FINAL REPORT

FILE NO : CCRT/SF-3/162/2015

SUB FIELD : SCULPTURE

FIELD : VISUAL ART

CCRT SENIOR FELLOWSHIP

NAME : ANITA KULKARNI

CONTENTS

•	Introduction	2
•	Artists of ancient world	5
•	Antiquity of Indian Art	17
•	Change in Continuity	28
•	Rediscovering Iconography In Art	31
•	Conventional Media & Unconventional Approach	64
•	Neo Modern Material in the backdrop of Indian Iconography	79
•	Amalgamation Of The New & the Old	91
•	Photographs of works	92

INTRODUCTION

Modernization is essential for any art tradition to make it serve ourt lives and times. And this has been my attempt under the project I envisaged for my future working in the field of sculpture.

Media ranging bronze, brass, aluminium to fibre glass, terra cotta, cement concrete, all have been employed to create modern sculptures. The use of these media changed with time and taste of the society. In this background, my efforts to move forward and keep traditional and modern form in confluence with each other take me to explore and experiment in media such as glass, steel, polymers, silicon rubber etc. While these materials are used in the West, their usage of their usage is limited to a handful of artists in India which has impeded the popular usage of these materials due to lack of proper technical knowledge, skill, and handling of the material. I would like to fill this vacuum and present to the art connoisseurs of India, a completely new treatment of sculptures employing these materials and deploying new techniques which have become available to us with the advancement of science and technology.

The project had three levels of studies that ultimately help me reach the goal of this project.

- The study of new materials (as mentioned above), its handling, treatment, technique and multiple production methods, shall be undertaken here. It shall equip us with complete knowledge about how the material reacts to different substances, what effects can be achieved, its cost effectiveness, and durability.
- The second round shall entail the experimentation of traditional In dian forms and themes using these new materials. Based on my deep interest in

traditional art forms such as Bustar paintings and sculptures, Gond tribal art, Madhubani paintings etc, and the terra cotta sculptures of Molela & Bankura, I wish to reinterpret them using the new media techniques that provide a novel dimension to it.

• Finally, the efforts put in, in the first and second round shall be realized here wherein I will try to interweave my interpretation of these traditional arts with neo-modern materials/media. I hope to reconstruct the traditional approach, and create sculptures that are distinctly modern, and yet are organically Indian in their theme.

As per my plan, I have been working extensively the techniques employed by traditional as well as contemporary skilled craftsmen & artists. For this I visited Madhya Pradesh and interacted with tribal and folk artist and analyzed their artworks and attempted to understand the techniques employed by them. I also got the opportunity to learn the technique of Bastar Bronze casting and also Terracotta. This traditional technique of Bastar casting is quite unique and different from the lost wax process or sand casting method. Small sculptures can be cast by the Bastar technique and great amount of detailing can be achieve by this process.

I also got the opportunity to travel to Bihar, where I spent time with local artists and learnt the method and techniques of Madhubani painting with special emphasis on the painting of flowers, birds, animals and mythological figures. I have since attempted to employ these techniques and the result were very successful and encouraging.

The amalgamation of traditional art practices with the techniques of modern art fosters new avenue of creativity and gives birth to new ideas. My interaction with folk artists and practitioners of traditional art forms , helped me to acquire new skills. With this new knowledge and skill set I have created some new sculptures in a new medium : Fiber glass.

This project required intensive travelling through India, and residing for long periods in these areas to work with traditional art communities, as well as training, observing, and studying under technical persons to learn the methods and techniques of neo modern India.

Artists Of The Ancient Times

Although a complex civilization developed in the Indus Valley of northwest India two millennia before our era, recorded Indian history does not begin until the scant accounts of Cyrus' invasion in the 6th century B.C.E. and Alexander's invasion in 326 B.C.E. The first domestic record is in the inscriptions carved in Bramhi script upon monuments and rocks setting forth the edicts of the Emperor Asoka (c. 274.-236 B.C.E.) Visitors from Persia, Greece, and China left records that slightly supplement the Asokan edicts, but we are largely dependent upon the work of linguists, archeologists, and anthropologists for such light as we have upon the origins of early Indian civilizations and their predecessor cultures.

Anthropologists have made their contribution through studies of some of the many tribal groups that, because of their inaccessible location, have remained relatively unaffected by more advanced cultures. From these studies it is possible to infer something about the life of much earlier people. Linguists and other scholars have been able to translate and analyze an immense volume of the sacred and secular oral "literature" that was meticulously memorized and passed on from generation to generation until it was recorded in written form soon after the beginning of our era. The internal evidence of these epics, myths, ceremonial prescriptions, religious traditions, legal, aesthetic, and ethical codes places their origin at a time at least 1,500 years B.C.E.

For still earlier times, archeologists have been able to supplement this record by excavation of early villages, towns, cities, temples, and fortifications. Evidence from these sources places the beginnings of urban civilization in the Indus Valley as early as 2500 B.C.E. and, on a vastly greater time scale, archeology has been able to establish the presence of tool-using man at a very much earlier date. Rapid advances in Indian archeology during the last twenty-five years have given us a complete record of the evolution in India of all of the forms of stone tools familiar to Western archeologists a record that extends unbroken from very crude pebble tools to the coming of copper early in the second millenium B.C.E., and of iron at about 1000 B.C.E.

As a result of these several methods of reconstructing the evolution of human life on the subcontinent, Indian scholars have tentatively shown a sequence of cultures from the Lower Paleolithic (early Stone Age) to the present time. It is not possible to assign absolute dates for the sequence of cultures because in the vast area of the subcontinent different cultures coexisted in nearby locations. In some places "early" cultures persisted until recent times; in other places "advanced" cultures, like that of the Indus Valley, developed at "early" dates.

The earliest tools in this list were made by men who may have come from elsewhere, or may have evolved within the subcontinent. The pebble tools of the Soan industry in the Punjab are similar to those associated elsewhere with preman But no skeletal remains have been found with these early tools. There *is* no way of knowing whether the succession in the long series of cultures indicated by the stone tools shown on pages 23-25 was brought about by invasion from outside India, or by evolution within. The types of tools found in successive layers of debris excavated in the painted rock shelters are often separated by sterile layers of windblown or waterborne soil showing no evidence of human habitation. But whether new people from elsewhere moved into the shelter at later times or descendants of the earlier people reoccupied the shelter after evolving greater skills in making tools and weapons is impossible to determine.

We do know, however, from linguistic and archeological evidence, that within the last four thousand years India has been invaded repeatedly from outside. Beginning early in the second millennium B.C.E., a long series of Indo-Aryan invaders from Central Asia entered India from the northwest and destroyed or were absorbed by the superior urban civilization of the Indus Valley, which had probably already been weakened by floods possibly caused by tectonic disturbances. The invaders penetrated all of the northern part of India and killed, drove out, or interbred with the more primitive cultures they encountered as they moved into eastern and central India. The extent and degree of their influence is still roughly measurable by the Sanskrit roots, of the languages spoken by their present-day descendants.

At an unknown time and in an unknown manner the southern part of the peninsula was occupied by people speaking an entirely different language, now known as Dravidian. This language provided the roots of the four languages now spoken in southern India.

In addition to these two major language groups there are hundreds of other minor languages that have no relation either to Sanskrit or Dravidian. Many of these languages are spoken by people who are officially classified by the central Indian government as "tribals" and are widely regarded as predecessors of both the Aryan and Dravidian-speaking people. In many parts of India, as in the remote hills of Bastar State, or in the Western Ghats, these tribals remain completely outside the village economies based on settled agriculture, and equally outside the mainstream of Hindu culture. Some, as in the Western Ghats, were until recently still principally dependent upon hunting and gathering. Others, as in Assam, have progressed to slash-and-burn agriculture. Still others have taken up irrigated agriculture, as have the Bhils of Malwa. And some have moved into the slums near the steel mill at Bilhai.

Studies have been made of groups of these tribals in their relatively "pure' state as diverse in language and appearance as the Veddas of Ceylon, the Negritos of the southern mountains, the Gonds of the eastern Ghats, and the Saori of Orissa. These tribals have been somewhat transfused with the genes of later comers; occasionally they have adopted some form of one of the dominant languages; and they have usually developed some form of economic exchange, yet they remain distinct in many ways. They may not be the unalloyed descendants of the earliest Indian *homo sapiens*, but they have clearly been in India since before the arrival or evolution of the Aryan and Dravidian-speaking peoples.

It appears nearly certain that the painters of the cave pictures were the non-Aryan, non-Dravidian-speaking ancestors of the present-day tribals of central

India. In support of this conclusion are two kinds of evidence, negative and positive.

The most specific negative evidence is that there is nothing in the early rock paintings to associate the artists with the technically more advanced cultures. The Aryans who eventually dominated central India in the areas where rock paintings can now be found were cattle-raising, chariot-driving horsemen who practiced agriculture on permanent locations in the fertile valleys and raised sheep, goats, and pigs nearby. None of this appears in the early paintings. On the contrary, the subject matter is exclusively wild animals and humans in conflict with them.

The positive evidence is that the paintings are in rock shelters, many of which show unmistakable evidence of having been lived in by people using stone tools or weapons identical with those shown in many of the earlier paintings. The later cultures lived in villages, huts, towns, temples, or fortifications—not in rock shelters. Moreover, many of the early paintings show scenes of dances, hunts, or what appear to be magic rites still practiced in similar forms by tribal people in many parts of India.

In considering this evidence it is important to repeat that for at least 4,000 years, from the Neolithic period of settled agriculture and domesticated animals almost to the present, two quite separate cultures have existed side by side in many parts of India. In the valleys, especially in the vast plains of the Indus and Jumna-Ganges, rivers, cities flourished, technology rapidly advanced, and the fine arts grew luxuriantly. Great civilizations rose and fell. The valley cultures that evolved during these cycles produced metallurgy, coinage, sewage disposal systems, defensive fortifications, trade, specialized crafts, decorated pottery,

copper and terra cotta figurines, Jost-wax metal casting, sculpture in marble, sandstone, and granite, temples cut from solid rock, and as at Ajanta and Ellora, frescos comparable with those of Egypt, Crete, and Greece.

But in the remote hills, jungles, swamps, and deserts, life at the huntingand-gathering level went on almost undisturbed. The shelter dwellers adopted from the superior culture only a few basic elements, such as pottery and metal tips for their arrows. They continued until a few hundred years ago to paint the walls of natural rock shelters with simple pictures reflecting their own lives and, eventually, the lives of the valley people as viewed from the hills. Their paintings became a partial record of their isolated culture.

Gradually the pressure of the valley cultures drove out many of the shelter people and the painted record stopped. And although the tradition continued until a few hundred years ago, the few remnants that exist today are only tenuously linked to the earlier examples. Among the survivors of the Korku tribe in the Mahadeo Hills near Pachmari, for example, the dead are honored by their relatives with carved teakwood plaques placed under a sacred tree. The subject of the carvings is totally unrelated to the lives of the deceased, but the style and some of the content is similar to that of late-period paintings in shelters a few miles away.

In the tiny Gond village of Bhinyapur at the foot of Bhimbetka Mountain, which has more than 400 painted rock shelters, the life of the villagers is not very different from that of Neolithic times. The front wall of the headman's hut in Bhinyapur village is whitewashed, and on special festival days the women of the village decorate his front wall with paintings, a few of which can be seen as at

least distantly related to late-period shelter paintings. Yet the people of the village knew very little about the nearby paintings until outsiders began to tramp through the ankle-deep dust of the single "street" on their way up the mountain.

Elsewhere, descendants of the shelter dwellers now live in wattle huts in which one or more walls are coated with clay and covered with whitewash. Here the tradition of painting on walls continues. But the subjects are so conventionalized or Hinduized that they provide no connection with the hunting past.

Communal hunting, reinforced by dancing, survives today among the Boyas, Todas, Gonds, and others in forms strikingly similar to those shown in early rock-shelter paintings. Several tribal groups make images personifying evil that are then ceremonially decapitated, suggesting that the shelter paintings of antelopes pierced with spears may also have served as magic invocations of success. But, in general, present tribal practices show few direct relationships with the cave-painting tradition.

Although the evidence disclosed by excavation makes it clear that the people who painted the pictures often lived in the painted shelters, it does not follow that they lived only in the shelters. Thousands of tools typical of cultures from the Lower Paleolithic to the Neolithic have been found along river banks and at the tops of ridges containing stone suitable for making tools. It seems probable that the painters were at least partially migratory, following their food animals as they moved in search of water and vegetation; going to river banks in fish-spawning season; or spending a few weeks at well-known quarry sites to replenish their stocks of tools and weapons. If this assumption is correct,

they occupied the shelters only seasonally. The rest of the time they were in the open, or in very crude arbors. There are occasional symbols among the paintings that might be interpreted as representing houses, but the meaning is not clear enough to permit conclusions.

The early pictures suggest that neither men nor women wore clothes. From the Kushan period (200-300 C.E.) on there are many pictures showing elaborate costumes. It seems likely, however, that these were not the dress of the shelter people but of the people from the higher cultures whom they observed. Even late in the historic period, many pictures show little or no evidence of clothing.

The pictures do show, however, that they knew how to prepare animal skins. One picture at Shahad Karad and scores of pictures at Raisen show the skins of various animals, including the leopard, stretched out tight to dry, without head or claws. These skins might have been used only as rugs or robes, but bone points or stone burins found in Mesolithic layers of the excavations in the shelters could have been used for crude sewing with sinew or gut. Neither the paintings nor the excavations reveal more than this.

On ceremonial occasions, typified by scenes of dancing, decorations composed of strips or fabric or skin attached to elbows, knees, and waists are common in locations as far apart as Bhopal and Mirzapur. They may also have painted their bodies, but there is no evidence of this in the paintings. This is in sharp contrast to the rock paintings of the southern Sahara which clearly show tattooing or body paint.

The shelter pictures and the animal bones found in excavations might seem to indicate that the principal food of the shelter dwellers was big game. There are examples of smaller animals, such as the mongoose at Raisen and li2ards at Bhimbetka; the emphasis, however, is clearly on bison, buffalo, deer, antelope, rhinoceroses, and tigers. But if, as seems likely, the vegetation of central India was more or less similar to its present state, there were easier ways of making a living than chasing antelope and deer or facing the terrifying bison, buffalo, and wild boar. Among the possibilities still used by tribal people in the more remote parts of the area are roots, tubers, bulbs, legumes, wild grains, fruits, nuts, buds, ant eggs, beetle grubs, crawfish, minnows and small fish, frogs, lizards, snakes, eels, birds and birds eggs, rabbits, squirrels, monkeys, honey, and the newborn young of the wild boar, deer, and antelope. Add to this an occasional porcupine, mongoose, turtle, or peacock, and there was relatively little need to challenge the elephant or rhinoceros.

Why, then, do these spectacular animals loom so large in excavations and paintings? In the excavations, most of the long list of possible foods would leave little trace. Only the larger bones would be likely to survive. With regard to the paintings, there are two possible answers. In the early period the big animals may have been objects of fear or worship. In the later periods, they may have been the objective *of* community hunting efforts preceded by dancing and magic rituals. We will speculate more extensively about this in Chapter 4.

It seems clear from the many paintings of dance scenes that dancing had 3 central role in the ceremonies and lives of these people. An existence that in the main was precarious and fearful seems to have been enriched by the rhythm, ritual,

and release of communal celebrations. Moreover, dancing could have served as a means of inducing disciplined common effort. The capture of larger animals must have required the well-organized cooperation of many men. The power of hypnotic suggestion in inducing extraordinary feats of strength, courage, and endurance is now well recognized. This influence over individual behavior can be reinforced by group solidarity, especially when focused by traditional ceremonies and cult objects. Thus the dance ceremonies could have helped to weld normally fearful and individualistic hunters into a skillful hunting party ready to die, if necessary, in facing the charge of a wild boar, or to sit for hours in a cramped position awaiting the instant for throwing a spear into an antelope at a starlit water hole.

The shelter paintings provide no evidence of the way in which their occupants prepared their food. If recent observations of tribal practices can be taken as a guide, much of it was eaten raw. Many items could be roasted on hot coals, grilled over a fire, or parched on a hot stone. With the advent of pottery, food could be boiled. From the excavations in the shelters it appears that pottery came into use there during the third milleninm B.C.E. The pottery shards in the lower levels are very crude. But the later vessels are so well fired and decorated that they were probably acquired by trade with the villages, rather than made by the shelter dwellers.

There are no pictures of humans in conflict from the earlier periods; from the later periods there are many. In some of the latter, the fighters are similarly decorated, suggesting intertribal conflict; in others the difference in costumes and weapons is so pronounced at Adamgarh, for example, mounted horsemen are

shown attacking warriors on foot that conflict between valley people and shelter dwellers is indicated. Intertribal conflicts probably began as the invading cultures took over the hunting grounds of the shelter dwellers, disturbing territorial understandings among the hunters and forcing them to fight each other for the remnants. The shelter people recorded both the intertribal conflicts and those between themselves and outsiders.

A final question remains: were the artists specialists with scarce talents, or could almost anyone be called on to perform? The evidence from the paintings is that both answers are needed for different times and places. Analogies from elsewhere support this conclusion. The paintings at Lascaux, in southern France, and at Aitamira, in northern Spain, are technically so superb that it is difficult to believe they could have been done by anyone without talent, training, and a tradition of skills on which they could draw. But anthropologists of contemporary cultures in parts of Africa and Australia report that the painter may often be anyone assigned to the task. And most of the pre-Columbian engraving of Arizona and New Mexico are so crude that they could have been done by anyone with patience.

The rock paintings of central India range all the way from those as simple as the drawings of a fourth-grade child to those which in accuracy, grace of motion, economy of line, or skill in composition show a combination of talent **and** training. Most of the naturalistic paintings are nearer the second extreme than the first. But the symbols or decorations and many of the highly conventionalized abstractions show relatively little skill.

And so we conclude that the artists were among the ancestors of some of the present-day tribal people of central India who sustained a shelter-painting tradition for several thousand years, until the increasing pressures of more advanced cultures forced them to abandon their rock shelters and forget their painting, or transfer a greatly altered reminiscence of it to other surfaces and materials.

Antiquity of Indian Art

In the previous chapter we have suggested the probability that Indian rock pictures were painted during a long span of time, beginning in the early Mesolithic, or before, and continuing until a few hundred years ago. Proving this hypothesis and being more precise about the dates of particular paintings present difficulties that have been evident in the efforts of others to date prehistoric paintings in other parts of the world.

But the task is not hopeless, and at least a beginning can be made.

There are four possible approaches:

- a) analysis of the present physical condition of the paintings;
- b) classification of successive superimpositions of different painting styles upon each other;
- c) correlation of the subject matter of paintings with already known *periods* of prehistory, or known dates within the historical periods.
- d) correlation of datable materials found in excavations with the subjects,
 styles, and colors of paintings on the walls or ceilings of excavated shelters.

A. Physical Condition

Blurring. When mineral pigments are applied to a porous rock surface such as limestone in France or Spain, or sandstone in the Sahara and India, the pigments form a bond with the rock. They cannot be washed off and could only be removed by grinding or sandblasting. This is why the paintings last so long But it also means that in time the sharp lines of the brush become blurred as the pigment is blotted by the rock surface.

Encrustation. Water exuded by the rock or dripping on it carries soluable chemicals, which gradually form a crust over the painting as the water evaporates.

Patination. A chemical or in some cases a biological change darkens a fresh rock surface, or a freshly painted surface, even under desert conditions.

Erosion. The impact of wind-driven rain or sand upon a painting grinds away both rhc pigment and the surface, leaving the painting, m some cases, as with the elephant at Adamgarh, barely discernible¹ after long scrutiny.

These four changes, help to a limited extern in assigning relative dares to rock paintings. A very faint, much blurred, heavily patina ted or encrusted painting is probably older than a vivid and sharply defined painting. But the rates at which all four changes occur depend upon several variables which may be quite different for two paintings of the same age. Among these are the porosity of the rock, the amplitude of daily and seasonal temperature changes, the degree of exposure to sun. wind, rain, and sandblasting, and the direction of flow of cither internal or surface moisture upon or within the rock. These variables are so significant that it is not uncommon to find a rock painting chat is bright and sharp at one end but completely obliterated at the other. In addition to this, the flaking of small chips from the rock, as a result of frequent harp changes in temperature, may ruin a recent painting, while an older painting nearby is better preserved because it is always in the shade.

Nevertheless, after taking all these variables into account, it is often possible to say that one painting is "obviously" older or later than another, although the amount of stress on the word "obviously" may suggest the degree of uncertainty in the judgment!

B. Classification of Superimpositions

In many locations all over the world a very limited space has been used for painting over and over again for centuries. The later paintings often cover, but do not entirely conceal the earlier ones. Never in one shelter is there a complete sequence of all the possible styles from the earliest to the latest. Since, however, it is possible to classify paintings into styles by subject matter, pigment, and technique, the super-impositions in one shelter can be linked with those of another in a complete sequence. For example, if shelter A has style *z* superimposed on style and style 3 on style 2, while shelter B has style 4 superimposed on style 3, and style 5 on style 4, and shelter C has style 6 super-imposed on style 5, and style 7 on style 6, a complete temporal sequence can be established from style 1 to style 7. By this method *relative* dates can be established with certainty, because a picture painted on top of another must be

later. It is impossible to place the pigment of later painting beneath that of an earlier one. Although efforts have been made previously to classify Indian rock paintings into styles, detailed work has been limited to the vicinity of Pachmari, Adamgarh, and Mirzapur. Now, however, as a result of twenty years of searching the gorges and scanning the cliffs of central India, we are reasonably sure that we have samples not only of the principal styles in the thousand or more shelters that have been surveyed, but also a large sample of the super- impositions that reveal the relative dates of the styles. Although this technique provides only relative dates it is an important prerequisite in establishing approximate absolute dates.

C. Correlation between the subject matter of paintings and already known prehistoric periods, or historic dates.

The most striking illustration of this approach occurs in the many paintings which show pictures of weapons used during the Mesolithic period, characterized by the use of microliths the small, carefully shaped pieces of silicates designed to be fitted into bone or wooden handles for use as knives, scrapers, saws, sickles, and barbs, or points for arrows or harpoons. They are easily distinguishable in the paintings from the larger stone flakes or cores of the preceding Upper Paleolithic and the smoothly ground and polished tools of the succeeding Neolithic. In the drawings below, microlithic tools appear starting on the left; contrasting heavier tools arc shown on the lower right. One of the most distinctive types of arrowheads developed during the Mesolithic. not only in India but in other parts of the world, was the "inverted arrowpoim," in which the curved edge of a half-nioonshapcd chip, or the point of a triangular piece was inserted into the shaft of the

arrow, with *A* broad cutting edge forward. This is exactly the reverse of the usual conception of an arrow with its small piercing point forward. The reason for this reversal may have been that the broad cutting edge made a slash wound, causing the prey to bleed profusely so that it would weaken rapidly and be easily followed by its trail of blood-

Illustrations of identifiable Mesolithir; weapons appear most clearly in the paintings we have classified under style 5. For this reason we have assigned style 5 to the Mesolithic. That four styles preceded style 5 is well attested by superimpositions. From this it follows that if style 5 began in the Mesolithic, the four styles whose pigments lie successively below it must be earlier. How much earlier cannot be determined by this approach. So we leave it simply that rock painting began in the Mesolithic or earlier. It must be repeated, however, that although the beginning of the Mesolithic has been dated by some Indian archeologists as early as 8000 B.E.E., in the remote parts of India where some of the paintings are found the Mesolithic probably began later and persisted longer.

In the historic periods, the correlation of the subject matter of paintings with known dates becomes somewhat easier. At Shahad Karad, for example, a few miles from Bhopal, there is 3 painting of a warrior in the costume of the Kushan period, 100-300 C.E. We have assigned this picture, on the basis of its color, subject, and technique, to style 12. Paintings superimposed on this same style in other shelters are later; those painted beneath this style are earlier.

This approach can also be used at Pachmari, where there are many paintings in the white pigment and graceful lines we have called style 16. The arrow tips in many of these paintings are long and very sharp. They probably

could be made only of iron. Although iron implements came to northwestern India as early as 1000 B.C.E., their use spread only slowly eastwan and southward, especially south of the Narmada River. Pachmari is in one of the least accessible parts of India, high in the Eastern Ghats and south of the Narmada. For this reason, and on the basis of superimpositions at other locations, we have assigned to style 16 a relatively late date: the post-Gupta period, 500-800 C.E.

Finally, at about a score of locations in central India, mostly near known Buddhist, Gupta, and medieval sites, there are engraved or painted inscriptions that can be read, translated, and assigned to the period in which the script in question was widely used. These inscriptions were certainly not made by huntingand-gathering shelter dwellers, but by intruders during the historic period, probably by Buddhist and Hindu hermits. As can be seen from the table on page 33, most of the inscriptions arc short and state only the name of a person. None of the inscriptions we have found superimpose or are superimposed by other paintings. So they have not been of much help in dating other paintings in the same shelters. But there is always a possibility that our successors in this field may have better luck!

D. Excavation.

In many of the central Indian painted shelters excavation of the floors is impossible, because they are solid rock shelves of cliffs, below which the talus slope of rubble dissociates the paintings from any objects which might be found on them. But in other locations, such as Pachmari, Mirzapur, Adamgarh, Raiscn,

and Bhimbetka, there are good sites for careful digs in accordance with precise archeological techniques. During the past forty years more than twenty excavations have been undertaken in shelters at these places. Fifteen of these have been done by Wakankar and his associates. The excavations range in size from narrow trial trenches to a few broadly horizontal digs encompassing most of the floor of a shelter. The depth of the removable materials above solid rock has ranged from about eighteen inches to about six feet.

Most of these digs have exposed successive layers of soil and debris giving evidence of intermittent human habitation. A few show only one or two periods of occupation. Others have produced a perfect series of stone, bone, baked clay, and metal objects exemplifying every known archeological period. In one of the Bhimbetka digs, the lowest layer, containing pebble tools, was separated from those above it by a layer of breccias, a soft rock formed from windblown dust subjected to pressure. Many millennia must have passed during the time that these crudest of tools were imbedded in the breccia. Although the pebble tools of the Soan industry have not been convincingly dated, pebble tools very similar to those found in the Bhimbetka breccia have been dated in east Africa at about 1,500,000 B.C.E. It is at least possible, therefore, that some of the Indian rock shelters were first occupied by predecessors of *homo sapiens*.

But the most significant result of these excavations is that every one of them produced a quantity of microliths. In some of the digs there was a series of tools leading up to but stopping with the Mesolithic; in others the series began with the Mesolithic and continued to recent times; still others showed the Mesolithic bracketed by one or more periods on either side; and some showed only

the Mesolithic. Moreover, microliths are almost invariably found on the surface, exposed by rain, near the painted shelters. As a result of these excavations, then, the association of the early rock-shelter paintings with the Mesolithic is a reasonable hypothesis.

In several excavations this hypothesis received additional support. A dig in a rock shelter at Adamgarh, forty miles south of Bhopal, by R. V. Joshi in 1964 disclosed pieces of hematite in a layer of black soil also con taming a large number of microliths. Hematice is one of the iron oxide pigments frequently used in shelter paintings. Material taken from above the hematite gave a carbon-T.4 date of c. 5500 B.C.E.

The technique of carbon-14 dating rests on the fact that all forms of life contain an unstable isotope called carbon-14. It is produced by cosmic rays at a known fixed ratio to the total amount of carbon in any living thing. After the death of a plant or animal the creation of carbon-14 stops and the amount then present diminishes by radioactive decay at a known rate. By comparing the known original ratio of carbon-14 to total carbon with the present ratio, and applying the known rate of decay, the period of time from the death of the object to the present can be approximately calculated. This technique is useful for dates back to a limit of 70,000 years with a small percentage margin or error.

Since this method of dating can only be applied to organic materials and since the pigments used in the paintings are all inorganic, the technique cannot be directly applied to the pigments. However, some of the successive layers disclosed by excavation contain carboniferous material, which can be dated. If there can be found, in a layer dated in this manner, a fragment of pigment, or a pigment-grinding stone, or a preliminary sketch matching the painting on the wall or ceiling above, the date of the painting can be inferred from the date of the layer in which the evidence was found. That the carbon found in the Adamearh dig, dated at about 5500 B.C.E. was taken from *above* the hematite pigment suggests that the fragment of pigment was used and dropped somewhat earlier.

In an excavation by Wakankar and Trivedi at Modi in 1959, a heap of hematite grains and { a painted stone were found in a layer just above one containing Middle and Late Paleolithic tools, and below layers containing Mesolithic microliths. The color of the powder grains matched that of the painted stone and also the color of the earlier of two superimposed paintings on the wall of the shelter above the excavation. Here, again, the inference is strong that the date of the earlier painting is early in the Mesolithic, or earlier.

In three of the eleven excavations by Wakankar and his associates at Bhimbetka between 1971 and 1975, pigment stones of red hematite, yellow ochre and blue black manganese were found in both Mesolithic and Chalcolithic layers. This strenghtens the inference that rock paintings occurred in the Mesolithic, with possible dates of 8000 to 5000 B.C.E. Even more impressive, however, was the discovery in Bhimbetka shelter III-A-28 of green pigments in the Upper Paleolithic layer. Green pigments have not been found in any more recent layer. There are at least ten painted shelters at Bhimbetka in which green paintings are superim posed by paintings which we have classified as Mesolithic. The inference that the green paintings are pre-Mesolithic and contemporary with Upper Paleolithic tools is therefore inescapable. It is not possible, however, to assign

calendar dates to these paintings since carbon-14 dates have not been determined.

Excavation in the upper layers of painted shelters and at a great many other places in India has produced broken pieces of pottery. So many of these have been found and studied during the past fifty years that, on the basis of material, color, texture, technique of manufacture, glazing, decoration, and provenance, they can definitely be associated with specific periods of prehistory extending from several centuries before the Indus Valley civilization to the beginning of historic records.

There are many locations in north and central India where pottery with decorative designs very similar to rock-shelter paintings has been found. The approximate dates of these specimens of pottery have been well established. Although it is possible that the shelter dwellers copied their pictures from pottery designs, there are two reasons for believing that the reverse process is more likely. First, the pottery designs are, in general, more abstract and conventionalized than the shelter paintings. Second, the movement of people was from the hunting-and-gathering culture of the rock shelters toward the settled agriculture of the floodplains and arable plateaus. To the extent that there are parallels between the two art forms it seems likely that shelter painting was the earlier of the two.

As a result of using all these approaches, we present the table of styles, periods, and dates on page 31, which may be accepted as at least an invitation to other scholars to improve upon it. The most controversial point in this table is the beginning. We believe that by suggesting the early Mesolithic for some locations

we are being conservative, for two reasons. First, on the basis of superimpositions, four styles, precede style 5, which seems quite securely anchored in the Mesolithic. Second, the green drawings, to which we have not assigned a style number, appear to be associated with the Upper Paleolithic. Our hesitation in being more definite about their date is based upon the fact that these green paintings are exclusively of people. But the paintings in our styles 1 and 2 are exclusively of animals; humans do not appear until styles 3 and 4, and then only in company with animals. How can these apparently earlier human stick figures without animals be explained? The logical hypothesis is that a late Paleolithic culture in central India was completely uperseded by a Mesolithic culture entirely unaffected by the artistic tradition of the preceding painters. But the evidence for this is still so scant that we leave the green diagings outside our formal system of numbered periods and styles.

Change in Continuity

On the basis in depth study that I undertook to understand the background, lifestyle, and thoughts of the early artists, I incorporated unique influences on my work germinating from the traditional practices of the locals in the hinterland of the country. The study of dating the art found in caves was also important from this persepective, became it explains a great deal about the psycho-social mindset. For this purpose, I first travelled to the Bhopal belt extensively studying the Bhimbhetika caves, town of Indore and its outskirts, along with the holy city of Ujjain during the Simhasth Kumbh.

After deep interactions with sculptors and folk artists of the region, I learnt of the simplistic figurative drawings that adorn their idol figurines, and wooden toys, etc. An insightful experience in Simhasth Kumbh was when I studied a Sadhu meditating in the blistering heat of central India with cow dung cakes lit on fire around him.

I spotted many ash smeared Sadhus at the Maha Kaaleshwar temple, where they would simply hold a pose for hours at length in deep meditation. This motivated me to borrow elements of their character and fuse them with the simplistic approach of painting techniques of the traditional artists of Madhya Pradesh, and bring it into my sculptures.

Taking my study forward, I travelled to Varanasi, and Ramnagar, hoping to find more such spiritual people who are outside of the ritualistic fabric of the society. I researched for many days and nights at the *Manikarnika* ghat which is known for the constantly ongoing cremation process at its grounds. However, what stuck me dearly was the vibrant splash of colours and stark contrast in shades that the city displayed in addition to more heavily ornamented Sadhus.

In the sphere of technique, I learnt armature making technique using hay and bamboo. These are originally deployed at the Ganga ghats for making huge umbrellas for Sun shade.

I adopted the haystack technique of armature making, and brought the bright *Tilakas* of ash smeared bodies of Sadhus in to my art works. I speaks of a stark contrast of the *"aghori"* style of living amalgamating with the neat and ritualistic *tilakdhari* trends on their foreheads. The two styles felt like a confluence of the folkish-non societal links with traditional-societal links.

This study has caused my work to grow and become exposed to a diverse spectrum of people and lives that live outside of metro cities, in the small by lanes of towns. Here, the traditional folk techniques have survived simultaneously with spiritual undercurrents.

The characters that influenced my work are those who do not conform to any norms of religion much like a visual artist, who too is constantly breaking rules in order to find new routes to creativity.

I used the technique of haystack and bamboo armature. The sculptures I made after the study, depict in their colour dripping technique – the simplistic painting approach of the Bhimbhetika caves; in the strong contrast of colour - the vivid hues experienced on the Ghats of Varanasi; and in symbols such as *'kamandal'*, *'chiruaat'* (clay pipes), etc – the earthy and rustic traditions and lifestyle in Indian culture.

With the recent travel experiences, knowledge of technique, skill sets and creative stimulation, I have created some new sculptures in the medium : Fibre Glass with acrylic paint for colour.

Rediscovering Iconography in Art

As already explained, I consider pictures showing only foraging as a way of subsistence as products of the Stone Age hunting and gathering peoples.

Although their absolute chronological time bracket is not yet clear, the indications that many of them belong to the Mesolithic period are convincing to me. Indications that the earliest of these pictures may go back to the upperpalaeolithic can neither be proved nor disproved yet. The reason for this is that the criteria for the "upperpalaeolithic" in India are not yet clearly defined. For this art we are left with time brackets from 25 000 B.P. to 5 000 B.P.

An antiquity of more than 20000 years is suggested by the finds of applied art from upperpalaeolithic levels . All these finds do not allow a stylistic comparison with a particular rock-art style.

The intricately engraved rhomboid-spiral design on a microlithic blade core from Chandravati was a surface find, which did not furnish any absolute date. Still, this find is important, since these intricate designs are a typical feature of the art of the early hunters and gatherers in India, but absent from the later art of the agriculturists and cattle-keepers

The search for the origins of rock-art in India is the search for the origins of art as a whole. The earliest rock pictures show a strictly codified repertoire in regard to

style and use of space, which clearly shows that they were part of a widely understood communication system. The oldest pictures are distinguished by the quality of the application of the pigment in very fine and controlled lines, which suggests that designs were applied on other surfaces and in different media as well.

The pictures of the hunters and gatherers encompass several stylistic variants which are more or less distinct.

The earliest pictures are often done in red, green and yellow pigments. Very few paintings of this style have actually survived; most often they are obscured by successive, overlaying pictures, sometimes in the same style but more often in an aggregation of later styles.

A thorough knowledge of many rock-art sites is necessary to analyse the thematic content of these subtle pictures. From such an analysis it becomes clear, that most themes dealt with in the pictures of the hunters and gatherers are available already in these earliest paintings.

The study of these paintings does not furnish any answer as to where this pictorial system came from, nor does it indicate any developmental stage as we would understand in an evolutionary sense. Of course, the absence of absolute dates makes a rigorous study of these questions difficult if not impossible.

All early rock-art in India is distinguished by a very high degree of craftsmanship and a uniformity of intricate design patterns. I believe that this stylistic and formal uniformity was only possible through a long and continuous development, encompassing the ideological make-up of prehistoric hunting and gathering cultures on the Indian subcontinent. How the earliest representations of

"art" look like, and in which remains we are actually able to see them, is a riddle whose solution lies in our own cognitive perception.

Nowhere at the known rock-art sites exists an indication of a "primitive stage" of art in the sense of non-proficiency in the act of application of pigments and lines.

The acute emphasis on naturalism of animal figures is conspicuous in comparison to the extreme minimalization of the human figures in the paintings of the earliest stylistic group.

A further dichotomy exists in the depictions of male and female figures. While women are drawn as quite bulky, men are reduced to stick figures. It has to be mentioned that depictions of females are extremely rare among the earliest paintings.

The dichotomy in the depiction between man and woman is not confined to the very first stylistic group but continues throughout the art of the hunters and gatnerers.

The "minimalized" human figures of the earliest pictures are shown in two different versions. In one their bodies are drawn in a typical "S-shape" fashion, in which the anthropomorph figures seem to be the embodiment of movement. The figures are shown as dancing, running or jumping. The second convention shows the human figures in a stiff manner, often draped with heavy adornment, headgears and other embellishments.

These stiff figures with overexaggerated adornments are often shown in peculiar body-positions, placed in the vicinity to comparatively huge animal

figures. These animals often show attributes of different species, as for example the body of a boar sporting the horns of a bovine. The bodies of these animals are at times decorated with intricate design patterns, which are so typical of the art of the hunters and gatherers, these "deified" animals are a typical entity in all stylistic groups in the art of the hunters and gatherers.

These pictures are organized in narrative sequences. But quite often these sequences are interwoven with mythologies into which it will be impossible for us to follow. What can we make of a scene where several persons are seen lying under a boar, or a bird perches on a reclining figure, besides whom stands an elephant?

Hunting groups are very common in all the stylistic phases of the mesolithic rock-art. In the earliest picture groups hunting scenes show dozens of hunters, who attack herds of animals with their microlith-barbed spears . Contrary to the depiction of anthropomorphs, which underwent considerable stylistic changes during the long span of mesolithic art, the convention for drawing animal figures remained unaltered.

Another phenomenon in rock-art is the use of X-ray depictions which is not confined to mesolithic paintings only.

In the mesolithic rock-art we can distinguish between an "anatomically correct" X-ray style and a "schematic decorative" X-ray style. While in the former intestines, heart, lungs and digestive tract are indicated, the latter shows decorative features, which are more pronounced than the anatomic ones.

In chalcolithic and historic paintings X-ray features are mostly confined to the depictions of fetuses inside the gravid animals

X-ray style was not only used to show anatomical internal features of animals, but also content of containers or subterraneous cavities, like rats in their burrows. Depiction of skeletons in animals, however, is conspicuously absent. Only in figures of fish are herring-bone patterns indicative of skeletal features.

"Schematic-decorative" and "naturalistic" X-ray patterns appear at times in the same stylistic group, and sometimes even in one and the same composition.

Some of the most conspicuous stylistic features of mesolithic rock-art in India are the intricate labyrinthine designs, composed of rhombic meanders or honeycomb patterns.

These design patterns are to be found exclusively in the mesolithic rock pictures. In several cases they are seen covering large spaces on rockwalls, as if made for surface decoration; in others they are to be found as body patterns on animal figures.

Quite often the square-shaped bodies of women are decorated with these intricate patterns as well. On male figures these decorations are rare, most probably on account of their rather slim depiction. Still, there are several instances, where intricate patterns have been found over male figures as well.
A striking parallel to these intricate design patterns exists in the upperpalaeolithic art of Mezin, a site at the Krimean, where similar patterns were found on ivory figurines of women as also on an ivory bracelet.

That these design patterns most probably had deeper significance than the pure decorative is suggested by several compositions where these designs form a thematic centre. One painting from Jaora shows a square, divided into several stripes, of which each one is decorated with a variety of design patterns, while the centre of the space is indicated by a circle. On the upper periphery of the square are shown fish between reeds or lotus stems with buds(?). Along the other sides are waterbirds. Besides the square are four flying birds. The whole composition looks as if the mesoiithic artist wanted to represent the cosmos, the square forming the earth, with water indicated by fish and reeds, and the regions of the space by flying birds.

Picture groups showing the hunting of animals are very common in the rockart *of* the mesolithic period. Indeed hunting might be the single most depicted theme in the rock paintings of this period. From these pictures we learn about the tools and weapons used during that time, as well as strategies used during the hunt.

The hunt was carried out not only in small groups in which two or three men cooperated, but also in big hunting expeditions, comprising several dozens of beaters who moved forwards in files driving the game towards the strategically positioned archers.

In these large organized hunting groups the narratrve character of the Indian rock-art is seen at its best. A number of minor incidents are woven in these large hunting panels. These incidents are intimate glimpses of life long past. It is a source

material, which is not available in any other archaeological material. There is the scene where one of the hunters grabs a fleeing piglet by its hindlegs, animals in their desperation turning against their hunters, a rhino dashing one of its attackers into the air.

The hunting groups also give fairly detailed descriptions of traps . Snares are arranged in a semicircle, into which a deer is driven, or frames of bamboo splinters!?) are fastened into the shrubbery to entangle the fleeing animals. Several mesolithic pictures also depict the trapping of animals in pitfalls .

Big animals such as elephants and rhinos were hunted. As the pictures show, these hunts were at times dangerous undertakings and several times hunters are shown in precarious situations. One hunting scene in Bhimbetka shows several hunters attacking a rhino. One of the hunters is whirled into theajr by the menacing horn of the animal. A painting from Chibbar Nulla shows a tiger mauling the arm of a hunter, whose companion tries to ward off the tiger with bow and arrow.

The harvest of fruit, tubers and roots, which surely were the main sources of food is shown comparatively rarely. The pictures show clearly that the daily "hunt" for vegetables was the domain of the women.

Women are never depicted with weapons of attack, like spears or bows and arrows. Their "means of production" was the digging stick and the basket during their foraging expeditions, and the quern and rubberstone at the campsites.

The picture scenes showing fruit gathering are not detailed enough to understand which kinds of fruit and seeds were collected, but they are detailed enough to show that they were collected in basket-loads and processed further on saddle querns.

Eating the collected foodstuff is shown as well in the rock paintings. A picture from Lakhajoar shows a man, a woman and a child, sitting at a well-laid table in the interior of a house. The meal laid out consists of some round -shaped food and two small fish. A vessel or container is in the hand of the man, while two more containers are placed nearby. The child is sitting at a similarly laid but smaller table. The dumpling shape of the food is also visible in several other pictures and might denote a ball-shaped mass of paste prepared from tubers or ground seeds. Since in two pictures this ball-shaped material is shown in compartmented baskets, it is more than fikely that it depicts a sort of staple food of pulpy nature which could also be stored for a while (Figs.: 150,226).

Besides collecting fruit, women are also depicted collecting small game. A most elaborate scene shows several women cooperating in catching rats from their subterranean burrow. This picture group from Jaora is one of the best examples of the narrative organization of rock-art, whose whole function seems to be to relate an activity in all its detail.

Similarly detailed is the scene of people catching fish from a small pond or waterhole. This picture can be seen in the same shelter in Lakhajoar which has the painting of a dining family.

Although the gender of the persons depicted in this scene is not clear, it is more than likely that a specific activity depicted in rock-art possesses a whole array of information which to the discerning viewer was seif-evident, as well as the gender of persons participating in certain activities.

In this fishing scene the apparent descriptive details go as far as to show a person's pouch hanging from the branch of a tree, another person's hand net placed at the ground to allow its owner to catch a turtle with both hands. Another person has strung several fish on to a rod for easy transport. Of course one does not expect that catching fish several thousand years ago was much different from today. Still, the quality of pictorial communication, whereby meaning -or at least parts of it can be conveyed over such chronological distances, is quite remarkable.

Research in prehistory is rarely confronted with direct information about a particular activity; generally we only get relics of activities, whose interpretations are ambivalent at best. This clarity of narration therefore tempts the viewer to believe that we are close to the understanding of the ambitions and intentions of the art of the stone age hunters and gatherers. A belief which fails in the case of many picture-groups where, although the narrative is in the same general stylistic idiom, we are not able to grasp the meaning of the array of signs and symbols.

Depictions of this kind are numerous in the mesolithic art. Indeed, many of the "rational" narrative scenes are embedded in larger picture sequences, whose meaning we cannot disentangle.

Some of the most prominent pictures-show iarge figures of "deified" zoomorph beings. Deified composite animals, closely resembling boars, seem to have a central position in the religious thinking of the mesolithic hunters and gatherers. These prominently drawn figures are seen not only in the Vindhya Region but also at rock painting sites in the Southern Deccan.

Large figures of deified animals are common in the rock_iart region in the vicinity of the city of Bhopal. Pictures of deified boars in the very earliest rockart style are known from Firengi, Bhimbetka and Bari Dant. But the cult around these deified boars seems to have been prevalent during the whole mesolithic period, since there are examples from all stylistic groups.

The depiction of large solitary animal figures in the chalcolithic and even historic rock-art might be a continuation of the veneration of deified animals during the mesolithic period, although transformed and reinterpreted by economic and ideologic reorientations.

Besides deified composite animals, we also find within mesolithic pictures a number of comparatively large and prominently drawn animal figures without any fantastic attributes.

Quite often there are drawings of diminutive human figures in close proximity to deified animals. Hunters with microlith barbed spears are shown chased by these beings, but they are never really shown killed or trampled upon. As a matter of fact, killing of man by animals or even by man for that matter is never depicted. Although several paintings are known in which incidents are depicted which might prove fatal to man, the painter did not

enlarge on the act of dying or killing itself. True, there is the picture where a rhino's horn has obviously thrown a man into the air or of the tiger mauling a man, which may or may not result in the death of a man.

The actual killing of man by man is never shown. I. know only two scenes where antagonistic groups of bow-men are sending their arrows against each other. Spears or arrows are not shown penetrating bodies of foes, nor are fighters seen falling. Even later rock-art pictures rarely show the killing of persons.

Within the large body of chafcolithic art, I know of only a single painting which shows a person obviously being struck down by another person with an axe . Fighters falling under the arrows of their foes are known only from the historic paintings in the Mahadeo Hills. There indeed, arrows are seen stuck through fighters' necks and bodies.

Cooperation of two or more persons is frequently shown in meosolithic rockart. Depictions of large hunting expeditions sometimes show more than a dozen beaters and hunters moving obviously along well marked guidelines. It is tempting to interpret particular duties also in a hierarchy of social relations, but in the absence of further information and more exacting studies it is impossible to be more precise on this subject. Still, we have to note the pictorial difference between the beaters and the much larger drawn bow man.

In several of these large hunting expeditions women carrying baskets are also prominently depicted . Scenes of several women foraging and jointly engaged in other activities are well documented. Earlier I have mentioned the scene where women are seen participating in the digging up of a subterranean burrow to catch

and kill the rodents hiding there . While one of the women digs open one of the entrances of the burrow, another is guarding the second opening.

Cooperation between man and woman on the other hand is very rarely shown. This is not surprising, given the well defined division of labour.

In several pictures where women and men figure together, no rational interpretation of their cooperation is possible. Some of these scenes are cryptic and best described as "cultic".

For example, one of these picture groups from Kathotia shows a man aiming his arrow at an uprightly standing huge fish, while several women are seen standing close by. Several of these picture groups could be described as dancing scenes in which the group of women is set apart from the group of men.

In the oldest stylistic painting groups, files of human figures, sometimes in strange postures are placed in large assemblies of disproportionately large animals.

A rather extensive picture group of long rows of humans, bent down to touch the heel of the man in front are known from Urden. This composition was found on the ceiltng of a very low shelter and has only survived in sections. Originally the chain of human figures seem to have formed more or less a circle along the periphery of the ceiling. In close proximity to the human chain are animals, of which several display fantastic features. One animal, although having the body of a buffalo, sports deer-like antlers and an elephant's trunk and tusks, is depicted close to several stick figures, which similarly are crowned with antlers. Another interesting depiction is of a rhino with two horns over its snout.

The depiction of a bovine head without body is reminiscent of a similar depiction of a detached head of a buffalo in a picture group from Kathothia , in which several people seem to dance around it.

A several meters long picture group in Astachal shows a chain of horizontal stick-men. At the end of this chain is a pair of human figures drawn upside down . Above this human chain are animals and several larger figures of man, armed with bow and arrows. A group of deers is directly below the topsy-turvy pair of anthropomorphs. The whole group is covered by a thick layer of sinter or dustpatina, which does not permit us to understand the stratigraphy of the particular figure-groups in this panel.

Snakes are rarely depicted in mesoltthic rock-art. But there is a class of snake-like beings which are best described as "mythic" comparable only to figures of the great rainbow snake of the Australian rock-art. Some of these "snakes." are several metres long and often have antlers or large ears. The human figures related to these beings are often diminutive, so that I presume that these "snake figures" represent a particular deity.

In the mesolithic rock paintings south of Bhopal there are several picture groups showing persons engaged in an unidentifiable activity. The persons are generally placed above a double line from which vertical wavy lines originate. Since all these groups show aquatic animals in their vicinity, the wavy lines might indicate water.

Dancing is one of those picture themes which is particularly obvious and also very common in mesolithic rock-art. Already some of the very earliest

paintings show long rows of dancers, detailed enough to understand different steps and to some extent even the choreography of these dances. Particularly interesting is one scene from Lakhajoar, which shows dancers on a artificial platform adjacent to a still higher scaffolding onto which two persons are carrying loads.

Wild animals are incorporated in several of these dancing groups. One painting group from Firengi shows several couples of dancers. The individual dancers stretch both arms, but strangely, never touch. Another remarkable dancing group comes from the same site showing several men and also one woman stretching their arms towards a triangular shape, which resembles a human head. Within this group of dancers is also a carnivore standing on his hind legs.

From these pictures we cannot draw any rational conclusion. It seems as though we are looking at the cosmos of cultic-theatrical activities, which might have been an impetus of early pictorial art.

Sexual intercourse between a man and a woman is rarely depicted in the art of the hunters and gatherers. Pictures on sexual themes which would be understandable to us are rare; I know of only two or three paintings which show male figures with obviously erect phalli. Primary sexual organs of women are not shown in mesolithic rock paintings at all.

A sociological interpretation of pictures showing cooperation between individuals or groups allows too many opposing explanations. A sex-defined division of labour is obvious. Cooperations of women and men hardly ever

appear, or, if they do, are not discernible to us. The few instances where man and woman are depicted together do not convey any rational narratives. The only picture where we see a man a woman and a child in a house eating together, may indicate the nucleus family as a cooperation unit; the scarcity of such evidences, however, rather speaks against it.

If hunting was the domain of the male, collecting and processing of eatables was the domain of women. This demarcation is almost too commonplace and cliche-like a view of sex-defined division of labour, but the pictures leave us littie choice to interpret them otherwise. It is invariably women who are seen carrying and emptying baskets and grinding fruit on querns.

The stylistic dichotomy in the depiction of male and female figures furnishes the woman with a certain static gravity compared with the figures of males, which are mostly reduced to stick figures, and generally shown in full movement, jumping and running.

Small children are only recognizable in close contact to their mothers. In one picture group a woman suckles her baby, in another group a woman obviously carries two children in a basket. Depictions of children in the rock paintings cannot be identified beyond doubt, since differences of sizes in a picture group could also denote hierarchies rather than body-sizes.

Another class of cooperation between man and woman can be seen in "cult activities". Cult activity is a term often used in the literature on prehistoric art to describe scenes which we are not able to interpret rationally. Still, within the large body of mesolithic rock-art exists a large number of paintings, in

which figures of men, women, animals, as well as implements are comparable to the recognized system of stylistic conventions --understandable in themselves but not in their relation towards each other.

The whole area of "cult" and "religion" is difficult to interpret. Demarcations between the rational and the irrational can only be drawn very subjectively by the individual researcher.

Weapons and implements are shown in the rock paintings almost exclusively in scenes relating to a particular activity. Much of the information on bows and arrows, spears and other implements we have is from depictions of hunting scenes. Spears and arrows are generally shown barbed with microliths, which is indicated by obliquely placed short dashes along the shafts. On account of the small size of rock paintings, most of the arrows and spears are too short to show the details of the microliths used or the exact construction of notches and fletchings. Only in rare cases are weapons drawn in finer details, even showing different types of arrows and spearheads.

The arrows are generally pointed, but there are several drawings of arrows showing a trapezoid or triangular point, indicating the use of a tranchet or broad-edged microlith at the tip. Since several detailed depictions of hunters show more than one type of arrows in their lots, I conclude that different game were bagged by different types of arrows. Broad-edged arrows shown in the paintings might indicate the use of transverse-edged microliths or wooden cones as arrowtips as they are still in use for bird hunting. Some arrows and spears show microlithic barbs set asymmetrically, while others have alternating barbs at either side of the shafts,

Microlith set tools were found from mesolithic levels in Mehrgarh in Pakistan. The microliths were set into bitumen which fortunatefy has conserved the implements . No such finds have yet been recorded from subcontinental India. The reason is most probably the soil condition in tropical regions, which does not facilitate the survival of organic material into which these microlithic tool elements have been fastened.

An exceptionally detailed drawing of an arrow from Lakhajoar shows two semicircular microliths set alternatefy into the sides of the upper third of the shaft. The missile's top is set with a transverse microlith, forming a broad cutting edge.

The shaft-ends of arrows are generally notched to facilitate the placing onto the bow's sinew. Fletching for flight stabilization is commonly depicted. Several pictures show decorations on arrows and spears, which might be explained as ownership-marks, as no other functional purpose can be made out.

A very detailed painting from Urden portrays a man holding a particularly long spear which shows a number of technical features generally related to harpoons. The upper third of this spear might be detachable, since it is connected by a decorated string to the shaft. It is possible that the point of the spearhead detached itself after impact into an animal's body, while the shaft still hung to it by the connecting string, thus hampering the wounded animals flight.

The use of bow and arrow is already shown in the very earliest stylistic groups of Indian rock-art, but generally the bows are too schematic to allow a detailed identification of their finer construction principles. It seems probable

that the bows were strung with fibrous cords, and not by bamboo-splinters as shown in historic rock pictures from the Mahadeo Hills. Arrows are generally held bundled in one hand or fastened to the middle (by a belt?). No quiver is ever shown in mesolithic rock pictures.

The hunters carried nets or pouches made of netting strung to their waist, which when loaded were carried at the back extending from a headband, very much like porters in the north-eastern parts of India still do. Besides the large baskets and carrying nets the hunters also had small pouches which were hung over the shoulder.

Load-bearing men are not commonly depicted in the rock pictures. Much more common are women carrying baskets on their back. In the large foraging scenes women carry baskets of different shapes. They are seen transporting loads like fruit, rats and in one case a woman is even shown carrying two children in a flat-bottomed basket.

In the mesolithic pictures of the Central Vindhya Region loads are always carried in baskets or pouches, extended from a headband, at the back of the carrier.

In the pictures of the hunters and gatherers of the Northern Vindhya Region, particularly at the sites in the Mirzapur District the loads are shown transported by the help of porterage yokes or extended from stakes which are carried over the shoulder of two persons in a fife.

The carrying of loads by the help of porterage yokes was otherwise the usual load transportation technique during the chalcolithic and historic periods only.

The inventory of the foraging peoples also included containers for liquids, but these are shown --or recognized- rarely. Within the "dining-scene" mentioned earlier, two oval containers, linked together by a rope are to be seen within reach of the persons eating. A further depiction of a container from which a rriari is drinking exists in Bhimbetka. Further South, in Badami exists a painting of a person sitting in a hut, with two containers placed close by

A further important implement, which was found in large numbers during excavations at mesolithic sites, are the barrel-shaped stone-grinders, which were used over stone slabs and functioned as querns. The use of grinding stones is shown in a few paintings from Kathotia. The pictures clearly show kneeling women working at these querns, obviously processing fruit which other women are seen unloading.

Conspicuously missing in rock pictures are depictions of hammers or axes, which are virtually absent as well from the mesofithic material as far as known from excavations. In the Southern Deccan, at a site near Badami, a solitary and unique picture shows a man holding a hoe or a pick-axe-like implement, which might have been fashioned from an antler piece.

All other artifacts shown in the mesolithic paintings are personal adornments and clothes, which show a considerable variety and complexity. Even the very earliest pictures show a considerable sophistication in dresses and

adornments. Some of these seem overexaggerated and hardly represent "every-day" wear. They might have been festivity-adornments or indicated a certain hierarchical status of the wearer. The pictures of course do not disclose of which material these adornments were made.

Of considerable interest are depictions of long strips of wavy cloth, commonly worn by men. The male attire consisted of a long waistcloth, which was left to fall in a train, and seemed to have been soft enough to sway freely according to the movement of the wearer. The pictures clearly show that basketry and netting were known, so that we can presume that drawing of fibres must have ben practised, and it is not improbable that weaving of textiles was known as well, although not a single picture actually shows this craft. Women are generally dressed with in short, frock-like pieces of cloth around the middle. The upper part of the bodies in men as well as in women are generally left bare, except in a few instances when they wear a piece of cloth over their shoulder.

The highly abstract depiction of humans makes it difficult to recognize the finer details of clothes or adornments. And since the square bodies of women are often filled in with intricate designs, any differentiations between adornments, dresses or body-decorations are quite impossible.

Within the long time-span over which stone age food-gatherers produced rock pictures, we see no significant changes in the themes of rock-art. Although there are no abrupt stylistic changes, subtle differences between the earliest pictures and the later ones are obvious.

The strict minimalization in depicting human figures in the earliest stylistic groups gives way to a more physical perception of the human body. Not in a single mesolithic painting was a more naturalistic image of men ever attempted, contrary to the depiction of animals, which -although caught in stylistic reductions and formalism as well- are portrayed much more bodily and convey a more realistic image.

The heads of the humans are shown as triangular, square, or round, without any attempt to draw eyes noses or ears, *in* some of the earliest depictions of human figures heads are shown as round shapes with a depression, indicating the mouth. In a few picture groups small round circles are drawn in front of the mouth, obviously indicating chanting or singing.

The representation of animals does not undergo many stylistic changes in the art of the hunters and gatherers. In the later stylistic groups there seems to be a tendency towards more conventional stereotypes of the depicted animals. But in no case are the animals drawn as repetitively as in the later pictures of the agriculturists and cattle-breeders.

The mesolithic animal figures were always defined by a single contour tine, which included all nuances of movement. Contrary to the chalcolithic animal figures, which were "assembled" from a rectangular shape which invariably formed the body, while legs, tail, neck and head, and in the case of cattle a hump, were attached to it, In this way all the animal figures have an air of repetitiveness and are to be differentiated only by specific features like antlers, tusks and horns.

While in mesolithic pictures the animals' movements are shown individually adapted to the particular theme of the pictures, like standing, jumping, browsing, looking backwards or stumbling after the impact of an arrow, the chalcolithic animal figures are arrayed like a herd of cattle walking in rows and files. The mesolithic animals are wild animals in every respect; the chalcolithic are always domesticated.

The mesolithic artists used space quite freely and extended their compositions in every direction, although a general horizontal pictorial organization can be observed. During the chalcolithic the pictorial composition follows invariably a well defined, straight, horizontal line. Natural strains in the rocks and irregularities in the rock structure, like inclusions of stones or cracks in the rock surface, were readily taken up by mesolithic artists as stimulus for figures. A crack in the rock could be transformed into the back-line of an animal, defining its size and shape.

Most of the individual figures of mesolithic pictures are no more than 30 cm high. Still, there are a number of figures far surpassing this size. Some of the portrayed animals are life-size or more. Many of these large figures are in a fragmentary state of preservation, and it is not easy to understand the connection between these large figures and the multitude of smaller figures in the vicinity. Still, some of the large deified animals, which are known from the Central Vindhya Region, indicate that they were the centre of some cult activity. Paintings of animals larger than life are also known from South Indian rock-art sites. In the Benakal Forest exists a zoomorph figure of more than 11 m length;

several anthropomorph figures in the same region are also depicted larger than life.

As already mentioned, there is no pronounced stylistic or thematic change within the long period of the art of the hunters and food-gatherers.

The themes of the mesolithic rock paintings from the Central Vindhya Region are more or less identical with the paintings in the Chambal Valley, although the rather plump forms of the figures there would lead the superficial viewer to think he was seeing an altogether different style . These pictures were done originally in white, which has been weathered away since long. What is left are the contour lines in red. A similar effect is visible of the pictures at the site Gupha Masir, where besides red as the colour of the contour lines, green was used as the in-filling colour. Some exceptionally well-preserved mesolithic polychrome picture groups are seen near Bori in the Mahadeo Hills, which still give a good idea of what these multicoloured paintings might have looked like at other sites as well. Indeed, some of the best preserved polychrome paintings of mesolithic an in India are known from Bori.

The pictures of the hunters and food-gatherers found in The northern parts of the Vindhya Hills, are stylistically quitedifferent, particularly in the district of Mirzapur. The thematic analysis of these pictures clearly states that they were done by food-gathering people, but formally and stylistically they are comparable to the paintings of the chalcolithic period in other parts of the Vindhya Region. In the Mirzapur District however, these pictures do not figure domesticated cattle, metallic weapons or depictions of carts and chariots. Humans in these pictures are often no more than conical forms, without much further differentiation of the head or other bodily features. Some of the more square-shaped anthropomorphic figures might also depict women. The activities of people in these paintings remain very symbolic. "Hunting-scenes" consist mostly of a centrally placed animal standing stiff and motionless, receiving the deadly spear in its chest or hindquarters by 3 similarly stiffly depicted anthropomorph.

The human figures here are always considerably smaller than the animals. The theatric organization of these paintings compares well with the chalcolithic paintings funher west in the Vindhya Hills.

The depiction of spearing fish from boats is a unique theme in Indian rockart. All the known fishing scenes come from sites on top of the escarpment towards the River Son. The boats are generally manned by two persons, one at the stern handling the paddle, the other spearing fish or turtles from the bow. The construction details of these boats are not very clear from these sometimes tiny pictures. Some boats appear to have outriggers attached, while others have none.

Several picture groups in the Mirzapur District show compositions of figures grouped in proximity to abstract signs or symbols. These symbols consist of concentric circles and radially attached squares at the periphery . In the vicinity of these symbols hunting-groups are to be found.

Depiction of rhinos is very common in the rock paintings of the Northern Vindhya Mountains, contrary to regions further west in the Vindhyas, where rhinos are very rare. Several extensive scenes show hunts of rhinos and a few scenes show the butchering of these animals.

It is almost impossible to derive at a further chronological stratification of the pictures of the hunters and gatherers in the Northern Vindhya Hills. The limited number of paintings does not furnish us with many instances of overpainting, and where I did find them, the styles of the earlier and later paintings matched. Only on one of the rock walls did I find earlier pictures of comparatively large figures of men painted in a yellow pigment, which might indicate an earlier rock painting stratum. The homogenous stylistic and thematic content of the pictures of the hunters and gatherers may indicate a shorter span of time in which these pictures were fashioned. However, the pictures of the Northern Vindhyas show a basically different development of stylistic evolution than what was observed at the much richer sites further west in the Vindhya Hills.

The pictures of the Mirzapur Region do not depict the extensive narrative scenes with all those minute details in which the pictures of the food-gatherers excel.

This is all the more regrettable since the fringes towards the Gangetic Plains were some of the most important zones of indigenous economic transformation during the mesolithic period. From here stem some of the earliest indications of the transformation from foraging to agriculture and animal-domestication, the use of pottery and also complex burial customs in cemeteries during the later phase of the mesolithic. This region is, as far as prehistory is concerned, one of the best researched in India. From here were found the upperpalaeolithic bone artifact from Lohanda Nullal, asalsoan "altar" consisting of a raised circular platform on which was a triangular engraved "idol". It is most unfortunate, that till now no

connection has been found between the rock-art of this region and archaeological remains, like transportable pieces of art from a particular stratum.

Rock-art of a distinctly different style and technique was found in the Sambalpur and Sundargarh Districts of Orissa. These rock engravings and paintings show unique traits in their style and use of pictorial codes. The narrative progress of picture compositions is here replaced by abstract and zoomorph figures. Although the first notices of this rock-art go back to the discovery of the Vikramkhole rock shelter in the twenties of this century, scientific interest centered mainly around the speculation whether or not these engravings and paintings were "letters" of a "Proto Brahmi Script". That these pictorial remains, which on account of their extremely abstract nature convey no direct information, should draw so much "scientific" interest is rather surprising. However, it was only within the last few years that a good number of rock pictures were found in the Sundargarh and Sambalpur Districts, which allow more relevant observations on possible stylistic affinities.

The engravings and paintings show abstract square, triangular and ovalshaped figures, filled in with parallel wavy lines or with criss-cross patterns, as well as highly schematic animal figures resembling lizards, bovids, antelopes and birds. Anthropomorph figures are totally absent.

Some of these pictures are partly engraved and filled in with pigments, but most of the figures are only painted. The pigments used are different shades of red, white and yellow. The colour green I have found only at one site in traces. In all the pictures of this group no domesticated animals are depicted.

Several of the more abstract square figures show fillings in the "intricate design patterns", familiar from mesolithic art all over India. The rather plump portrayal of animals in these pictures compares well stylistically with the animal figures of the later mesolithic paintings found in the Southern Deccan. Only a single picture group in Chhenga Pahar shows three human figures of which one holds a bow and a barbed arrow. These three very small figures are stylistically comparable to the mesolithic paintings in the Western Vindhya Region.

Within the rock-art of the food-gatherers in the Southern Deccan, two more or less well-defined stylistic groups -which here will be labelled "earlier" and "later"- can be identified. The earlier group corresponds stylistically to the mesolithic rock-art in the Vindhya Region. In particular the drawings of the animals show *a* high degree of similarity. The animals are drawn quite naturalistic, while the human figures are stylized. Although there are only very few picture groups which show interactions between animals and humans, the dichotomy between the "naturalism" of animal depictions and the "schematization" of contemporary human depictions is quite clear, even if not as pronounced as in the mesolithic paintings of the Vindhya Hills

The rock pictures of the food-gatherers in the Southern Deccan are stylistically and chronologically better classifiable. Although only about thirty sites with a little more than two painted surfaces were found over the huge area of the Southern Deccan, the thematic and stylistic relations with the paintings from the Vindhya Regions allow us to draw conclusions concerning the chronology of these pictures. Of further advantage for the evaluation of the chronology of these paintings is the fact that the pictures of the hunters and

gatherers are succeeded by the stylistically and thematically distinct pictures of the neolithic/chalcolithic cattle-keepers and agriculturists. This at least serves as a general demarcation between the pictures of the food-gatherers and those of the cattle-keepers and farmers.

Narrative scenes are rarely found in the rock-art of the Southern Deccan. Most pictures are in a very fragmentary state of preservation. The more important early paintings come from sites in the ragged sandstone massif in the vicinity of Badami in the Bijapur District of Karnataka. The human figures in these paintings show a very elegant style, in which the body is extremely elongated, while the legs are drawn quite strong and detailed. The extreme dichotomy between male and female figures, so pronounced in the mesdlithic art in the Vindhyas is absent in the paintings of the hunters and gatherers of the Southern Deccan. Eyes were prominently drawn in human figure as well as in animal figures. Humans are invariably shown with two eyes, which means that the head is drawn *en face*, while the animals' heads are shown in profile so that only one eye is visible- This is a remarkable contrast to the mesolithic pictures from the Vindhya Hills, where eyes are hardly ever shown in animals and still more rarely in humans. *En face* depictions of human figures are unknown there altogether.

Weapons and implements are rarely depicted in the earlier mesolithic paintings of the Deccan. Two depictions of barbed spears and only one of bow and arrow and a single depiction of a hoe-shaped implement is all these pictures tell us about the material culture of their makers. Basket and digging stick -the paraphernalia of mesolithic women-- are depicted but once at a rock wall near

Badami, where also a constructed hut is shown in which a person sits. Besides the person there are two containers, one round and the other square.

More detailed than weapons and implements are the portrayals of the hairdo and head decorations. At the site of Velary Kombay in the Nilgiri District of Tamil Nadu these head decorations are of fantastic dimensions. Women are shown wearing braids which at times seem to have been decorated" with feathers(?).

The clothes for both sexes consist of a single piece of fabric, worn around the waist, with a train falling down in front and in the back. The upper body seem to have been left bare in both sexes. But it should be remembered that the portrayal of humans is too schematic to understand detailed features like clothes *or* body decorations. Several depictions of humans are decorated with intricate rhombic patterns.

Pictures showing the interaction between men and animals or between humans themselves are rarely understandable. The partial conservation of the picture groups obscures probable narrative elements.

In Hiregudda near Pattadkal there is a painting of a man and a woman who are followed by a very large boar. The man holds a bow in one hand. The picture shows the heart and lungs of the boar in a "naturalistic X-ray style", while the abdomen is filled in "decorative X-ray style".

Several other paintings show antelopes, in front of which persons are seen standing with upraised arms. Several of these male figures are detailed enough to show the genitals.

Hunting scenes are not available in the mesolithic rock pictures in the Southern Deccan. A solitary and only partly preserved picture shows a man who thrusts his spear into the hindquarter of a faovid.

The mesolithic pictures lack all the narrative aspects which are so obvious in the Vindhya Region. The few exceptions belong to the earlier stylistic group of the mesolithic art. Pictures of the later stylistic group show mostly solitary animal figures or groups of animal figures which are hot bound together by any obvious thematic link which could be understood rationally by a modern viewer.

Anthropomorph figures are quite rare, and come almost exclusively from sites in the Benaka! Forest and from the regions in the vicinity of the ancient city of Vijayanagar.

Most animals depicted are herbivores, which "account for about 75% of all animal figures available. Pigs, antelopes and bovids account for approximately half of the herbivores; the other half's species cannot be identified. Carnivorous animals are numerically rare, but very prominently depicted wherever they are found. Fish are quite common and available at all rock-art sites. Rhinos and birds are conspicuously absent in the rock-art of the Southern Deccan.

The large depiction of a man on the inclined ceiling in a shelter near Mallapur in the Benakal Forest is a good example for the more naturalistic treatment of the human body. Figures of women are mostly drawn in profile, with a bent-forward upper body, and the hands held upwards. In this way only one leg and often only one arm is shown. But as already mentioned, since anthropomorphs are not very common in this group, stylistic conventions are

not very well defined. Still, it seems that within this style the two distinct conventions to depict humans are contemporaneous. While there are the rather naturalistic depictions of male figures which are often strictly en *face*, the women are in profile, with bent forward body.

In the later mesolithic pictures, mainly herbivores are drawn. These pictures lack the elegance and movement of the earlier pictures of this period. A significant stylistic difference between the animal figures of the earlier and later styles is that while in the earlier animal depictions four legs are shown, in the later only one front leg and one hind leg is depicted. These later figures are drawn somewhat roughly. Several figures of this stylistic group are rather big, some of the animal figures more than life-size, and the application of colour, given the large size, apt to be heavy-handed. These paintings were mostly done in red and white parallel lines, of which only traces of white have remained.

The dichotomy of "naturalistic" animals versus "schematic" human depictions has obviously been given up in these paintings. Some of the anthropomorphs are surprisingly "naturalistic".

Another group of anthropomorphs is represented by figures *en face,* which at times are transformed to almost geometrical symbols.

Another interesting and unique anthropomorph depiction is a mask-like figure in a large painted composition at the site of Aiampadi in the South Arcot District of Tamil Nadu. The paintings at this site are mainly confined to an approximately 6 metres long shelter wall, which is covered by white drawings of mixed anthropomorph and zoomorph character. Several figures also resemble

plants. These paintings overlay drawings of bovids, which stylistically conform to the earliest stylistic groups of the hunters and gatherers in the Southern Deccan.

The repertoire of rhe later mesolithic art in the Southern Deccan also includes a number of stencilled and outlined human hands. At several of these handprints, individual fingers or pans of fingers seem to be missing or mutilated. The paintings of the later mesolithic groups do not convey narrative scenes, but the groupings of many of these pictures are definitely not incidental.

This later group of mesolithic paintings are to be found at almost all rockart sites in the Southern Deccan, and also in the Henanegala Galge in Sri Lanka.

Besides these paintings, there exist a number of pictures at many sites in the Southern Deccan, which cannot -stylistically or otherwise- be compared with other pictures. The highly abstract nature of these pictures also does not facilitate a thematic or technological analysis.

One of the most important of these rock-art sites was found in the Lankapalli Reserve Forest in the Kammam District of Andhra Pradesh . At a quartzite rock wall at Bainete Banda are several dozens of finely engraved hoof and paw impressions, partly filled in with red pigment,

Most common are impressions of bovine-hoofs and those of cervids, Pawprints of carnivores seem to belong mostly to leopards. Within the large number of engraved animal footprints there are also several examples of engraved human feet of different sizes. In between these hoof and paw engravings there are also

engravings of herbivorous animals. These engravings as well are partly filled in with pigment, and partly enlarged by painting.

Besides these animal figures there are also a number of anthropomorphic figures, which too are engraved and filled in with red paint, or just painted. These anthropomorphs(?) are sometimes arrayed and placed in groups. Their anthropomorphic character is at times not very expressive. At times these figures are furnished with arms and legs, and hold some implements in their hands. Another type of anthropomorphic figure, in several instances, overlays the former.

At this rock wall of Bainete Banda there *are* several successive layers of paintings, clearly belonging to different periods. Several large paintings show trees with honeycombs hanging from their branches . It should be mentioned that at the Bainete Banda cliff several spots are haunted by colonies of bees, whose honey is still regularly collected by people. Small figures of humped cattle and one painting of a lion in the best of classical style, leave no doubt about the historical origin of the latest of these pictures.

Conventional Media & unconventional Approach

Folk produced from an indigenous art encompasses art culture or by peasants or other laboring trades people. In contrast to fine art, folk art is primarily utilitarian and decorative rather than purely aesthetic. Folk Art is traditional characterized which rules by а naive style, in of proportion and perspective are not employed.

As a phenomenon that can chronicle a move towards civilization yet rapidly diminish with modernity, industrialization, or outside influence, the nature of folk art is specific to its particular culture. The varied geographical and temporal prevalence and diversity of folk art make it difficult to describe as a whole, though some patterns have been demonstrated.

Study and observation of the world around us reminds us of the continuity embedded in our civilization. The activities, expressions, and emotions have remained the same , and only the situations/stimuli has changed. The act of enjoying a ride on the swing and feeling the wind blow into our face is a universal emotion, enjoyed by men and women of all generations alike. Centuries ago in India, womenfolk rode the swing in the month of Sawan to celebrate the onset of monsoon. In today's urban milieu, the month of Sawan is not celebrated per say, however young girls still enjoy playing on the swings in parks with their friends.

I have tried to touch upon these simple acts that show the subtle continuity in humankind's civilization over centuries, and add into them contemporary characteristics to bridge the gap between fine art and folk art. Folk art expresses cultural identity by conveying shared community values and aesthetics. It encompasses a range of utilitarian and decorative media, including cloth, wood, paper, clay, metal and more. Folk art reflects traditional art forms of diverse community groups — ethnic, tribal, religious, occupational, geographical, age- or gender-based — who identify with each other and society at large. Folk artists traditionally learn skills and techniques through apprenticeships in informal community settings, though they may also be formally educated. As a fine artist, I have tried to enrich my sculptures, their theme, method of creation, and presentation by picking influences of the folk art's technique, motifs, and themes, and give them a contemporary spin without breaking the thread of continuity. My attempt while researching and studying the topic was to increase the aesthetic value, and focus less on utilitarian approach. Rather my focus was to capture the vibe of the various tribals, religious, and ethnic currents seen in folk art, and

present them in a form that is relevant and relatable in today's urban and modernized world.

Study of different media:

Clay:

While studying the craftsmen from the Saurashtra region, I observed that the clay from this region fires to a golden pink at about a thousand degree centigrade. The early stages consist of cleaning and stirring the clay in the machine, then submerging the clay in water until it has consistency of honey, as the potters like to say (the ancient Orientals let their clay decay and rot under the water, to mature like wine for their heirs). And then kneading it to remove the air bubbles and bringing it to as point where it is gently humid, firm but plastic. All this is usually done collectively by craftsmen as a team. They sit on their haunches like a potter of all ages and put together 'sculpted' tiles in a tablet to form the pattern the pattern of a story.

But I must clarify, that the craftsmen do not strictly speaking sculpt in clay. I watched them use their delicate fingers now stiffened to pat the clay, now cupped to plump the dough: the clay patties are rolled and cut into strips with wire, then waved, arched, and folded into bodies and attached to the

clay base with a smear of slip, the honeyed clay; and if the form is solid, by merging the edge to the base. They then adds accessories : teeth, earrings, decorative patterns etc. These are pressed, pinched, and incised with the simplest tools, the two fingers, a little spatula, or a splinter of bamboo. There are also knife sharp slits in the body of the figurine that leave frayed ridges; sometimes the slit clay curls into fronds to make the pouting lips of a girl. The versatile working methods pts the craftsmen into the combined roles of a baker, mason, a tailor, a primitive surgeon, a taxidermist, a doll maker, and last but not the least – a potter. All this together makes them compound craftsmen making clay figurines/collages that are astonishingly alive as they are technically accessible.

The clay biscuits are then fired in heat ovens at high temperatures to make it more durable and all- weather friendly. The craftsmen use natural colors and dyes that can withstand high temperatures, along with glaze to make beautiful and colourful pieces of sculptures. Metal (Bronze):

- Lost Wax Casting process: The process used since the Harappan times
- 1. **Model-making.** An artist or mould-maker creates an original model from wax, clay, or another material. Wax and oil-based clay are often preferred because these materials retain their softness.
- 2. Mouldmaking. A mould is made of the original model or sculpture. The rigid outer moulds contain the softer inner mould, which is the exact negative of the original model. Inner moulds are usually made of latex, polyurethane rubber or silicone, which is supported by the outer mould. The outer mould can be made from plaster, but can also be made of fiberglass or other materials. Most moulds are made of at least two pieces, and a shim with keys is placed between the parts during construction so that the mould can be put back together accurately. If there are long, thin pieces extending out of the model, they are often cut off of the original and moulded separately. Sometimes many moulds are needed to recreate the original model, especially for large models.

- 3. Wax. Once the mould is finished, molten wax is poured into it and swished around until an even coating, usually about ¹/₈ inch (3 mm) thick, covers the inner surface of the mould. This is repeated until the desired thickness is reached. Another method is to fill the entire mould with molten wax and let it cool until a desired thickness has set on the surface of the mould. After this the rest of the wax is poured out again, the mould is turned upside down and the wax layer is left to cool and harden. With this method it is more difficult to control the overall thickness of the wax layer.
- 4. **Removal of wax**. This hollow wax copy of the original model is removed from the mould. The model-maker may reuse the mould to make multiple copies, limited only by the durability of the mould.
- 5. **Chasing**. Each hollow wax copy is then "chased": a heated metal tool is used to rub out the marks that show the parting line or flashing where the pieces of the mould came together. The wax is dressed to hide any imperfections. The wax now looks like the finished piece. Wax pieces that were moulded separately can now be heated and attached; foundries often use registration marks to indicate exactly where they go.

- 6. Spruing. The wax copy is sprued with a treelike structure of wax that will eventually provide paths for the molten casting material to flow and for air to escape. The carefully planned spruing usually begins at the top with a wax "cup," also called the runner that carries the molten metal inside the mould. This is attached by wax cylinders called risers to various points on the wax copy which carry out the trapped gases during the pouring of the metal. The spruing does not have to be hollow, as it will be melted out later in the process.
- 7. Slurry. A sprued wax copy is dipped into a slurry of silica, then into a sand-like stucco, or dry crystalline silica of a controlled grain size. The slurry and grit combination is called ceramic shell mould material, although it is not literally made of ceramic. This shell is allowed to dry, and the process is repeated until at least a half-inch coating covers the entire piece. The bigger the piece, the thicker the shell needs to be. Only the inside of the cup is not coated, and the cup's flat top serves as the base upon which the piece stands during this process.
- 8. **Burnout.** The ceramic shell-coated piece is placed cup-down in a kiln, whose heat hardens the silica coatings into a shell, and the wax melts and runs out. The melted wax can be recovered and reused, although it is often simply burned up. Now all that remains of the original artwork is the negative space formerly occupied by the wax, inside the

hardened ceramic shell. The feeder, vent tubes and cup are also now hollow.

- 9. Testing. The ceramic shell is allowed to cool, then is tested to see if water will flow freely through the feeder and vent tubes. Cracks or leaks can be patched with thick refractory paste. To test the thickness, holes can be drilled into the shell, then patched.
- 10. **Pouring.** The shell is reheated in the kiln to harden the patches and remove all traces of moisture, then placed cup-upwards into a tub filled with sand. Metal is melted in a crucible in a furnace, then poured carefully into the shell. The shell has to be hot because otherwise the temperature difference would shatter it. The filled shells are then allowed to cool.
- 11. **Release.** The shell is hammered or sand-blasted away, releasing the rough casting. The sprues, which are also faithfully recreated in metal, are cut off, the material to be reused in another casting.
- 12. **Metal-chasing.** Just as the wax copies were chased, the casting is worked until the telltale signs of the casting process are removed, so that the casting now looks like the original model. Pits left by air bubbles in the casting and the stubs of the spruing are filed down and polished.
Wood:

Wood has been one of the most easily accessible medium for craftsmen to work with. The abundance of timber in the countryside has led to truly novel use of wood in folk art. Apart from carving, burnt wood technique has been used to give colour to the already textured medium.

A seasoned log is used to make sure the textured strands do not end up fraying in and destroying the sculptural form. The log is then chiseled as per the pattern designed by the craftsmen. The final product is smoothened at the edges to avoid sharpnels jutting out. Sometimes wooden artefacts are hand painted into toys or souvenirs.

Indian art consists of a variety of art forms, including plastic arts (e.g., pottery sculpture), visual arts (e.g., paintings), and textile arts (e.g., woven silk). Geographically, it spans the entire Indian subcontinent, including what is now India, Pakistan, Bangladesh, and eastern Afghanistan. A strong sense of design is characteristic of Indian art and can be observed in its modern and traditional forms.

The origin of Indian art can be traced to pre-historic Hominid settlements in the 3rd millennium BC. On its way to modern times, Indian art has had cultural influences, as well as religious influences such as Hinduism,

Buddhism, Jainism and Islam. In spite of this complex mixture of religious traditions, generally, the prevailing artistic style at any time and place has been shared by the major religious groups.

In historic art, sculpture in stone and metal, mainly religious, has survived the Indian climate better than other media and provides most of the best remains. Many of the most important ancient finds that are not in carved stone come from the surrounding, drier regions rather than India itself. Indian funeral and philosophic traditions exclude grave goods, which is the main source of ancient art in other cultures.

The first known sculpture in the Indian subcontinent is from the Indus Valley civilization (3300–1700 BC), found in sites at Mohenjo-daro and Harappa in modern-day Pakistan. These include the famous small bronze male dancer. However such figures in bronze and stone are rare and greatly outnumbered by pottery figurines and stone seals, often of animals or deities very finely depicted. After the collapse of the Indus Valley civilization there is little record of sculpture until the Buddhist era, apart from a hoard of copper figures of (somewhat controversially) c. 1500 BCE from Daimabad. Thus the great tradition of Indian monumental sculpture in stone appears to begin relatively late, with the reign of Ashoka from 270 to 232 BCE, and the Pillars of Ashoka he erected around India, carrying his edicts and topped by famous sculptures of animals, mostly lions, of which six survive. Large amounts of

figurative sculpture, mostly in relief, survive from Early Buddhist pilgrimage stupas, above all Sanchi; these probably developed out of a tradition using wood that also embraced Hinduism. Indeed, wood continued to be the main sculptural and architectural medium in Kerala throughout all historic periods until recent decades.

During the 2nd to 1st century BCE in far northern India, in the Greco-Buddhist art of Gandhara from what is now southern Afghanistan and northern Pakistan, sculptures became more explicit, representing episodes of the Buddha's life and teachings. Although India had a long sculptural tradition and a mastery of rich iconography, the Buddha was never represented in human form before this time, but only through some of his symbols. This may be because Gandharan Buddhist sculpture in modern Afghanistan displays Greek and Persian artistic influence. Artistically, the Gandharan school of sculpture is said to have contributed wavy hair, drapery covering both shoulders, shoes and sandals, acanthus leaf decorations, etc.

The pink sandstone Hindu, Jain and Buddhist sculptures of Mathura from the 1st to 3rd centuries CE reflected both native Indian traditions and the Western influences received through the Greco-Buddhist art of Gandhara, and effectively established the basis for subsequent Indian religious sculpture. The style was developed and diffused through most of India

under the Gupta Empire (c. 320-550) which remains a "classical" period for Indian sculpture, covering the earlier Ellora Caves, though the Elephanta Caves are probably slightly later. Later large scale sculpture remains almost exclusively religious, and generally rather conservative, often reverting to simple frontal standing poses for deities, though the attendant spirits such as apsaras and yakshi often have sensuously curving poses. Carving is often highly detailed, with an intricate backing behind the main figure in high relief. The celebrated lost wax bronzes of the Chola dynasty (c. 850–1250) from south India, many designed to be carried in processions, include the iconic form of Shiva as Nataraja, with the massive granite carvings of Mahabalipuram dating from the previous Pallava dynasty. The Chola period is also remarkable for its sculptures and bronzes. Among the existing specimens in the various museums of the world and in the temples of South India may be seen many fine figures of Siva in various forms, Vishnu and his wife Lakshmi, Siva saints and many more.

India has a rich cultural folk tradition. Folklore arts, beliefs, rites and rituals, myths, and rural handicrafts are factors that enrich our folk-tradition. They became well-known as knowledge transmitted by oral tradition. Folklore has an important role in handing down social norms and religious knowledge and wisdom and in keeping the social structure stable. Folklore arts, beliefs, rites and rituals, myths, rural handicrafts etc. are factors that enrich our folk-tradition. They tradition. They have become well known as knowledge transmitted by oral

tradition rather than written branches of knowledge. Folklore has an important role in handing down social norms, moral laws, religious knowledge and wisdom, and in keeping the social structure stable. It is in the form of inherited culture that we see folklore elements in every culture. Religion has a very important role in the formation of identity of each society. It is the shell of cultural formation. The individuals in a society are born into them. It is through these customs and practices that social solidarity remains. Pre-existing cultural rules determine our ideas and behaviour through socialization. Societies are made up of structures of cultural rules, established beliefs and practices to which their members are expected to conform. Each social structure has unique customs and practices as well as systems of beliefs. Folk arts and beliefs play an important role in the timely reforms and establishing of these customs and practices. Another element that contributes to the creation of identity is ethnicity. All our folk art and culture forms have an ethnic nature. They remain within a particular geographical region - Bhadu and Jhumur of Bankura, Jhumur and Nanchni of Purulia and Nautanki in Darbhanga. The myths of a particular region form the plot of these art forms. These art forms are the totality of the cultural experiences of particular regions. It is the highly popular and religious cultural groups that help them rise beyond time. These fellowships that have the nature of ethnic nationalism will never be ethnocentric. These folk-art forms maintain their ethnic nature through

which they make socialization possible; they regulate them and harmonize them with other communities.

As my studies progressed, my approach towards my work also broadened. Thus, with newer findings, I have amalgamated the motifs, and visual simplicity of the hinterland of India and made it contemporary using newer and non traditional media such as fiberglass or plaster. However this time, I chose to explore further and deconstruct the study solely from the perspective of abstraction. I stuck to traditional media such as wood, metal, and terracotta, and also employed the themes used in traditional art. I set out to challenge myself by restricting both these aspects of my work and exploring the contemporariness of my sculptures only from the abstraction point of view.

It is always the interpretation that argues for or against something that makes it significant and hence nothing can remain one dimensional. In ancient Indian art scene witnessed many novel dimensions and ways of seeing art and had its own impressions, Nationalism, and locally specific cultural nature were themes and concept of debate in literature, theatre art, cinema, politics etc. Many experiments were done in sculptural language in public spaces. Non-figurative forms embedded with visual motifs derived from our own cultural heritage could be another source for me to express myself. The figurative sculptures even without any specific suggestion of

background could be a visual entity that is rather familiar, but the non figurative forms always create a world of mystery, obscurity that warrant different perspectives of looking to make each view a distinct visual text, with motifs of flowers, sun, mother, etc. along with stylized pillars and lotus shaped seatings – the sign of receiving and entering the cultural life. The innovative element in the sculptural language over the years got institutionalized but the freedom of thought even today can go beyond any particular formula of realism and abstraction.

Therefore, now the reader sees me using tribal motifs in murals, and using simplistic themes such as mother-and-child in sculptures (a theme depicted in sculptures since ancient times). I have mimicked the technical processes, and sometimes innovated by using traditional material in combination with non-traditional material such as wood with fiberglass to further experiment the confluence of folk and fine art. The outcome of my artistic exploration is that the medium forms the basis of the thought of an artist, however the visual motifs, and the non-iconographical language of abstraction bring the contemporary modern influences that have survived centuries in changing forms in our civilization.

Neo Modern Material in the backdrop of Indian Iconography

In Continuation to my earlier observations, where I studied in depth the confluence of folk and modern art, this time for my fourth project study, I ventured on to the next logical direction and furthered my study in newer media / materials for sculpture.

I firmly believe that media forms the basis of the thought of an artist, and dabbling in different styles in integral to artistic growth.

In an increasingly urbanized world of concrete jungle, skyscrapers, flyovers and sea links, the exploration of non traditional media is but natural. In my last study, I experimented in numerous ways with fibre glass : a non natural/traditional medium, that has a greater durability, weather resistance, lighter weight, and lower cost. However it lacks the richness of a metal sculpture.

For this reason I experimented with neo modern material that has caught the imagination of artists across the globe – Stainless steel.

Sleet which is an alloy, has come to be used increasingly in public spaces such as – parks, beaches, memorial grounds etc. The medium allows the artistic expression via hitherto unknown materials such as a mirror finish, or a soft polish against the brilliant silver shine of the metal.

My aim at studying this metal was to explore stainless steel through the lens of folk motifs, symbols, and iconography that shall depict the fringes of traditional life living alongside the extremely urban and technology driven world. The method of creating steel sculptures require an incisive and in depth knowledge of welding, as the alloy requires extremely high temperatures to weld to edges, and a sudden drop in temperature can immediately lead to the breaking of the soldering point, along with the entire steel sheet.

Thus the process is highly technologically driven. The fusion of these two elements – i.e. folk/traditional motifs used against the backdrop of a neo-modern medium will bring together the reality of today – the living on of our ancient traditions, affiliations, simultaneous to and in harmony with a fast pace life that is led by technology. What I have tried to depict via my works is that though our lives are controlled by the many technologies, gadgets, and artificial intelligence developed by us, the remnants of our natural way of life continue to reside within our soul. The oldest metal sculpture pieces are made out of copper alloys and bronze. These metals offer the artists strength while also being malleable. Other metals such a s gold, silver are softer, enabling the traditional artisans the ability to shape the metal with precision tools and by hammering. These materials were used in sculptures more frequently by kings as idols to be worshipped.

Related to this sculpting process is metal casting, where metals can be poured into a mould. It is thought that metal casting as an ancient art dates back to almost six thousand years with the first works made out of gold and copper.

The use of metal continued with the Greeks and Romans abroad, and The Guptas, Kushanas in North India, and the Cholas in the South. They used bronze to make life like statues and figurines, with extreme detailing, and surface carving. However surfacial treatment was not explored beyond simple buffing, and glossing.

In Europe, which has a huge tradition of metal sculptures, once the famed Roman empire fell, the baton was passed to the historic ruler Charlemagne, and the Germanic tribes. This "father of Europe" ruled during medieval times- a period when many new techniques of metal casting, welding, and surfacial treatments were innovated. He oversaw the use of bronze and iron to commemorate his rule. Statues were also made of the Virgin Mary and Lord Jesus.

During the renaissance, art was a front and centre part of the culture. Statues were produced made out of copper and bronze that were either commissioned by

the Catholic Church (statues of saints or of leaders). Similar patronage was provided in India by the ruling elites who commissioned artworks for temples.

In modern times, such as metal sculpture found in the United States, are used to commemorate war heroes (typical example being soldiers on horses) as well as a place in the avant-garde art scene. Large metal sculptures are also a fixture in parks and prominent public spaces.

Even though stainless steel is a relatively new material to be used in sculptures, welded sculptures in pure metals and alloys have a huge history taking back to over six thousand years. What the stainless steel as an alloy provides us is unique because it is extremely non reactive to naturally occurring corrosive agents. In addition to it its highly reflective surface makes it an irreplaceable medium. However the technical execution still remains high on cost for large scale sculptures, and that is what I have tried to solve in this study.

Before beginning my own experiments with the material, I decided to observe and understand the various techniques used by international artists to produce different surfacial effects on their stainless steel sculpture.

This greatly aided my understanding because the medium was completely new to me, and time constrains did not allow each technique to be tested out personally. However 2-3 different surface finishing techniques were executed by me during the process of this study.

Illustrated below are some of the popular techniques employed by artists in their installations at different cities of the world.

Looking at some iconic modern installations and sculptures, I examined why stainless steel is such a popular medium for artists. Stainless steel is a popular choice for public art, sculptures and outdoor features as it can be welded, machined, bent, and finished with many different surface finishes and colour effects.

In contrast any paint finish is likely to bubble and peel. However the beauty of stainless steel is that it does not rust and strongly resists attack by a great many liquids, gases and chemicals. There are different grades of stainless steel, for instance, a 304 grade is used on many art features, but where items are to be placed either in gardens or public places near the coast, a 316 grade stainless steel is often recommended which is even more resistant.

A mirror finish is one of the most popular choices which is achieved by building up shine using various grades of polishing wheels. It is ideal for all types of items where a highly polished finish is aesthetically pleasing so a good effect for art and sculpture.

Many people confuse the two but polishing refers to processes that use an abrasive which is affixed to the work wheel, while buffing uses a loose abrasive on the work wheel. Polishing is a more harsh process while buffing is less so, which leads to a smoother, brighter finish.

In some cases up to a whole month can be spent on this 'polishing' process. Once it is polished, no re-polish is required as the finished will last for a very long time. One example is a 3-metre diameter, highly polished, stainless steel ball sculpture that has been installed on the bank of a river in Wales. This took 3 months to produce and much of the time went into creating the super glossy mirror finish.

Another method is of Shot peening which can be controlled and repeated to leave behind a range of different textures. These can be highly decorative designs and finishes. This has been achieved on the Dublin Spire, erected in December 2003, where the ground level section was peened to create a mirrored pattern with a reflective surface.

A unique and innovative process was employed by an artist where in a glass bead blast finish was added to the steel used for a large artwork project in Manchester – The Seed Sculpture. The twelve and a half metre artwork (Artist-Colin Spofforth) was fabricated from duplex stainless steel, laser cut, welded with the glass bead blast finish used to produce the sycamore leaf-shaped effect. The sculpture now provides a focal point in a major new 450-acre urban business park, located in East Manchester's regeneration zone.

A popular and much used technique is steel brushing. It is produced by polishing the metal with a 120–180 grit belt or wheel then softening with an 80–120 grit greaseless compound or a medium non woven abrasive belt or pad. The brushing gives the metal a distinctive look. It keeps some but not all of its metallic lustre but a pattern of very fine lines, parallel to the brushing strokes, is created.

And the most easily heard of method is of sand blasting. Sandblasting with a pattern on stainless steel can create a textured finish with dramatic results. Also grinding and distressing can create added interest to the steel. A dazzling array of different finishes can be produced. These can be simple or complex designs utilising several finishing techniques including etching, or the bead blasting processes as well as colour stripping. A combination of these techniques can be used, sometimes together.

Another option is to create a dull surface which can be used on the same piece as a contrast to mirror finishes, where the metal is painstakingly dulled with heat to achieve the final effect. Also a more delicate result from heat treatment can be produced on sculptures by something called heat speckling.

Case Study:

During the course of the project, I undertook a case study of the Indian origin artist- Anish Kapoor's famous installation sculpture- the Bean, in Chicago. The reason for the choosing this particular sculpture for case study were two folds. First, that the installation is on enormous scale with no sharp edges or points, making it an interesting example to study from the perspective of surfacial treatment. The second being the artist's origin is Indian. It is extremely insightful to understand how Indian sensibilities, way of life, and societal bonds interact with a neo modern medium in a cosmopolitan city.

I have given special attention to this sculpture in a place of excellence, right in the centre of AT&T Plaza, the Millenium Park Square, in Chicago. This metallic, mirror and curved volume that looks like a giant bean, reflects the city skyline that surrounds it, but not in its whole or veracity. What we see is subverted, distorted. This brings us to a parallel reality where space and form are manipulated. A dare to a society that doesn't sees itself in the imaginarium; but still, a society that promotes the cult of the image. And what better than an object that offers us a countless number of them? It becomes an object of admiration and appreciation. Perhaps because it offers us a new "I", a projection of ourselves as we approach that is modifying accordingly with our movement.

To the touch it is cold, raindrops accumulate and slide by it. As I go underneath it – the scale of this concave chamber allows it – I am surprised to look up because, in the center, the circular flat surface reflects us, this time horizontally. A plan view of us, a bit distant, like the little dummy people figurines who are used in order to scale architectural projects. Around the center, the volume distorts, warps, merges and multiplies reality. It is then that I understand the mercury reference made by the artist himself. It actually resembles a fluid, a warped fluid. It designs in its reflections a thousand images of us, all different.

And here, in an attempt to create a variety of distortions – bending, going left and right – we find ourselves attached to an object that is merely aesthetic. A dreamy dizzy weird feeling that keeps us stuck in a stainless steel bean, a piece of street furniture placed in the park that retains our time and attention. Its perfect, abstract and immortal materiality defies our humble imperfect mortal life, sucking us towards it. It's a reality-distorter, deformer that plays with our reason, perception reaching our imagination and dreams.

As I move to implement the observations I have made by studying techniques, and studying the works of some of the contemporary artists, it was imperative to also extensively understand the science and technology behind the Argon arc method of welding steel.

Argon Arc method:

In the creation of any artwork of the modern Steel-Age, existence of welding technology is a must. And MMAW (Manual Metal Arc Welding), SM AW (Stick Metal Arc Welding), and GTAW (Gas Tungsten Arc Welding) are firmly established techniques. This is because of their flexibility, utility in all positions and locations and easy availability of the consumables required for various types of welding.

In most of our artworks, the jobs for welding are being done using various types of stick or coated electrodes.

But the artists of the present day are increasing their productivity with a view to create more innovative art works especially when the art field worldwide is becoming more and more globalised and the artist must continuously seek new ways and means to reduce cost and improve quality control.

Under the situation, users want to modernize their machines to run faster, longer and more efficiently. And they are seeking various advantages of Automatic and Semi-Automatic welding processes—MIG/MAG, TIG, GTAW or Gas-shielded Arc Welding—which are most modernized Machine Tools of Welding Technology. Argon Arc or Gas-shielded Arc welding is the most popular among them.

Now, let us consider inert gases and their utilisation in welding science. An inert gas is, as its name suggests, an inactive gas. It is used to protect the molten pool of metal from the atmospheric air at the time of welding. Important inert gases are Helium and Argon. They are used with other Shielding-gases.

The Shielding gases may be classed into two groups:

(1) Gases soluble in or reacting with metals. These are Hydrogen, Carbon dioxide, Nitrogen etc.

(2) Inert gas like Helium and Argon.

Argon and Carbon dioxide are the most widely used. Argon is obtained as a byproduct in the separation of air to produce oxygen. Argon is supplied in steeldrawn cylinders under a pressure of 150 atmospheres. Purified argon contains 97-98 per cent argon, while commercial argon contains 13-14 per cent nitrogen.

It is convenient to consider that the application of gases which involve shielding the arc with argon, helium and carbon dioxide (CO_2) and mixtures of argon with oxygen and CO_2 , helium are essential.

Argon is used as a shielding gas because it is chemically inert and forms no compounds. Commercial grade purity of argon is about 99.996% and obtained by fractional distillation of liquid air from the atmosphere. It is cheaper and is therefore used for commercial purposes.

Argon in commercial purity state is used for metal welding purpose. Argon with 5% hydrogen gives increased welding speed and penetration in the welding of stainless steel and Nickel alloys.

Helium may be used for aluminium and its alloys and copper. But Helium is more expensive than Argon and, due to its lower density, a greater volume is required than Argon to ensure shielding. A small variation in arc length causes greater changes in weld conditions.

The mixture of 30% Helium and 70% Argon gives fast welding speeds. The mechanised D.C. welding of aluminium with Helium gives deep penetration and high speeds.

Automatic Argon-arc welding has been successfully employed for welding thin stainless steel, aluminium and its alloys which is extremely useful in sculptural designs. The Argon-Arc Process may use either non-consumable or consumable electrodes. With a non-consumable electrode, the arc is maintained between a tungsten electrode and the 'Work'. A shield of Argon is projected around the electrode.

The arc burns between a tungsten electrode and the work-piece within a shield of the inert gas argon, which excludes the atmosphere and prevents contamination of electrode and molten metal. The hot tungsten arc ionizes argon atoms within the shield to form a gas plasma consisting of almost equal numbers of free electrons.

This process is used for welding light alloys, some non-ferrous metals—especially aluminium, copper and their alloys, and also stainless steel.

Amalgamation of the New & the Old

To sum up the study, it is apt to say that new media brings a golden opportunity for artists to search newer ways of expressing their creativity. New media brings with it a host of benefits such as durability, weather resistance, etc but it comes at the cost of higher technical complexity. If artists are able to acquire the technical know-how, they can upgrade their skill sets and unlock new chambers of creativity.

Thus I would like to conclude that with the study undertaken by me, I was able to substantially upgrade my technical expertise, skill sets and understanding of the materials that were new to me.

My artworks created during this period have juxtaposed new media against the foundation of folk/ traditional elements, symbols, and motifs that has led to the fabrication of sculptures that are uniquely neo modern, however are so deeply rooted and seeped in the traditional Indian sensibilities. I have also tried to show the interplay of abstract forms using the techniques illustrated in my report above.

Works



Height – 30 inches



Height – 60 inches



Height – 48 inches



Height – 36 inches



Size – Height 8' x width 10' feet Medium – Wood, Fiberglass, Metal & Acrylic Paints



Size – Height 5' x width 15' feet

Medium – Wood, Fiberglass, Metal & Acrylic Paints



Size – Height 35 x width 45 niches

Medium – Bronze



Size – Height 54 x width 42 niches

Medium – Bronze



Size – Height 36 x width 30 niches

Medium – Fiberglass



Size – Height 60 inches

Medium – Fiberglass



Size – Height 36 inches

Medium – Wood and Metal



Size – Height 24 inches

Medium – Fiberglass



Size – Height 5 feet

Medium – Stainless Steel



Size – Height 18 inches

Medium – Stainless Steel



Size – Height 24 inches x width 15 inches

Medium – Stainless Steel on Board


Size – Height 24 inches

Medium – Stainless Steel