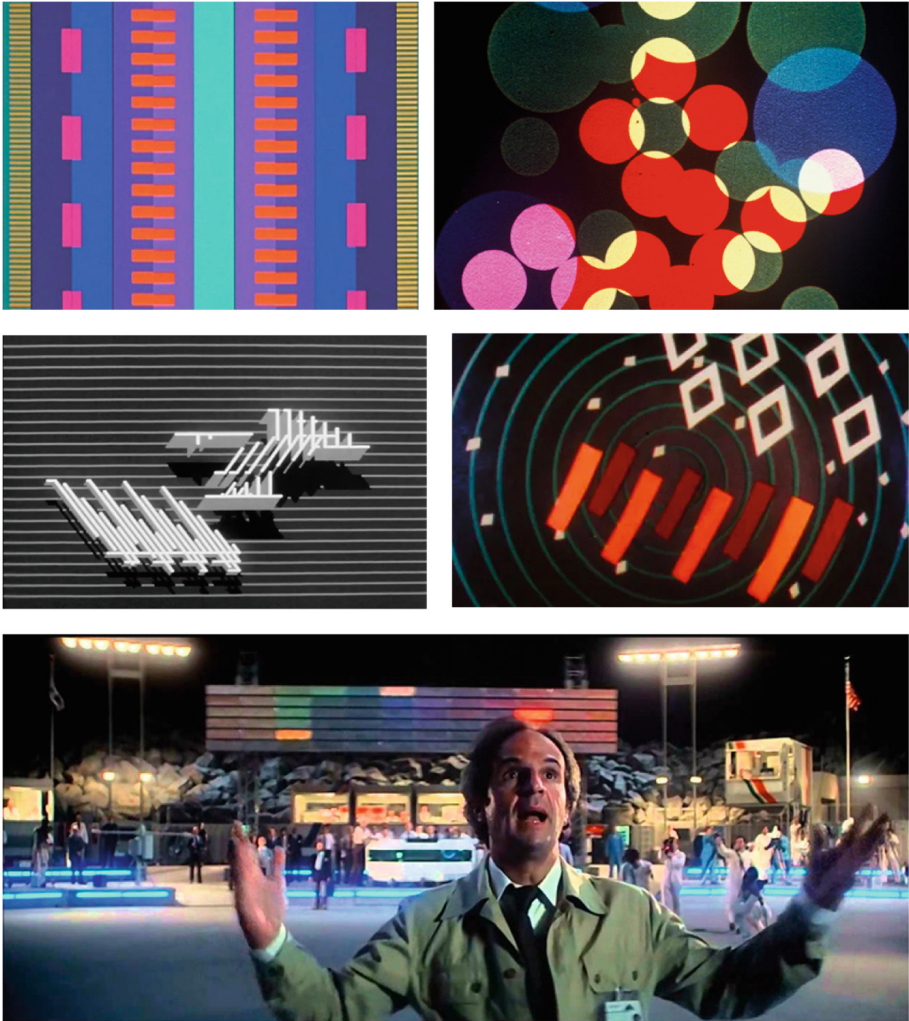
Fig. 9. Inspiration moodboard for the composition of the animated logo.

5   Conclusion

The aim of the research activity reported in this article was to verify the opportunities offered, in a communication project, by the combined use of audio/visual branding techniques for the enhancement of a cultural institution such as the "Museo Omero" in Ancona. A unique museum in Italy, dedicated to the tactile exploration of the works on display and aimed mainly, but not exclusively, at visually impaired users. In the realization of the audio/sound identity project, particular reference was made to the relationship between sound and colour.

When describing this relationship it is necessary to mention the sensory/perceptive phenomenon, which indicates a contamination of the senses, or synesthesia. The neurological phenomenon of synesthesia occurs when stimulations coming from a sensory or cognitive pathway induce automatic and involuntary experiences in a second sensory or cognitive pathway.

Numerous studies have been carried out in the past on this subject, which have tried to systematize the relationship between sound and colour. Newton, for example, was one of the first to try to approach the diatonic scale to the chromatic one, to an increase in the frequencies of oscillation of the light in the chromatic spectrum, he matched an increase in the frequencies of oscillation of the diatonic scale.

For the experimentation in question, instead, the method codified by Luigi Veronesi was used, based on the comparison between sound and colour as physical phenomena, defining a two-way relationship between their wavelengths.

The research has thus allowed the contamination of the sound flow with the visual stresses, even in animated form. The result is an audio/visual processing that presents associative and imaginative properties based on the simultaneous use of two sensory channels. The resulting synaesthetic process can become a further tool to facilitate the transmission and preservation of memory and identity of places.

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