



# A Traditional Metal Craft Dhokra: A Case Study

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## Abstract:

This paper discusses the historical perspective of the traditional metal casting technique of the “Dhokra” handicraft. It is based on secondary sources such as published papers, books on the metal craft, and print media. For the first time, this technique was observed in the Indus Valley civilization when a dancing girl figurine in bronze from Mohenjo-Daro was discovered. This figurine was made by lost wax technique (Cire Perdue technique). Since then, it continued in some of the Indian tribes i.e. Gadwa, and Gonds. Ghasi and Chitraghasi, Damar Malhor, etc. who are continuing the practising of the Dhokra craft. It is prevalent in the states of Odisha, West Bengal, Chhattisgarh, Madhya Pradesh, Jharkhand, and Telangana. The Dhokra craft is known as a non-ferrous metal casting process. The purpose of the paper is to understand this specific metal craft which has a significant position in tribal communities. The age-old tribal tradition have very often followed this metal craft. It presents the social, economic, and religious aspects of the tribal societies.

**Keywords:** Dhokra craft, Lost wax technique (Cire Perdue), Tribal, Metal casting

## Introduction:

In Mesopotamia between c. 3500–2750 BCE, the lost-wax technique was used on a small scale but later large-scale copper and bronze statues were being sculpted. One of the earliest surviving lost-wax castings is a small lion pendant from Uruk IV. Sumerian metal workers were practicing lost-wax casting from c 3500–3200 BCE. The rich Indian handicraft dates back to the Chalcolithic phase and has continued in varied materials and forms. Indian handicrafts have evolved over the centuries to become a defining aspect of the country’s cultural heritage. The Dhokra metal art is one of them.

This craft has been an integral source of livelihood as well as an expression of their artistic longings. The Bronze Age Harappan culture began approx. 5000 years ago, when the lost wax technique was observed in the famous bronze dancing girl statue of Mohenjo-Daro which revealed that this craft existed even beyond the mature Harappan civilization. This opinion is based on the observation of acquired expertise over a long period before producing such a perfect dancing girl figurine of Bronze (Agrawal 1971; Hegde 1965; Marshall 1931; Mackay 1931; Muhly 1988; Horne 1990). Many scholars such as Risley (1891) Ray et al (2000), Sahu (2015) Tripathi(2018), Thoury et al (2016), Shanker and Gauri(2017), Ray K (2023) have mentioned Dokra in their research papers and books.

Dhokra is an alloy mixture of Brass (28%), Zinc (33%), and Nickel (10.6%). The southern and eastern parts of the country mostly practiced this lost wax technique. The Dhokra craft is one of the earliest forms of artistic skill of human beings. It represents the social and religious activities of society through the craft (Agrawal 1971; Agrawal 2000; Mukharjee 2016; Reeve 1962; Ray et.al 2000; Dikshit 2013). One of the earliest surviving lost-wax castings is a small lion pendant from Uruk IV. Sumerian metalworkers were practicing lost-wax casting from approx. c 3500–3200 BC. The rich Indian handicraft dates back to the Neolithic and continues in varied materials and forms. Indian handicrafts have evolved over the centuries to become a defining aspect of the country's cultural heritage. The Dhokra metal art is one of them. The crafts have been an integral source of livelihood as well as an expression of their artistic urge.

The tribes involved in the lost wax technique are from different areas, for example, Dhokra and Dhepos in Birbhum, Bardhaman, and Bankura districts of West Bengal; Malars in South Bihar; Ghorua, Gond, and Ghadwa in Bastar, Chhattisgarh; Betul tribal district of Madhya Pradesh- The craftsmen of the area are known as Gond, Korku, Pardhan, Bhilala, and Bharewa. In Odisha, they are also known as Ghantaras and Ghungarghar (Katiyar n.a.). The term Dhokra is derived from the word Dhokra Damar - a tribe of West Bengal and Odisha.

### **Origin**

In the present day, the lost wax casting popularly known as “Dhokra” art is practiced by metal artisans. The word “Dhokra” first originated from a nomadic tribe ‘Dhokra Damar’ of West Bengal. It is one of the traditional metal crafts used in different states of India. These nomadic tribal groups later settled in different regions of India like Chhattisgarh, Odisha, Jharkhand, Andhra Pradesh, and Telangana. In the tribal region of west Bengal such as Purulia, Bankura, Burdwan, Birbhum, and Medinipur, the artisans have practiced the Dhokra metal craft. The artisans of West Bengal called themselves mal, malar, malhor, mahuli (Horne 1987; Mukharjee 2016). The Dhokra metal image includes the Hindu deities tribal images, animal motifs, tribal jewelry, etc. This traditional metal craft flourished in India but attracted the world. ( Horne 1990; Sinha and Chakraborty 2015; Chandrashekhar 2022)

### **Archaeological evidence:**

Excavation of Harappan sites started in the 1920s and since then around 1056 cities have been unearthed. Out of which 96 sites have been excavated horizontally, mainly in the region of the Indus system and Ghaggar-Hakra River and its tributaries. Among these settlements, six major cities namely Harappa, Lothal, Mohenjo-Daro, Kalibanga, Rakhigarhi, and Dholavira have helped us to understand this civilization in the proper perspective. The lost wax means casting the figurine with wax and clay (process is discussed in the technique) The dancing girl bronze statue, bronze bull figurine evidence from Mohenjo-Daro, and other objects found from different sites in India (Agrawal 1971). The Cire Perdue technique is one of the oldest metallurgical arts in India. The process of the lost wax technique has been discussed in old Sanskrit texts i.e. Manasollasa, Silparatna, Manasara, Somesvara, and Vishnusamhita which give detailed description of this technique (Kar 1952; Agrawal 1971; Pal 1978; Sen 1994; Mukherjee 2016; Krishnan 1976; Smith and Kochhar 2004; Sinha et.al 2015).

Several metal discoveries in Lothal include figurines, amulets, pins, in the shape of bird heads, miniature figures curved and circular saw, a needle with an eye at the piercing end and a bronze drill with twisted grooves. This tool is considered an important ancient tool as it gave unparalleled precision and was widely known as the precursor to modern machinery tools.

### **Dhokra Artisan States:**

#### **Odisha:**

The state of Orissa is popular for Dhokra handicraft. It is largely found in southwest Odisha, namely Kuliana in the Mayurbhanj district, Kaimatin Keonjhar district, Haradagaria in Puri district and Sadeibarni in the Dhenkanal district, Ghigidi in Raygada (Sahu 2015).

#### **Chhattisgarh:**

Traditionally, the Gadwas, Gonds, and Dhruwas tribes of the state practiced the Dhokra craft. The Bastar and Ektaal are the major production centers. The Ghadwas tribes of Bastar are engaged in the Dhokra art. The artisans are making religious images, figures of elephants, horses, etc. The Kondagaon and Jagdalpur of Bastar district are the important clusters where beautiful brass decorative Dhokra figurines made by artisans (Aceola.2021; Chandrashekhar 2022; Ray 2023)

#### **West Bengal:**

West Bengal is known for her rich traditional handicrafts. The Dhokra artisan's centers are Bankura, Birbhum, Burdwan, and Midnapur of West Bengal. It is a community-based handicraft. The brass handicraft has acquired a position among other metal crafts. The village Bikna in Bankura district and Dariyapur in Bardwan district is a hub center of Dhokra. Their works include images of men and women with musical instruments and in various postures, animals and birds, elephants, peacocks, horses, etc. the figures depicting the daily lifestyle of the people (Risley 1891; Sen 1994; Smith and Kochhar 2004; Bhattacharya 2011; Chatterjee 2015).

**Jharkhand:**

The Dhokra craft of Jharkhand is known as “Jharcraft”. is a traditional art of Jharkhand. The Malhar or Malhora tribe of Pundi village in Jharkhand is engaged in Dhokra craft. The Malhora tribe lives in districts like Ramgarh, Dumka, and Khunti near Hazaribagh district in Jharkhand . The Malhora tribe makes large quantity Dhokra vases, figure of idols, miniature figures and tiny jewelry.

**Telangana:**

Dhokra metal craft widely brings glory to the State of Telangana. It is the traditional handicraft of the state. The Ojha or Woj community of Telangana is involved in Dhokra metal casting. Dhokra craft is a tribal handicraft widely seen in Ushegaon village of Jainoor Mandal, Adilabad district of Telangana. The Usegaon and Chittalbori are the major centres. They produced various figurines, folk motifs, household articles, elephants and peacocks etc. (Shankar 2017).

**Andhra Pradesh:**

Andhra Pradesh is a state in the southern coastal region of India. The brass metal handicraft exists in the tribal belts of Andhra. The village Budithi in central Srikakulam district is engaged in this tribal craft. They produced brass objects like small figurines of horses; and tribal deities. The home decoration accessories are lamp holders, lamps, chains figurines and various symbols of tribal folklore and religion, and exquisite tribal jewellery of ethnic deities (Baral and Bellamkonda).

**Madhya Pradesh:**

The local tribal community of Madhya Pradesh is involved -in the Dhokra craft. The Bharewas community of Betul district is a sub-tribe of Gonds. The nearest villages of Betul namely Tigriya, Chunahazuri, Amla, and Kamleshra are engaged to improve and enrich this craft. (Katiyar; Betul<https://gaatha.org>).

An attempt has been made to find out similarities/dissimilarities in productions of different states (Table-1):

**Lost Wax Metal Artifacts Produced In Different States- A Comparative Study**

State Name	Figures of deities	Animal And Bird Figures	Decorative Figures	Utilitarian Figures	Export
<b>Odisha</b>	Ganesh, Durga, Shiva, Laxmi, Laxmi Narayan Naga, Trisula	Elephant, turtles, Bull, Horse, Peacock, Owl, Laxmi and Ganesh,	Human heads, king, mask, fish pen stand, chariot, flower pot, people with musical instrument	Measuring pots, container with lid and without lid, lamp stand, owl designed box	Cuttack Sambalpur Raurkela, Bhubaneswar Kolkata, Delhi USA/UK
<b>West Bengal</b>	Durga, Trisula, Laxmi, Cattle, Saraswati, Sri Krishna, Shiva, Kartika, Ganesh	Elephant, turtles, Bull, Horse, Peacock, owl	Human figurines, Jewellery,	Lamp & (measuring pot for food grains	Kolkata Indonesia, USA, United Arab
<b>Chhattisgarh</b>	Trisula, Snake, Laxmi, Shiva	Elephant, Horses, Bull,	Jewellery, Candle stand,	Miniature pots, Lamp,	Raipur, Bilaspur,

	linga, Boat with four people (Ramayana)	Peacock	Bullock cart, boat	Decorative bowl, Kalash Oil lamps, Boxes	Raigarh Kerala, Rajasthan USA
<b>Telangana</b>	Ganesh, Laxmi Hanuman, Trisula, Durga, Saraswati Radha, Saibaba, Laughing Buddha, lord Venkateshwara, Krishna	Horses, Elephant Folk motifs Peacock, Nandi, cow, deer, tortoise	Wall Hanging bells Jewellery Human head, Boat Door handle fish	Measuring bowls, pen holders, Oil lamps, paper weight, cardholder Bells State logo wall hanging	Hyderabad, nearest market place New Delhi, USA,
<b>Andhra Pradesh</b>	Nandi, Ganesh, Laxmi, Durga, Trisul, Shiva, Naga	Nandi, Deer, Elephant, Horse, Cow, Peacock Face Mask, deer	Flower pots Face mask, tribal lady working figure, tribal standing man, etc.	Pots, Hookahs, trays, bowls lamp	Delhi, USA UK. Belgium, Singapore, European Continent, South East Asia
<b>Jharkhand</b>	Ganesh, Laxmi, Shiva, Nataraj, Krishna	Elephant, fish, Cattle, tortoise, Horse, Bull, Peacock, tortoise	Tiny Jewellery Tribal standing man, tribal women holding fish etc.	Measuring pots, Lamp	Ranchi, New Delhi, USA UK

### **Raw Materials and Tools**

The artisans of the Dhokra craft used the following raw materials and tools for the production of Dhokra artifacts. The important raw materials and tool equipment are Brass, water, wax threads, charcoal, brass scrap, bitumen, cow dung, wood clay, sand, tin, zinc, nickel, fuel, resin, file, big size brush, furnace, graphite container (koi), hammer, hacksaw, anvil and pincer. ((Mukharjee 2016; Katiyar)

### **Technique :**

There are several techniques involved in the making of the Dhokra artifacts. The technique of metal casting (Mukharjee 2016; Katiyar) involves the following stages

#### **Core-making:**

The first process is the making clay model. The mould is locally called “Chhancha”. A clay core or mould is prepared roughly smaller size than the final cast image. It is dried under the sun for solid piece.

#### **Modeling:**

In this stage the surface of core is covered by a layer of wax thread and design is given to the core model.

### Moulding:

In this process a thin layer of fine clay mixture of clay and cow dung is carefully coated on the wax model. It takes the negative form of the wax on the inside. Further, it is left to dry and harden. Then once again a layer of clay applied to the mould. A channel (tube) is created in mould for drain the liquid wax and filled molten metal.

### De-waxing

The complete dry mould is pre-heated in a furnace to melt and the molten wax is poured down for re-use. The wax is drained out of the channel and create a cavity of exact size and shape inside the mould.

### Casting:

To follow the above process the molten metal (Brass) is poured into the cavity through the channel. The mould is left-to cool. The object is completely made inside the mould.

### Polishing and finishing:

This is the last process; the mould is broken to release the cast and the finished artifact, which is removed and mechanical buffing / marching is done for a smooth and shiny appearance of the metal object.

### **Conclusion:**

Concluding with a request to the Government to ensure the survival and growth of dhokra craft, it must take proactive measures to support artisans through financial assistance, skill development programs and the creation of dedicated marketing platforms. Policies must aim at promoting dhokra as an Eco friendly and culturally significant art form can enhance its visibility globally. Strengthening infrastructure, offering fair pricing and integrating dhokra into tourism. These initiatives could help in preserving the Indian heritage as well as empowering artisan communities.

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