FINDING OUT IF YOUR CERAMIC & BRONZE ANTIQUES ARE GENUINE

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Introduction

Buying and selling in the antique market can be a risky business for private collectors as well as corporate and public collections. For decades fakes and reproductions have been produced, and lately the market has been flooded with artefacts that are difficult to visually distinguish from genuine ancient works of art.

A connoisseur judges a piece by its iconography. A conservator looks for signs of deterioration and the consistency of technological processes used to produce the artwork. However, many of those who reproduce old pieces are aware of the latest research in the art world available in journals and on the Internet. Minute details of the shape and the surface of an artwork can be replicated.

If the provenance (the origin) of an antiquity is unknown, it is advisable not to rely only on the visual appearance of a piece. Organic matter such as wood, textile, and paper can be dated by radiocarbon dating, also known as C14 dating. For ceramics and certain bronzes or iron, thermoluminescence testing, also known as TL testing, is applied.

What is Thermoluminescence Testing?

Many types of minerals store energy from a field of radioactive radiation and radiate it again in the form of light impulses, the so called thermoluminescence (TL). The field is formed by the tracks of unstable uranium, thorium, potassium and rubidium isotopes, which are nearly everywhere in the earth's crust. With some exceptions, each clay, which is used for forming objets d'art and articles of daily use, contains such radiosensitive minerals. Quartz and feldspar have a favourite position as supporters of the TL feature.

The thermoluminescence analysis gives information about the time of burning. The determination of age in the TL certificate refers to the "burning age" of the sample, which means the time of its last heating to a temperature of more than 500°C, and shows the place where the sample has been taken.

Over the ages ceramic minerals store energy. This starts after the last firing of the clay. To determine the age, the ceramic samples are heated under laboratory conditions, through which this energy is set free in the form of visible light impulses. These impulses are measured and an exact determination of age is possible

Advantages of TL Testing

TL testing will give a clear indication whether or not the piece has been produced in recent years. The testing is independent of the shape, size, and provenance of the piece and tends to be more objective since the machine that tests the samples does not know where, when, and who produced the artwork. Large objects can be sampled in their location and do not have to be shipped to the TL-test laboratory. Multiple tests can be run on the same piece for statistical purposes.

Disadvantages

It is crucial to know where the test sample is taken. Very often pieces have been restored and testing only the restored area will result in a recent date. The sample has to be taken by a specialist, who knows how the sample has to be prepared and taken. TL testing is considered a destructive sampling method since a small hole has to be drilled into the artefact.

Terracotta and Low-fired Ceramics

Terracotta or earthenware are ceramics that have been fired at a lower temperature and are not as hard as high-fired ceramics such as stoneware and porcelain. Sampling of low-fired ceramics for TL testing is easier and more straightforward than sampling of porcelain.

The sculpture in figure 1 is from Vietnam and a very unusual little fellow. It is difficult to date it by its mere shape. The owner was not sure of the age, and the deteriorated surface of the sculpture is not necessarily indicative for the authenticity of the piece as the original surface finish such as original pigmentation or paint was missing.

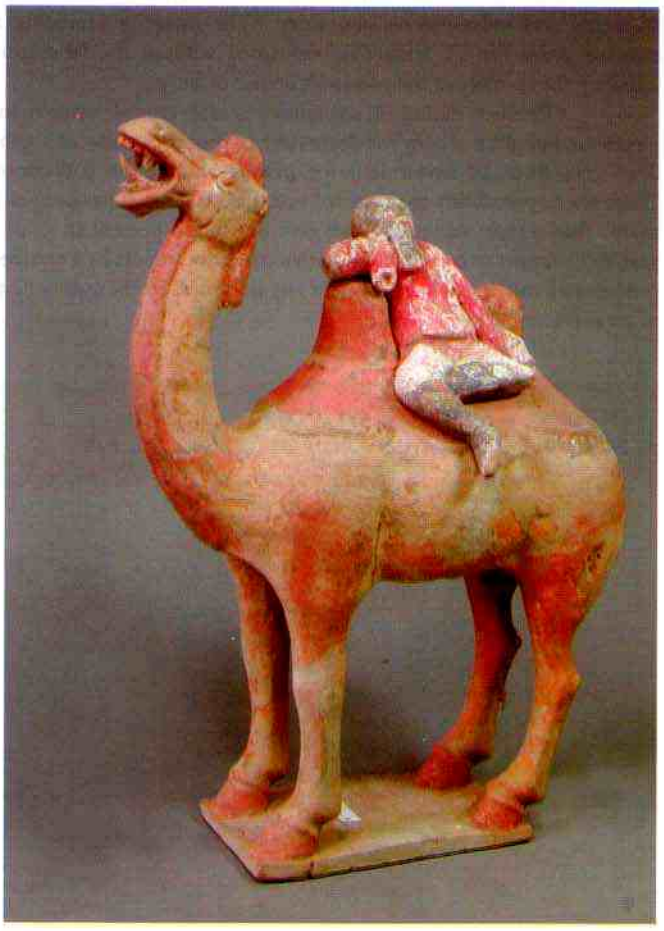
To ensure a representative testing of the piece, three areas on the ceramic were singled out. The sample sites were taken from inconspicuous parts. This was carried out in the near dark to prevent contamination of the sample by light.

The samples were shipped to the Ralf Kotalla laboratory in Germany, which is the oldest privately run TL-testing laboratory. The final report for the client contained the TL result and a Condition/Sampling report. The Vietnamese terracotta was shown to have an age of 2100 years (+/- 20 years). The result clearly showed that the piece is not of recent make and is older than expected.

The painted Chinese ceramic camel has a separate figure astride it. Closer inspection revealed various restorations. There are many cases where camels and horses, popular collectors' items, have been found to be fakes and are of more recent production dates. In this case it was unusual how well preserved the camel and the figure were.

Three samples were tested, one on the little figure and two on the camel. One sample clearly indicated a restored area. The other two gave a TL-test date of 1200 (+/- 30) years, clearly in the Tang Dynasty (618-907 AD).

Previous page *Vietnamese Terracotta figure dated to 2100 years (±20 years).*
This page *Tang camel with female rider 1200 years (±30 years).*



Bronzes

It is crucial to TL-test bronzes that have no known provenance, since modern casting methods can be used to produce antique shapes. The tricky part is the patina. For hundreds of years the Chinese and others have known how to artificially age their bronzes such as by pickling them in animal urine.

A traveller visiting tourists spots in the Southeast-Asian region will be overwhelmed by the number and variety of antique reproductions available.

TL testing carefully tests remnants of the procedure and methodology by which the pieces were produced. The sand core in most sculptures, if not removed after the casting, can be used like ceramic to measure the last heating above 500°C.

In case of the standing bronze Buddha, three samples were sent to the TL laboratory in Germany, and the age was determined to be 80 years (+/- 30), a clear indicator that the piece is of a recent date.

The seated Buddha in picture 3 shows all the signs of an antique bronze. The corrosion present was consistent with known corrosion formation on ancient bronzes. However, the exact age was not known.

In the present case the samples were TL-tested and the results dated the piece to 1300 (+/- 30) years old. In this case the TL test confirmed this Buddha as a rare antiquity.

Conclusion

The above examples show the usefulness of thermoluminescence dating. Buying an antiquity without knowing its provenance can have inherent risks. A certificate of authenticity from the seller is not always sufficient. Evaluation and testing by a third party can remove uncertainties and doubts, especially when performed by an impartial and independent laboratory. The integrity of dating is ensured when the TL testing is performed without the laboratory knowing the identity of the artwork's owner or buyer.

Objective dating of antiquities is also crucial, since many pieces are bought not only for decorative purposes but also as a good long-term financial investment for private and public collections. There is a responsibility to safeguard such investments. It has been estimated that certain antiquities can gain five to ten percent in value a year. A TL report in combination with a condition report by a certified conservator can, in most cases, clear any doubts as to the authenticity of an antiquity.

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Left Burmese seated Bronze Buddha 1300 years old (+/- 30). Right Burmese Bronze Pagan Standing Buddha 80 years old (+/- 30).

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Preserving your Heritage

I am moving house and am worried that my antiques will get damaged. How do I find a mover?

Shipping artwork such as antiques and antiquities is always a risky undertaking. Ask your local Museum to recommend an art handler or art-mover. Try to get a list of a few recommended companies. Ensure that suitable packing material is used. These should be museum grade materials such as acid free paper, polyethylene foam, and bubble wrap. Do not under any circumstances use newspapers or materials such as PVC.

Is it necessary to insure my art at home?

Your works of art are constantly at risk. Environmental damage such as heat, humidity and natural disasters are usually difficult to insure. Damage due to accidents, vandalism and transport are the most frequently insured risks. There are local insurance companies or international insurers qualified to do this. Ask your household insurer or art-movers to refer you to an appropriate insurance broker.

I have a collection of antiques ranging from ceramics to bronze. How do I showcase my collection at home safely?

Southeast Asia has a very humid and warm climate. Together with urban pollutants, this can be very damaging to your works of art when displayed in or outdoor. Metals such as bronze and iron will rust while silver will tarnish. Textiles, paper and other organic materials might warp, stain or mould. Ceramic can develop salt re- crystallisation and stone can be affected by algae and other organic growth. So it is important to know the best humidity and temperature levels for your piece of art and when you have achieved the right environment keep it constant.

If you have any enquiries on conservation and restoration, please post questions to: info@faltermeier.biz