

TECHNOLOGICAL APPROACHES IN CERAMIC TRADITION AND PRIVILEGE OF TURKISH TILE ART

Murat Bayazit*

Received: August 22, 2012; Revised: April 18, 2013; Accepted: May 1, 2013

Abstract

In the last 2 decades technology has created great developments in both industry and art. Various technological innovations have emerged as a result of numerous researches related primarily to advanced materials. While impressive changes were seen in industrial fields, art has also been influenced by technology. Ceramics, known as the oldest plastic art, has always been affected by both social and industrial changes, because it is both an art and also a science. Ceramics has a wide range of uses in science which are directly related to its applications in industry such as paint, textiles, automotive products, and construction. As an art, ceramics has a very different application including cultural approaches. Art tiles are one of the most outstanding examples of ceramics art. Consisting of specific figures, motifs, and colors, art tiles have a significant place in both Turkish and Islamic art. Technology has never been able to find a way to change the cultural mentality, so this art has protected its privilege for centuries. This study discusses the effects of technology on ceramic art and evaluates the current status of Turkish art tiles.

Keywords: Art, technology, Turkish tile art, Çini

Introduction

Although only electronic materials may come to mind when the word “technology” is used, it has multiple different meanings. Humans have used technological tools in their daily lives since ancient times. Numerous kinds of technical goods have been invented which have sometimes complicated very simple procedures. Humans have also been interested in art, so they began to use their elementary knowledge combined with their souls, thoughts, and dreams. Both the tools used in humans’ daily needs and the artifacts which have brought spiritual satisfaction were parts

of the technology because of their necessity in life.

While technology provides facilities in human life, it also necessarily causes some permanent changes. Society’s values (in a conventional way) also change parallel to technology and sometimes those values may face the danger of extinction. For example, in the last century the increase of technical equipment triggered industrialization and, thus, technological, digital, and artificial products began to be seen. Positive changes seen in artistic and traditional products with

Batman University, Fine Arts Faculty, Batman, 72100, Turkey. E-mail: m.bayazit@hotmail.com

** Corresponding author*

this progress cannot be ignored; however, excess use of technology will drag them to extinction. Ceramic art, which is one of the oldest and most well-known plastic arts in history, is one which has witnessed a very important part in history in this respect. Today, ceramics has many applications in the fields of both art and industry, so it would not be wrong to mention that technological developments in the use of ceramic materials indicates that their importance will still be protected. In an artistic sense, technological approaches have found their rightful place in the time periods in which the concept of art was perceived as a contradiction or irregularity, but such approaches were not always adopted and they were excluded by artists and other people who had traditional approaches to their art.

In an industrial sense, it is not possible to stop the progress in technology and the alterations it has created. However, this situation should be controlled, because it is not only important to ensure the best in the way of change for all life at present, but also for future generations. To attain this aim, maintaining the use of technology and science for the benefit of society is required (Güvenç, 2004).

A Historical Approach to Technology

Technology has helped people to live in harmony with nature and to create a civilized life. People who had very little information about nature lived a simple life with simple goods ever since ancient times and they did not always know how to utilize the animals and plants they encountered in their environment into their lives and how to take advantage of them. People, inspired by nature for their housing, firstly used caves and tree cavities, then they began to use animal leathers in order to adapt to seasonal conditions. With the discovery of fire, people obtained a degree of control over nature and began to move light and heat to wherever they went. Then, they learned how to domesticate animals and grow plants. With the development of farming,

humans needed residential areas and a regular means of construction, so social life saw the creation of communities and the generation of civilizations through making divisions of labor. Technology showed itself at this point and began to provide benefits for humans. For instance, humans both eased and increased manufacture by decreasing the workload required for the production of goods and services. Thus, there was also a rise in the standard of living. But, it created adverse effects in addition to these benefits; technology disturbed the natural balance of life, caused environmental pollution, and depletion of natural resources, so that it has now resulted in dissatisfaction (Günay and Arıduru, 2001).

Throughout human history it has been seen that technological differences between communities have played a crucial role in their superiority or the maintenance of their existence. For example, in the 4th and 5th centuries AD., a major factor in the defeat of the Central European people by the Western Huns was the technological supremacy of the nomadic peoples, because they had transformed the horse into a weapon of war that was described as “horse technology”; in other words, the “tank technology” of that era. The Mongols of Genghis Khan (Cengiz Han) took advantage of the same dominance in West European in the 12th and 13th centuries (Güvenç, 2004; Bronowsky, 2009).

Technology and Globalization

People are living in a complicated world which has been divided into various categories, such as the knowledge society, information society, industry society, and post-modern society, in the last quarter of the 20th century. There is a consensus that this fundamental transformation was the third stage after the Agricultural Revolution, which identified the transition from a nomadic (primitive) society into an agricultural society around 8000 BC, and the Industrial Revolution which occurred between 1765-1850 AD; it is believed that one of the most distinctive qualifications of this third stage was *globalization* (TUSIAD, 1994;

Günay and Arıduru, 1999).

Countries have started to come together with globalization, and departing from this togetherness is akin to breaking off from the rest of the world. Technology plays a crucial role in this situation. Countries in both war and peacetime shape their energy policies in accordance with the rules brought about by globalization and technology. As all games have rules, there are some defining and limiting lines in these energy policies as well. Despite this, many countries still distort the rules; thus, there are many debates primarily about energy policies. After the reduction of raw materials used as energy sources, people have begun to show a great demand for renewable energy sources and countries with natural resources have become more advantageous than others in this respect. Even the excessive degradation of the natural equilibrium because of the Industrial Revolution was noticed by humans too late; several studies have been initiated in order to minimize this negative situation in recent years. Historical heritages have been damaged as much as nature in the context of unplanned and irregular energy policies. Some historical residential areas and cultural heritages which have been left under the water levels of dams that have been constructed have, unconsciously, initiated a different debate. Uncontrolled use of technology and energy is seen as primarily responsible for this. The control of consumption has been redundant in the use of energy and technology, so it has brought dissatisfaction, discontent, and selfishness.

Technological Applications in Ceramic Art

There have been many changes in terms of technique and technology since the period when only soil and water were used in ceramic art. Ceramic wares which were shaped according to the needs of the people started with pottery, then gained an artistic identity, and are now even used in engineering sciences with today's technology. They are

used in various fields such as construction, textiles, paint, the aerospace and military industries, the production of electronic materials, heat, and sound insulation materials, filters etc., and they provide high incomes for those involved with ceramics. For example, ferroelectric ceramics were discovered in the early 1940s and, since that time, they have been a big part of multibillion dollar industries such as high-dielectric-constant capacitors, positive temperature coefficient devices, piezoelectric transducers, and electrooptic light valves (Haertling, 1999). On the other hand, in an artistic sense, ceramics has an important place among the plastic arts. In ancient times, different color shades were obtained (particularly various tones of yellow, red, and black) as a result of realizing that the color can be changed by taking advantage of the firing atmosphere; thus, the first steps were taken in terms of coloring with the natural firing techniques (Issi *et al.*, 2011). People who succeeded in obtaining different shades of colors in oxidizing and reducing environments brought an artistic identity to ceramic products by also ornamenting them with animal and plant figures and other natural formations. Then they developed their products with some techniques based on handicrafts such as carving and pasting. With time, firing techniques have changed and therefore many different ceramic products have emerged belonging to different periods and civilizations. The most important evidence of these alterations is the archaeological excavations carried out in historical regions and archaeometric researches applied on ceramics (pottery) which are mostly encountered in salvage excavations.

Today, the digital environment brought about by technology has come together with artificial intelligence and this combination has resulted in products that cannot be clearly defined because of their controversial relationships with reality. Albeit that the technological implementations which provide great ease in the context of design have accomplished approaches in the sense of the aforementioned relationships, these applications are far from being artistic and traditional.

Turkish Art Tile (Çini)

Since the Neolithic period (6000 BC), soil has been shaped and used in order to ease the daily workload and the first pottery was produced having a cream colored undercoat with mostly large, red, bold geometrical patterns (Cooper, 1978). After becoming an art, fired earthenwares have been used in ornamentation and construction in architecture. Numerous colors and shades were applied on those earthenware products and they gave rise to new approaches in terms of both production techniques and the raw materials used. Art tiles are a unique type of those earthenwares which have been used by ancient civilizations as borders and mosaics with their geometrical-symmetrical patterns, with various shades and combinations of mainly turquoise and cobalt colors (Dağlı, 1998; Tatar *et al.*, 2004). Art tiles, ceramic products produced by double firing and also including decorating and glazing (Yamik and Dinçer, 1999), are the one of the most important styles in art history and are named “Çini” in Turkish. The first examples of art tiles were architectural decorations utilized for providing an aesthetic design for interior and exterior venues, and they were dated to around 3000 BC (Dağlı, 1998). Frequently preferred in daily life and also used in architecture, particularly in the Ottoman period, Turkish tiles are one of the most significant and unique examples of Asian handicrafts. These products with their cultural motifs and bright colors have become a symbol of that period. Today, the production of these tiles mainly continues in Kütahya, Istanbul, and Iznik.

Art tiles, in terms of architecture, can be defined as the earthenwares applied as internal and external facade coating materials having the shapes of stars, polygons, or squares, and having a colored, translucent, sometimes glazed, smooth, or embossed, decorated surface (Dağlı, 1998). These tiles were firstly used on Egyptian pyramids in 3000 BC (as an architectural material) and they have been shown in many cultural structures since the time of Christ by regeneration and change

(Öney, 1987). The culture of the art tile that has been adopted and preserved by the Turks in every sense was improved particularly in the 15th and 16th centuries. It is today possible to see this evolution in many historical structures of the different periods thanks to their chemical and physical endurance.

Apart from their structural stability, art tiles are also important in providing superficial and textural permanence in constructions. Under normal conditions, it is not likely for them to be excessively degraded or eroded. Additionally, in the art of Turkish tiles important developments have occurred, especially the under-glaze technique evolved by artisans in the 16th century which has allowed the tiles to remain intact for many years with their original colors; and that style brought vibrant and clear colors because the ornamentations were covered with a glassy layer in their manufacture. Thus, they are both durable and aesthetic (Gyözö, 1986; Tatar *et al.*, 2004).

Another striking issue concerned with the art of tiles is the traditional patterns and motifs used. The themes preferred in tiles are generally shaped so as to reflect the communities they belong to by also improving and renewing themselves. Therefore, in any art tile product, the items depicted reveal the culture to which they belong.

Turks have used the art of ceramics in various forms just as humans have done throughout history, but they have paid special attention to ceramics especially in the art of tiles. This can be proved by some historical details about ceramic production in Anatolia. For instance, it is known that the Karakhanids used ceramics in their constructions, the Great Seljuks changed the techniques applied on ceramics, and the Anatolian Seljuks provided originality and continued that art. Turkish ceramic products were called “evani” (meaning pottery) and “kâşi” (meaning “of Kâşan”) referring to the city that was accepted as the center of ceramics during the period of the Great Seljuks). But then, during a military campaign in Iran, the Turkish emperor Yavuz Sultan Selim (Selim I.) brought back some

Chinese ceramic wares with him and those products affected Turkish ceramic wares which have subsequently changed their name to “çini” meaning “of China” (Yetkin, 1984; Satir, 2007).

In Anatolia, especially with the high level of prosperity in the Ottoman period, there were significant improvements in art products, and the level of manufacturing increased in tandem with the improvements. Alongside these developments, the use of natural beings in art has been adopted by Turks and carried forward throughout time with Islam. Some branches of arts and crafts such as tiles, miniatures, carpet weaving, wood working, and stone processing, all of which are mass produced by Turks, have been successfully shown in both architecture and goods in daily use with their floral motifs. Tiles, wood working, and glass processing have been incorporated into historical structures such as the Selimiye, Süleymaniye, and Sultan Ahmet mosques which are unique works of Ottoman architecture, and also in the aesthetic figures carved on old Ottoman tombstones which contain important information about intensive use of flowers in Turkish art (Cinar and Kirca, 2010).

Tile Art in Iznik and Kütahya (Turkey)

Tile processing has been one of the essential arts and handicrafts in Anatolia ever since tiles have been used in daily life and also in architecture. This craft has been primarily carried out in Iznik, Kütahya, Konya, and Istanbul. Iznik tiles were the most special products used in Seljuk and Ottoman architecture due to their unique characteristic features such as glossy glazes, figures, motifs, and vitreous texture which are all being studied today. They were used and exhibited in caravanserais, palaces, and Turkish baths in Istanbul (the most significant city of that period for both Europe and Asia). It can be seen that those art works have been preserved safely in these venues, and they have been visited by people from various, different

cultures; thus Iznik tiles became famous and well-known products, which facilitates the follow-up and definition of those tiles today. Iznik tiles can be accepted as the most significant art works in the context of understanding, promoting, interpreting, and preserving the art of Turkish tiles. Although the Iznik tiles began to disappear in the 17th century because of economic and social reasons, they are still important in terms of ceramic art and traditional handicrafts all over the world. Most recipes, techniques, and kiln conditions used in the manufacture of Iznik tiles have also disappeared with the extinction of the art in the region, so all of those parameters have become like a special secret. Today, there are some projects being carried out by universities, institutions, and other foundations to reproduce those tiles with the specific features they had in the past in order to revive their artistic essence (Anonymous, 1992; Duymaz, 1998).

In the history of Anatolia, Kütahya has always been known as the “city of ceramics”. This term came to the fore in the Ottoman period with the art of tiles. It is known that the Phrygians, who are accepted as the first community that had a settled life in Kütahya, produced ceramics by shaping and firing the soil, and used patterned and decorated forms instead of a simple surface. The Phrygians had been under the influence of the Hittites, so they had similar features in terms of art as well. Ceramics manufacturing emerged in Kütahya in this way and it has continued mainly in Iznik, Kütahya, and Istanbul which were the production centers of ceramics (art tiles) in both the Seljuk and Ottoman periods (Anonymous, 1992; Duymaz, 1998). Two examples for Kütahya art tiles are shown in Figure 1, and an example of a traditional Turkish tile pattern is shown in Figure 2, both of which have been reproduced with permission of the Kütahya Art Tile Museum management.

Conclusions

Art has been affected by permanent changes, and cultural and artistic movements which

emerged after the Industrial Revolution; nevertheless, it has begun to keep pace with the technological developments that effectively emerged in the 21st century. In recent years, there has appeared a concept which we may call “back to conventionalism” or “longing for conventionalism”. This can be likened to radical decisions taken by communities in the 20th century towards art and culture. Cultural products which were manufactured in traditional ways have probably been the art and craft products least affected by the changes (in terms of traditional expressions and the methods used). But in spite of everything, it should not be ignored that it is still possible for them to face extinction and oblivion. One of the most significant examples that can demonstrate this situation is ceramics which is

an art but also a craft.

Nowadays, ceramic materials have a very important place in both science and art. Ceramic materials that are used in numerous industrial productions have also come forward in art terms. Shaping, ornamenting, and firing processes of soil date back to prehistoric times. Earthenwares have been a tradition and life style for many civilizations and so they have been adapted to socio-economic, technological, and cultural conditions of different ages. Both technological and traditional ceramics have always served humans, thus these earthenwares have succeeded in finding a special place for themselves throughout all the changes that have occurred throughout the history of mankind. The most appropriate example for this is Turkish art tiles (çini). These tiles have



Figure 1. Turkish tile with floral ornaments applied on traditionally white painted fabric (a) and Turkish tile with figurative ornaments (b)

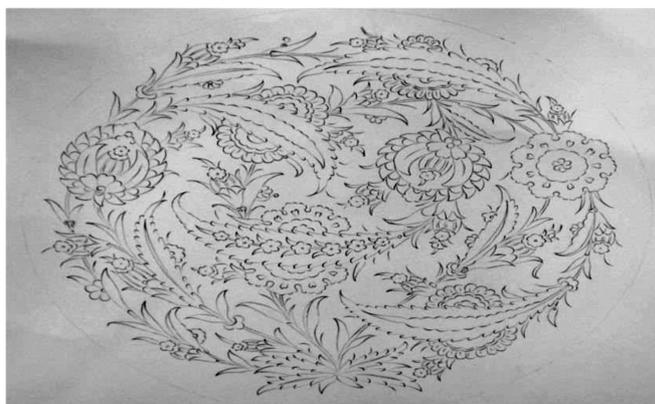


Figure 2. Image showing an example of traditional art tile pattern used in ornamentation process

been mentioned in literature through the centuries with their sometimes glossy, sometimes matt views, vivid colors, glazes, patterns, and figures containing cultural themes. So, they have conveyed the social and artistic mentalities of the periods to which they belonged. In this context, maintaining and preserving this art is of the utmost importance nowadays.

Today, in Turkey, one of the largest-scale art tile productions is carried out in Kütahya where there are a total of 172 plants involved in producing art tiles including manufacturers, factories, marketers, and designers as of 2008-2009 (Bayartan, 2008). The majority of the products from these enterprises are exported; others are exhibited and sold in the city for the purpose of tourism. In these plants, the younger generations have the opportunity of taking lessons about this art and learning the subtleties of the handicraft. These enterprises and also workshops additionally give information about raw materials used in the tiles and some small but unique tips about the preparation of special production formulae. Consequently, these places have a great significance in terms of the sustainability of this tradition.

Kütahya is a favorable city for students who are studying ceramics in fine arts high schools and faculties, because there are many sale points for ceramics. Thus, students can easily supply all their needs for ceramic production such as plastic and metal hand tools, ceramic casting slurry or plastic clays, and various types of glazes, dyes, and mini ceramic kilns. These developments are encouraging in terms of art tiles which have an important place in traditional Turkish handicrafts. As in other parts of the world, local and international organizations are extremely significant in Turkey. The activities which are related to reviving and preserving traditional handicrafts within the cultural heritage create a pool of knowledge and culture. In this sense, one of the most striking and successful undertakings was the 3rd International Symposium on Traditional Kütahyaaware and the 1st Eurasia Ceramics Congress which was organized in Kütahya

in 2010 with the contributions of the Ministry of Culture and Tourism, the Governorship of Kütahya, Kütahya Municipality, Dumlupınar University, the Chamber of Trade and Industry of Kütahya, and the Union of Tile Masters (ceramists). Local and foreign artists, designers, industry professionals, and academics who are interested in ceramics, art tile, glass, glazes, and enamels came together for this congress. Various representations concerned with new ceramic production technologies were exhibited during the symposium, so participants found the opportunity to share their experiences and knowledge and also to discuss the problems encountered in the ceramics sector.

As mentioned before, the supporting and sustaining of Turkish art tiles from the Ottoman period until now has been very significant in terms of preserving conventionalism in Anatolia. Although international activities and the mentality of museum management and education, which are important parameters in this context, seem effective for now, there should be a degree of permanence in this regard. Even though terra cotta products, which have a considerable importance in terms of the culture and economy, show changes parallel to technological improvements, they should be protected by the communities to which they belong, and their manufacture should be carried on into the future with their own basic features.

Acknowledgements

I am grateful to the Kütahya Art Tile Museum and Metin Türktüzün, the manager of the museum, for providing a considerable amount of literature about Turkish and Kütahya art tiles, and the photographs of the tile and pattern examples used in this study.

References

- Anonymous. (1992). Kutahya. Yurt Encyclopedia, Istanbul, Turkey, 7:5293-5297.
- Bayartan, M. (2008). Ceramics of Kutahya from the point of the functions of city. Istanbul University Department of Geography, Journal of Geography, 17:37-45.

- Bronowsky, J. (2009). *The Ascent of Man*. Translated by Aykut Goker. Say Publications, Istanbul, Turkey, 352p.
- Cinar, S. and Kirca, S. (2010). Perception of garden in Turkish culture. *Istanbul University Journal of the Faculty of Forestry*, 60(2):59-68.
- Cooper, E. (1978). *Ceramics and Pottery*. Translated by Bakirer, O., Remzi Publishing House, Istanbul, Turkey, 94p.
- Dagli, S.Z. (1998). A new form in traditional Turkish art: Turkish marbled chinias. *Proceedings of the 2nd International Symposium On Traditional Kütahya Ware Of Turkey*; October 14-16, 1998; Kutahya, Turkey, p. 93-102.
- Duyamaz, A.S. (1998). Kütahya wares from Ottoman to now. *Proceedings of the 2nd International Symposium On Traditional Kütahya Ware of Turkey*; October 14-16, 1998; Kutahya, Turkey, p. 35-51.
- Gunay, D. and Ariduru, A. (1999). Orientation to science and technology, I. *Proceedings of the Technology, Quality and Manufacturing Systems Conference*. Sakarya Quality Foundation, TSE; May 29, 1999; [UATB], Sapanca, Adapazarı, Turkey, p. 22-34.
- Gunay, D. and Ariduru, A. (2001). Position and characteristic of technology, II. *Technology, Quality and Manufacturing Systems Conference*; June 7-8, 2001; Abant/Bolu, Turkey. Available from <http://www.durmusgunay.com/?calik=yayimlar&emir=oku&komut=27>. Accessed date: Jan 21, 2012.
- Guvenc, K. (2004). *Technology, Union of Chambers of Turkish Engineers and Architects*. Kozan Press, Ankara, Turkey, p. 6-7.
- Gyozo, G. (1986). Anatolian Pottery from Iznik and Kütahya in Hungary in the 16th and 17th Centuries. *Proceedings of I. International Congress on Turkish Tiles and Ceramics*; Kütahya, Turkey, p. 143-148.
- Haertling, G.H. (1999). Ferroelectric ceramics: History and technology. *J. Am. Ceram. Soc.*, 82:797-818.
- Issi, A., Raskovska, A., Kara, A., Grupce, O., Minceva-Sukarova, B. and Okyar, F. (2011). Scanning electron microscopy and micro-Raman spectroscopy of slip layers of Hellenistic ceramic wares from Dorylaion/Turkey. *Ceram. Int.*, (37):1879-1887.
- Oney G. (1987). *Art Tile (Çini) in Islam Architecture*. Ada Publications, Izmir, Turkey, 163p.
- Satir S. (2007). A current evaluation of traditional Iznik tiles and ceramics. *Design Discourse*, 2(3).
- Tatar, I., Ediz, N., and Bentli, I. (2004). Production of diatomite additive tile. *Proceedings of the 5th Industrial Minerals Symposium*; May 13-14; Izmir, Turkey, p. 313-317.
- TUSIAD (1994). *Higher education, science and technology in Turkey and World*, Publication No: TUSIAD/94, Istanbul, Turkey, p. 6-167.
- Yamik, A. and Dincer, N. (1999). Investigation of effect of hydrated lime on physical properties of art tile and conformity of Kutahya glaze. *Proceedings of the 3rd Industrial Minerals Symposium*; October 14-15; Izmir, Turkey, p. 163-169.
- Yetkin S.K. (1984). *Art in Islamic Countries*. Cem Publications, Istanbul, Turkey, 245p.