

Color on Ceramics in the Medieval Architecture of Tlemcen, Algeria: Light, Ambiance and Symbolism

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ABSTRACT

The architectural heritage of the Marinid and Ziyamid dynasties in the region of Tlemcen (Algeria) is characterized by geometric and floral shapes of the ornamental ceramic of particularly rich polychromic expressions. This ornamentation defines the minarets, porches, interior courtyards and patios. The ceramic colors in different tones and arrangements provide spaces with an exceptional quality that highly characterizes this medieval Arab architecture. The polychromic compositions of the ceramic with their intrinsic spatial and aesthetical value remain largely unexplored. This research attempts to explore first, an untapped ancestral know-how or "*savoir-faire*" and second, to demonstrate that this architectural heritage has a colorful atmosphere, whose evolution is linked to the relationship between shapes, lights, materials and colors as well as its socio-cultural context. The investigation method consists of a survey of colors on ceramics and an analysis of arrangement patterns between colors and geometry (relationship and mixtures of colors) to determine the rhythms, harmonies of figures and background, optical compositions, and finally determine the color language and agreements that result. Color properties, the subtle combination of colors and materials interacting with an exquisite geometry display a decisive influence on the appearance and the ambiance that emerge, providing brightness and light, creating rhythm, motley and fusion in a web of optical effects, filled with symbolism, suitable for the cultural and religious circumstances of the place.

KEYWORDS

Color, Ceramic, Marinid, Architecture, Ambiance, Tlemcen, Algeria.

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1. INTRODUCTION

The northwestern part of Algeria and in particular the region of Tlemcen is one of the few places in Algeria that still has major representative monuments of Arabic art. The region of Tlemcen in western Algeria displays an art that truly reflects the splendor of the Arab civilization through its successive dynasties. Its proximity to Morocco and Spain explains the presence of many relics and monuments of Islamic art from the thirteenth and fourteenth centuries, contemporary of those found in Granada and Fez. Its architecture attests of a thriving arts production. *"One should be pleased to admire what remains of the great royal city and jealously preserve its admirable remains"* (Marçais & Marçais, 1903, p.10).

The city of Tlemcen owes its embellishments to its successive dynasties; the Almoravids, the Almohads, the Zianides and most particularly the Marinids (Bourouiba, 1981). Tlemcen's monuments, which span from the thirteenth to the middle of the fourteenth centuries, are contemporary to the great monuments of Granada in Spain. They form a group of building associated with a period of full development of the Andalusian architectural style. During their quarter-century long reign over the city, the Marinids endowed Tlemcen of its most beautiful monuments, including Sidi Boumediene compound, the Sidi'l-Halwi mosque, and the entire city of El-Mansourah, of which, unfortunately only the main mosque's minaret remains.

One of the elements that established the refined ornamentation of such buildings is the scenery flat polychrome inlaid glazed pottery called *mosaic of faience*, accompanied by stucco and wood decoration. Comparatively, the Zianides dynasty produced Sidi Belahcen Mosque, the Mechouar Mosque, Palace, and a school, the Madrassa Taschfiniya. Zianides' architecture is adorned with ceramic and polychrome earthenware mosaics. The main sections of the faience mosaic (also referred to as *zellij*) are cleverly juxtaposed and combined. They generally cover the bases of walls, floors of courtyards, porches and doorframes as well as the top parts of minarets. The surfaces garnished with ceramics are the most colorful and the best preserved ones.

The art of color is superimposed on the ceramic with geometric and floral arabesques forms. The design of lines is mixed with that of the colors to provide the place with a special atmosphere, highlight its architecture and its spatial and architectural details. In fact, these materials conceal a rough masonry work, made of rammed earth or unfinished bricks and provide an appearance of prosperity. *"The surfaces appear to*

be luxuriously adorned immediately evoking the taste of the Muslim aristocracy" (Clévenot & Degorge, 2000, p.96).

The geometry of the patterns and the fractals of this important heritage have been widely studied. Comparatively, little has been done in terms of the study of color design and arrangements. The objective of this work is to fill this gap. In the present study, the analysis is restricted to a single monument where the polychrome of its different pieces is explored. The relatively well-preserved architectural ensemble of Sidi Boumediene was selected for this study as the polychrome ceramics is widely used. Other relevant monuments, such as the Madrassa Tachfiniya have been completely destroyed (Kouma & Nafa, 2003), only remain statements made by earlier French architects of historical monuments, or some ceramics exhibited in the Museum Tlemcen.

The investigation methodology of the present study is based on a chromatic analysis of the arrangements of colors and their derived psychological and symbolic meanings. conceptions.

2. SIDI BOUMEDIENE COMPOUND

The Sidi Boumediene compound, located in the neighborhood of El Eubbad in the city of Tlemcen, was built in honor of Abu Choâib Madyane (Boumediene) El Andaloussi, a teacher, writer and poet and pole of the Sufism doctrine in Algeria and the Maghreb. The architectural ensemble includes the Sidi Boumediene mosque, built in 1339 (739 AH) by the Marinid Sultan, Abu Hassan Ali. It also includes the tomb of Saint Sidi Boumediene located nearby, and a Madrassa (religious school) built in 1347 (Bourouiba, 1981).

It is the flourishing ornamentation, mainly flat ceramic décor that makes this building stand out as a remarkable heritage. Indeed, the entrance to the mosque is made from a monumental porch, with a seven-meter high horseshoe arch, covering a staircase which leads to the door of the mosque. On the front porch, a triple festoon of brick inlaid with enamel of green netting, divides the frame into two parts: the first, the Keystone, formed by a large circular border round the hanger, the second is formed by two spandrels. The finishes of this framework, the amounts that support it and the spandrels, are made by arabesques, floral decor with double palm interlaced, regularly repeated, in mosaic tiled in four tones; white, brown, green and yellow iron, framed by a green tone ceramic net. An epigraphic band in black on white background, dedicated to Sultan Abu al-Hassan, is written above the rectangular frame.

The frieze which crowns the portal is decorated



Figure 1 - (Left) Monumental porch of Sidi Boumediene Mosque, covering a staircase with eleven steps covered with multicolored diamond-shape ceramics. Source: authors.

Figure 2 - (Right) The front of the porch with a triple festoon of bricks inlaid with enamel of green netting. The finish is highlighted by a four-tone floral decor. A majestic frieze ornares the upper part of the entrance porch. Source: <http://www.vitamineca.com/mobile/photo-gm.php?p=articles/205/205935.jpg>

with inlaid bricks of brown enamel plates and green bands above five radiating eight point rosettes. The intrados of the arch carries a regular geometric white, yellow and brown ochre coating.

Eleven steps allow access to this porch and provide this arcade with a majestic base. The stair risers are covered with diamond-shaped multicolored ceramics which continues through the floor with polychrome faience. The subtle ornamentation porch marks the threshold giving access to an introvert interior; the square courtyard of the mosque, limited by the arch of the prayer hall in front of the main entrance, embellished with a beautiful onyx basin for ablutions.

This courtyard, similar to that of the Madrasa of Sidi Boumediene (religious school), is covered with mosaics, much less complex than the ornate porch. The ceramic is composed with small diamonds of various colors. Tiles are assembled side by side and arranged diagonally in rows of diamonds of the same nuance. They are also set in bands through an arrangement

of tones: manganese brown, copper green, iron yellow and white. The diagonal bands, joined to each other form a checkerboard, thus highlighting a grid floor.

Just as the porch and the door frame, the minaret, located at the northwest corner of the mosque, is richly decorated with a polychrome mosaic. A frieze of inlaid ceramic with large rosettes, result of a geometrical interlacing and star polygons, delineates its upper part.

3. CHROMATIC ANALYSIS

In Tlemcen, ceramic is represented by pavement tiles with stamping and by multicolored tiles on stanniferous enamel.

The pigments as described and classified by Marçais (1903) are as follows:

- White: beautiful dough, half-matt, slightly greenish, very little cracks
- Manganese brown: generally used very thick, as to form an almost black tone.
- Yellow is iron yellow, rather impure, and produces a tan and spotted yellow.
- Copper green has an intrinsic value and a very variable tone; in the same decor it can appear as very dark and very deep, or very clear leaning towards celadon or turquoise colors.

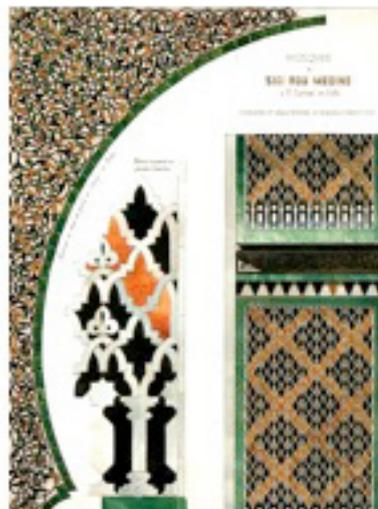


Figure 3 - Geometric design of the underside of the arch, with a light-dark contrast and a floral decoration of the arch front. Source: left: authors, right: watercolor by Duthoi 1872 (authorized by © Ministère de la culture (France), the médiathèque de l'architecture et du patrimoine (Paris))

- The cobalt blue is quite rare; it does not seem to have been used in Tlemcen before the second half of the sixteenth century. It is clear and almost pure.

This mosaic tile, in the form of enameled clay, is an assembly of varnished pieces with different tones, cut according to a template and recessed into each other. These pieces are molded, cooked and then coated with enamel and annealed again. They are adjusted, arranged and placed in cardboard decorations plans established beforehand. They are finally assembled and connected together with a mortar made of lime and sand, to form large plates of approximately half a meter, which are then fixed on the wall (Marçais & Marçais, 1903).

3.2 THE PORCH

A flat polychrome setting highlights the grandeur of the porch and announces the mosque with cursive writing and a combination of intertwined leaves and stems in a set of curves and counter curves. The tones used are a very dark brown (almost black), green, and tan-yellow, all on a white background. A green ceramic band underlines the arch, scalloped bricks and other details of the porch.

This clever combination of ornamental flora symbolizes the infinite nature devoid of a center (Burckhardt, 1985). For a Muslim, these forms are patterns whose repetition extends beyond the visible material world; they are an expression of spirituality.

Islamic decoration is the least naturalistic art possible. The religious requirements prohibiting human representation left a free hand to the Arab artists, to use the imitation of plants (Marçais, 1903).

This spirituality continues beyond the form, towards the world of colors. Indeed, the Koran often contrasted white to black (Ringgenberg, 2009) as two contradictory elements of a same pair; light and darkness, day and night, shadow and light etc. In this floral composition, the color contrast is very pronounced, creating a raised pattern effect: the floral decor in dark brown seems to stand out from its white background (color contrast between advancing and receding colors).

The clear-obscure (or *chiaroscuro*) is needed to develop not only a sense of proportions, but also the connection between the dark form thought as positive and the negative white. For painters, white and black are the strongest means of expression for light and darkness (Itten, 1961). From the point of view of their effects, white and black are totally opposed. This type of contrast is also expressed in the Arabic calligraphy. Here, white is the color of the visible light and black is the shadow that materializes

interception of this light, including that of the sun, representing a relaxing protection from solar heat. It is part of the enjoyment in Paradise, which explains the desire to create light and shadow effects.

Yellow and green colors are transitional colors between white and black. They are also intermediate values. The floral decoration is related to vegetation and to the garden of bliss promised to the Muslim (Clévenot & Degeorge, 2000). This explains the use of the double palm in green tone arranged with the black infinite rod that extends throughout the decor. In Islam, green is the color of the vegetation, color of the eternity garden of fruit trees, of green silk clothes, of different brocade sofas and carpets of paradise. The green color is eternal in the afterlife, but ephemeral on earth. The aim was to fill the surfaces with skillful combinations, by repeating various forms of ornamental plants.

The yellow palm leaf placed near the brown one (nearly black) is added to the floral composition of the porch, which affirms the clear-obscure contrast. Here the yellow color illuminates the chromatic ensemble. It replaces gold, gild and spark. It represents the energy and the wealth of the Marinid dynasty. In our case study, yellow is similar to the color of the brick and thus, creates harmony.

In this composition, the complementary shapes are coupled to an opposition between two values or two colors: black and white, raw brick and glazed brick, whose function is to disrupt the relationship between form and background. White on black draws the lines of the pattern. This combination of shapes and colors allows the transformation of the architectural context into a living and significant space.

Geometric patterns are combined with floral decoration. For example, on the surface of the underside of the arc, there is a very pronounced oblique weft, creating brown diamonds with identical shapes, which have the added geometric particularity to fit together. These nearly black surfaces are surrounded by yellow bands. Their composition is based on a clear/obscure contrast, creating a play of light and shadow and a set of relief. At the same time, this combination of tone indicates a quality design, which is the contrast between the saturated and bright yellow and the dull brown; de-saturated with the black. This would only accentuate the brightness of yellow and gives it the brilliant effect of the gold color (The Marinids always wanted to represent the golden color). This panoply of colors enhances and enriches the white plaster. It creates frames design, light and shadows effects that animate the arc, into a directory of mathematical techniques. Also, symbolically, the ornamental abundance means prosperity.

3.2 THE MOSQUE AND MADRASA PAVEMENT

But more than vegetation, geometry gives rise in the Islamic context to an ornamental exploitation that does not have its equivalent anywhere else (Clévenot & Degeorge, 2000).

First, stair risers of the stairs leading to the door of the mosque are decorated with small multicolored diamonds, whose tones are identical to the porch colors; green, black (dark brown) yellow on white background, all framed by a green ceramic surround. These fragments in diamond, smaller than those which adorn the courtyard of the mosque and the Madrasa, pleasantly decorate the staircase.

The gridded ground with fillets of diamonds is a formal system, where the geometry associated with the color plays in counterpoint and highlights the fountain in the middle of the patio. The diamond headbands are spread over the entire surface of the courtyard and create a grid of alternating colors. Constructors have made a color scheme of bright and dark tones with this surface area (yellow and white with black), by creating a frame, like weaving or basketry.

Much variation on the principles of the frame has interesting similarities with the textile arts (Clévenot & Degeorge, 2000). With bands of dark diamonds, lines print their path on a background of white diamonds.

The combinational logic of colors inside this frame creates visual effects. Contrasting colors



(black, white and yellow) accentuate the design of both frames and patterns. The results are optical phenomena of vibration because the eye is often undecided between clear and dark forms. The frame is a linear geometric distribution of these compositions, resulting in a network combination. For the viewer, the visual result is a moving and dynamic space, enlightened by white, illuminated by yellow, punctuated by green. Black serves to emphasize and express these nuances.

This polychrome geometric pattern possesses obviously, as those already mentioned, a symbolic value given to this highly allegorical place of the mosque. Indeed, the chromatic whole, punctuated by a green color, introduces the concept of the garden, a glittering garden (with the use of yellow; color of gold and sparkle, of sun and its reflections) to represent the Garden of Eden. This mode of expression enhances the connotation, not the denotation, leaving the viewer with free rein in his interpretation.

3.3 THE MINARET

The minaret rises majestically above the architectural complex of Sidi Boumediene. This is one of the prettiest still-standing specimens of its kind; by the synchronism of its proportions, the variety of its toppings and finally, in order to be perceived; the richness of ceramic coating that decorates its top (Marçais & Marçais, 1903). The tile mosaic that adorns this pinnacle is composed of each side by a frieze of four rosettes of rich geometrical construction. Decorative rosettes scheme has a symbolic value, where polychrome stars (bright yellow, bypassing black tips, outlined by white) are laden with celestial meanings; a dark starry sky. The clear-obscure contrast is repeated. It emphasizes the spark of yellow, which forms a bright spot in the dark surface that surrounds it.

To clarify the reading of the figures, the artist can assign to each element a different color. But he



Figure 4 - The courtyard of Sidi Boumediene Mosque, with a polychrome mosaic of faience (brown, yellow, green and white). Source: Author.

Figure 5 - Minaret of the mosque with a geometric and polychrome decor of rosettes.

Source: left: watercolor Duthoi 1872 (authorized by © Ministère de la culture (France), the médiathèque de l'architecture et du patrimoine (Paris)). Right: authors

can also disrupt the reading by playing on the simple alternation of light and dark (Clévenot & Degeorge, 2000). This abundant décor creates a sense of unreality faced with the material reality of the monument, making it a pure decor, a heavenly dream, a secluded place from worldliness.

A row of crenellations crowns the main body of the tower; they carry a mosaic decoration unfortunately impacted by the elements. This is an adornment consisting of white stars on a black background. The use of the bright star pattern (white on a black background) is the incarnation of the celestial world. The pattern stands out as a white active form on a dark background, thus highlighting it. Bands of green tones underline the architectural style. With the clear-obscure contrast, the entire surface takes a plastically animated feature

5. CONCLUSIONS

Earthenware mosaics played an important role in the decoration of the medieval Arab architecture of Tlemcen. Its proven resistance to elements made it the best exterior coating. Permanent colors are fixed to the portals, minarets, inside courtyards spaces and mosques. Colors are used in isolated fragments or small groups, and encrusted in a brick apparatus, as an exterior finish or shaped stone. The tones are bright spots in the matt or dark surfaces that surround them. They are either assembled in bands of a single tone highlighting architectural lines and facilitating formal reading, or into complete panels, composed of interlacing geometric, floral designs, mostly on white background. Color gradients that suggest the volumes have been replaced by a play of contrasting oppositions, reflecting a more graphic understanding of the form (Clévenot & Degeorge, 2000).

The visual impacts of these adorned spaces are intimately related to the magnificent adorning which covers them. Indeed, polychrome ceramics transform the look of the architectural space. It has a decisive influence on the appearance of a building and the atmosphere that emerges, giving an identity to its geometric composition. This ceramics adorning the flat surfaces and its colors in chiaroscuro contrast provide the impressions of relief; form and substance effect; light and darkness...

The use of color deliberately destabilizes a static geometrical design by introducing a new dynamic in architecture (Blair & Bloom, 2011). Furthermore, each color symbolizes a state of fact in our world on earth or in the hereafter, combining psychology and physiology. This ornamentation carries aesthetical, philosophical and symbolic connotations.

The image of this architecture, its aesthetic and its polychrome is a visual memory that characterizes the built heritage, a testimony of a know-how of previous civilizations. This study aimed to document in order to preserve this wealth and avoid the trivialization and degradation of some of the most remarkable architectural typologies of the country that can translate into a new design language and a positive contribution to the architectural realm.

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CONFLICT OF INTEREST

The authors declare that nothing affected their objectivity or independence and original work. Therefore, no conflict of interest exists.

BIBLIOGRAPHY

- Blair, S., & Bloom, J. (2011). *And Diverse Are Their Hues: Color in Islamic art and culture*. New Haven and London: Yale University Press.
- Bourouiba, R. (1981). *L'art religieux musulman en Algérie*. 2nd edn. Alger: SNED.
- Burckhardt, T. (1985). *L'art de l'Islam, langage et signification*. Paris: Éditions Sindbad.
- Clévenot, D., & Degeorge, G. (2000). *Decor d'Islam*. Paris: Editions Citadelles et Mazenod.
- Degeorges, G., & Porter, I. (2001). *L'art de la Céramique dans l'architecture musulmane*. Paris: Flammarion.
- Itten, J. (1961). *The Art of Color*. New York: Van Nostrand Reinhold Company.
- Kouma, A., & Nafa, C. (2003). *L'Algérie et son patrimoine*. Paris: monom, Editions du patrimoine.
- Marçais, G., & Marçais, W. (1903). *Les monuments arabes de Tlemcen*. Paris: Albert Fontemoing Editeur.
- Ringgenberg, P. (2009). *L'univers symbolique des arts islamiques*. Paris: L'Hamattan.
- <http://www.vitamineca.com/mobile/photo-gm.php?p=articles/205/205935.jpg>