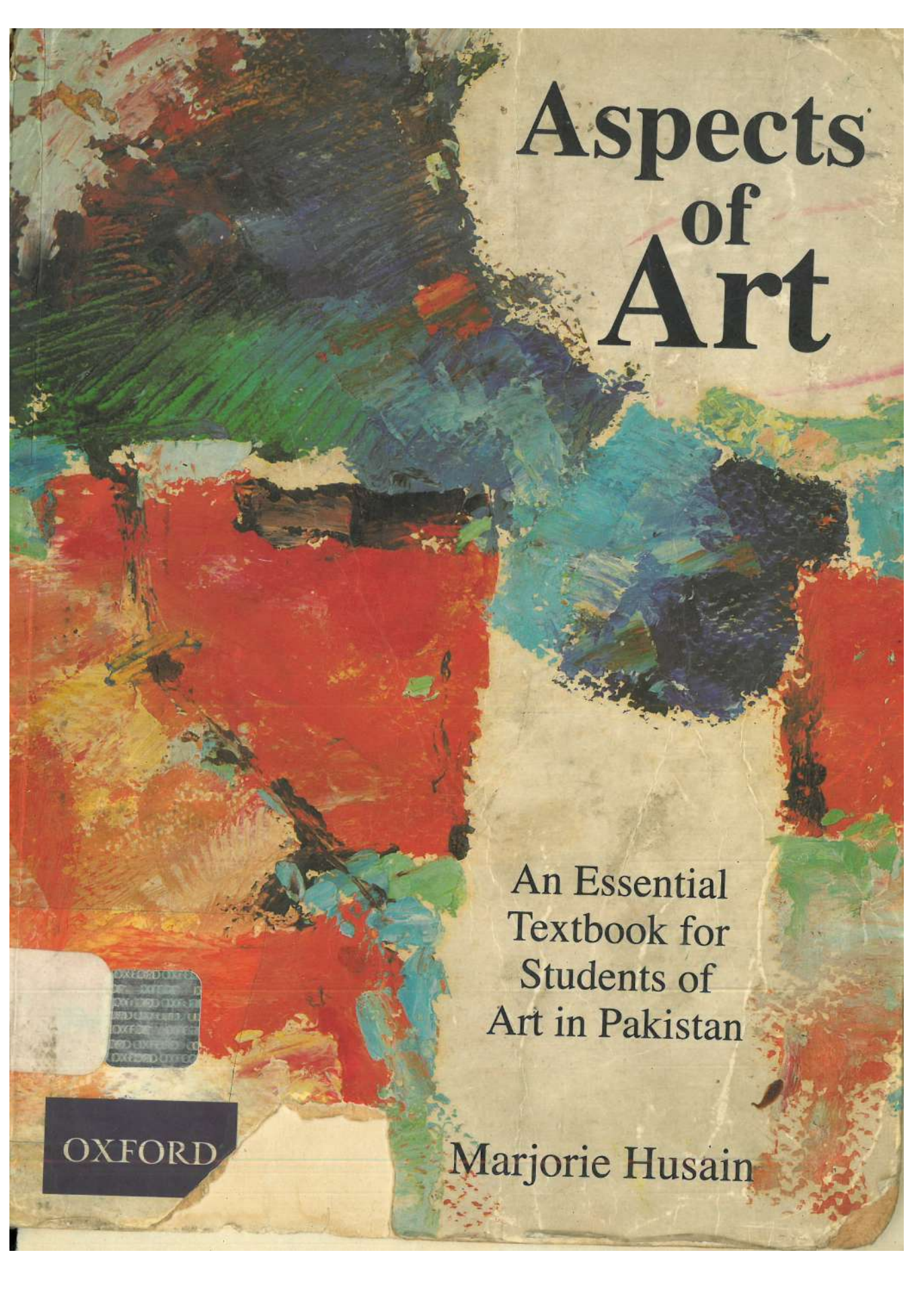


An abstract painting with thick, expressive brushstrokes in various colors including red, blue, green, yellow, and black, set against a light, textured background. The painting is the central visual element of the book cover.

Aspects of Art

An Essential
Textbook for
Students of
Art in Pakistan

Marjorie Husain

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MARJORIE HUSAIN

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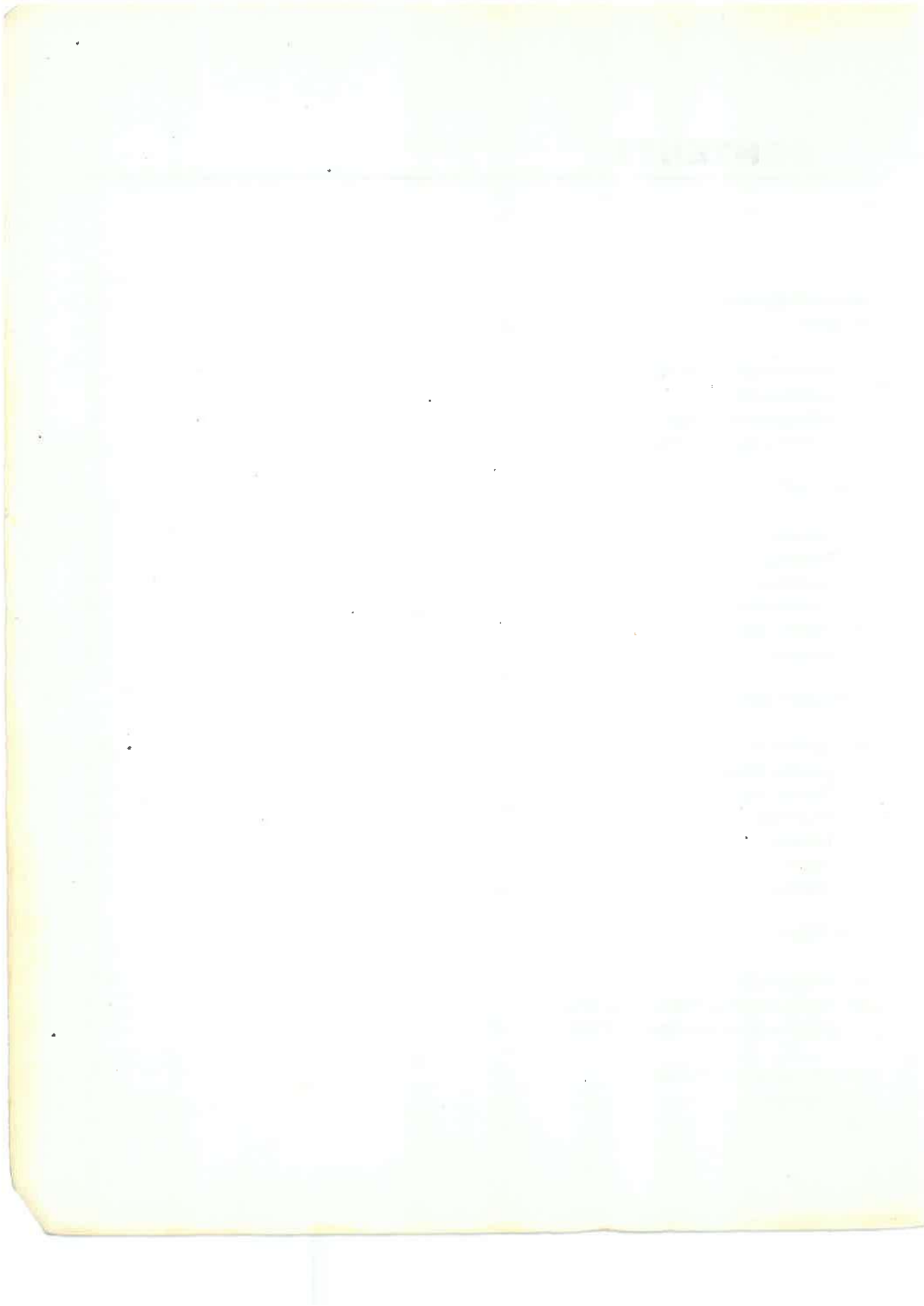
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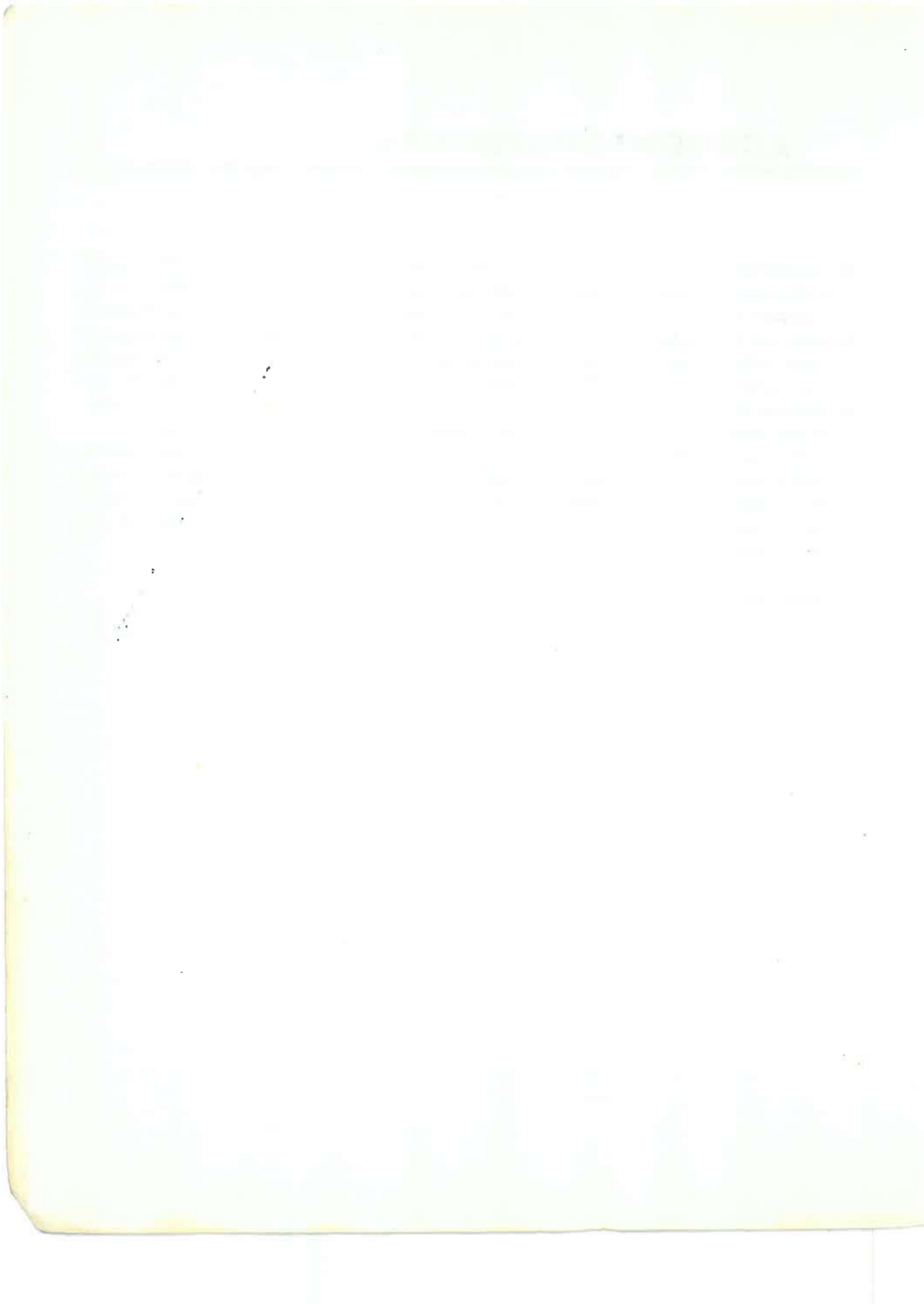


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Marjorie Husain



PREFACE

This material has been compiled for local art students according to the syllabus and test papers of the Sindh Board of Technical Education. These students are facing considerable difficulty due to a lack of reference material on many of their subjects. The book has been written in a simple style offering students a basic explanation and guidance in all the disciplines comprising the curriculum. It is illustrated throughout by Athar Jamal's drawings, and by the reproduction, through transparencies, of artworks. The project has been planned as a useful back-up for class teaching in practical and theory subjects, in the hope that it will enable the students to take their exams with confidence.

1 AN INTRODUCTION TO ART

Ask a number of people 'What is art?' and you will doubtless be given a variety of answers. Though the word 'art' does not exist in every vocabulary of the diverse cultures of the world, yet each society has its own art forms created and conditioned by traditions and culture. With such a wide range of expression, it is hard to define art rules and regulations, i.e. when we consider art we must take into consideration the era and the aesthetics of that period.

Art has meant different things to different people at different times in history. To many artists it is defined as 'self-expression'. It has been variously a means of spiritual enhancement, a way of recording events, used as a 'magic' means to capture an enemy's strength, a means of education by illustration, and an object of sheer beauty.

The term as applied today is a derivative of a Renaissance word 'arti' or 'arte', a technical phrase meaning the knowledge of materials used by the artist. Art through the ages reveals both a technical and an interpretive record of human experience. Art continues to fulfil this function in the present time.

What are 'Aesthetics'? The dictionary definition explains aesthetics as the study of art, beauty, and good taste; yet not all art can be described as 'beautiful'. Art, like science, plays a particular role in helping us to understand the mysteries of the universe.

The desire to foster an understanding and an appreciation of art requires several determined qualities: Curiosity—an eagerness to know, and to research and analyse details; Concentration—the willingness to put aside all other matters except the work in hand; and Observation, to experience an object visually

from within and without. Artists must cultivate their 'third eye', strive to glimpse the vital spark beyond the substance. Then they must accept the challenge of aesthetic problems by searching deep within themselves for possible solutions. The artist fulfils the requirements of bold experimentation, examination by trial and error and, finally, acquires the ability to arrive at a personal conclusion.

To simplify matters, there are basically three stages of artistic development. The first stage is marked by the struggle to achieve proficiency in the procedures of the discipline, and to work towards an independent approach to art. The second stage concerns experimentation, the excitement of attempting something new, to prove or to disprove accepted theories. The third stage begins at the point where the technical skills have been gained and the artist realizes what he wants to say.

Of these three stages, only the first can be taught. The student is given the opportunity to define some of his attitudes to art, as well as to examine the fundamentals of his chosen discipline. What must be mastered is the tendency to labour in order to 'make a work of art' rather than to learn from the actual process involved.

Famous twentieth century artists such as Klee and Picasso tried in their work to recapture the wonder and the outlook of a child: In later years, Picasso mourned the fact that he could no longer paint as he could at the age of fourteen. The delight children are able to find in things adults take for granted may be witnessed every day. When we see the unfolding of colours in a sky at sunrise, we are not regarding them from the scientist's point of view but simply enjoying the

changing colours of the sunrise before our eyes. So we can suppose that, though facts may play their part in art, the artist is moved by the impression that he absorbs rather than by the anatomy of the phenomenon.

We must avoid associating art with beauty alone lest we reject a whole world of visual experience. Likewise, it is not necessary that every work of art should have a message. Meaning is something we attach to an object, it does not exist in the object itself.

The major forms of art used to convey human feeling are prose, poetry, music, dance, film, the theatre, and the plastic and graphic arts. A subdivision of the latter two subjects includes painting, printmaking, drawing, sculpture, photography, ceramics, and architecture. Each of these disciplines fulfils a specific need and has its own area of expression.

The quality of a work of art lies in the perception of its content. The experiencing of a work of art when it is enjoyable, persuasive, stimulating, disturbing, etc. decides the viewer's opinion of the 'aesthetic value' of the work.

Art could be called a 'language of visual signs'. It deals with gestural clues to convey moods, ideas, or general emotions. The basic components of a painting are colour, line, dimension, balance, and synthesis. These, put together, create a feeling, an effect.

Although the written or spoken language cannot fully explain art, in order to widen our knowledge we strive towards a better understanding of art using the medium of words. For our own purposes, we shall explore the nature of art and the ideas presented by works of art.

2 ELEMENTS OF ART

The basic elements of art are:

1. Line
2. Shape
3. Volume
4. Value/light
5. Texture
6. Colour
7. Perspective
8. Composition

Line

A line is the path of a moving point, i.e. a mark made by an instrument or a tool when it is drawn over a surface. This line is visible because it is in contrast with the surface on which it is drawn. A line which creates a boundary on an area of space and separates it from its surrounding background is called a **CONTOUR**. The use of rhythmic flowing lines which intrigue and enrich the surface is called **CALLIGRAPHY**.

Line is a graphic device made to function symbolically in artistic expression. The artist uses a line to communicate. Line does not exist in nature, it is a purely man-made invention for the simplification of statements of visual facts and to give graphic ideas. Nature contains only mass, but the use of line as contour demonstrates the mass.

Line is very versatile in the visual field. It can be a corner or edge, sculpture, contour to describe shape and mass, plastic, or calligraphy. The line may perform several of these functions at the same time. Yet the creation of value and texture will make the final distinction between various elements of art structure.

The physical properties of line are:

i. Measure

Refers to the length and width of a line. It could be long or short, broad or narrow. Consequently there are various combinations which can divide or unify a picture.

ii. Type

Any line is by definition a particular type. One line going in only one direction is straight. If it changes direction gradually, it is curved. Sudden and abrupt changes create angular lines. In adding individual type to measure, we discover that long, short, thick, or thin lines can be straight, angular, or curved. The curved line may bend to form an arc. The alteration of movements become visual entertainment and, if rhythmical, stimulating. A curved line is naturally graceful and can be capricious, creating excitement. The variations of an angular line are full of interest.

Direction refers to the way lines, shapes or forms are oriented or arranged within a composition.

iii. Direction
The line may be a zigzag type but take a curved direction that contradicts the basic movement. A line with general horizontal direction may show serenity and stability. A diagonal line may imply agitation and movement, while a vertical line generally indicates aspiration or poise. The direction of the lines is the means of bringing about a continuity of relationship with other elements in a picture. These lines are very important as they generally create the visual channel which guides the eye of the observer when viewing a picture.

iv. Location

The location of the line in the picture is also extremely important. According to its placement, a line may serve to unify, divide, balance, or unbalance a picture.

v. Character

As well as the above qualities, the line possesses character, a term largely related to the medium with which it is created. Different mediums will create different interests.



Figure 1: Location and character. The line may divide, unify and balance depending on the medium used. Here different mediums such as pencil, ink, crayon, illustrate the line.

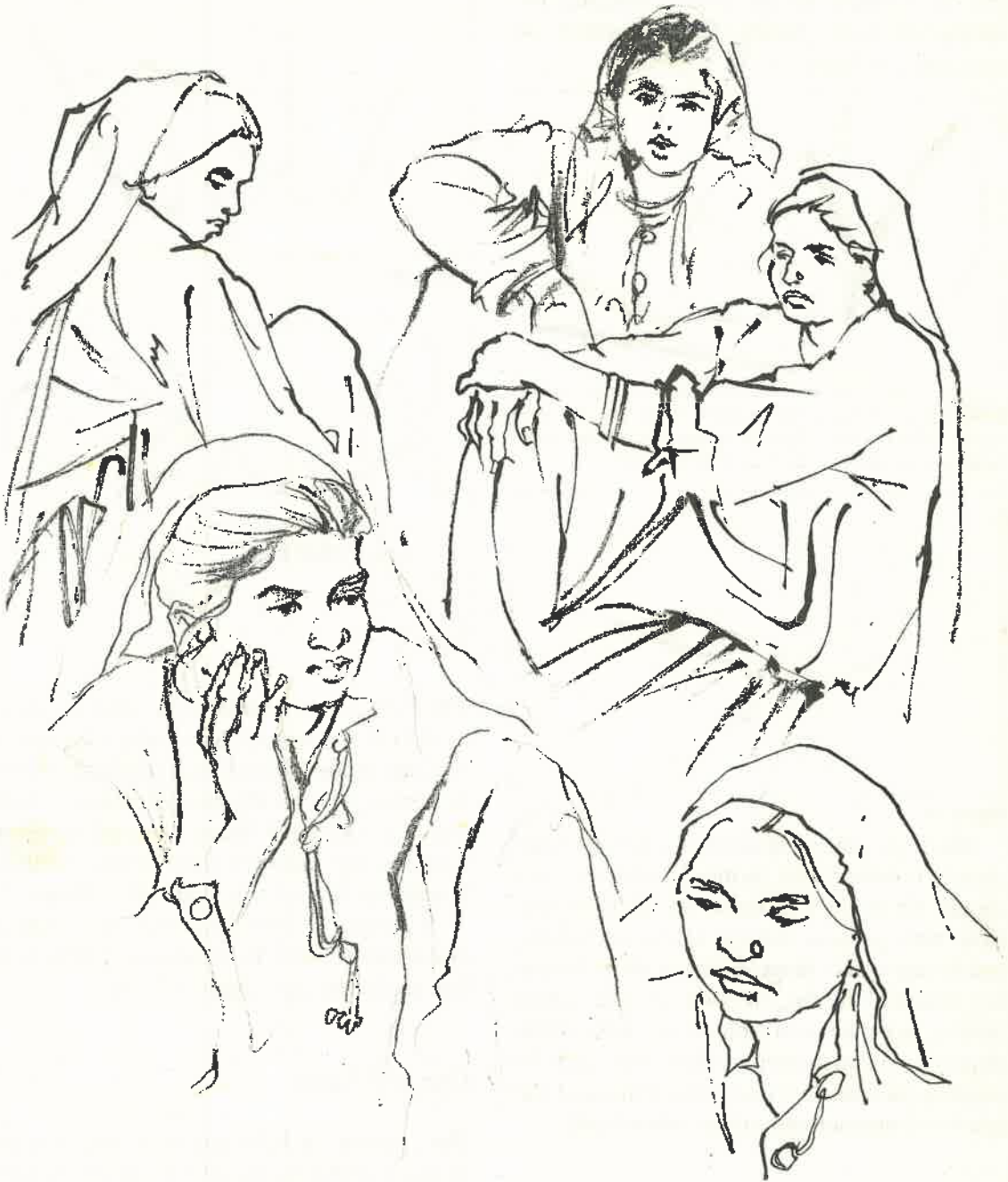


Figure 2: Depicts character; each medium creates a different mood and expression. Mediums used here are crayon, pencil, and ink.

There are numerous emotional qualities which can be created by an artist changing the character line. Study the musician as expressed in figures 3, 3a, 3b, and 3c.

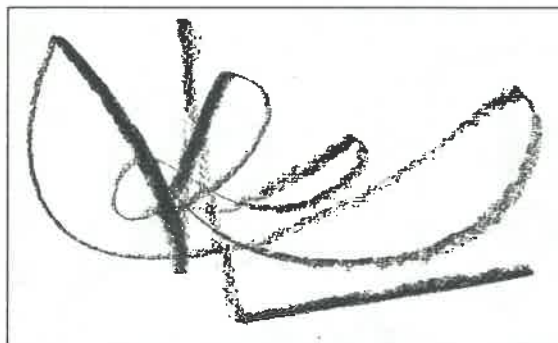


Figure 3: By changing the character of the line, the artist creates different moods. Here (in figures 3, 3a, 3b and 3c) he focuses on the strings in the sitar of the musician.

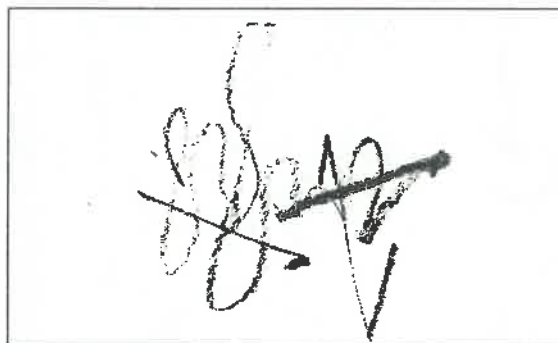


Figure 3a

There are other properties of line which are closely involved with further art elements and should be studied in terms of relationships. Line may possess colour, value, or texture, and it may create shape. Some of these factors are essential to the creation of line whilst others may be introduced as and when required. Artists often exploit this fact by creating pictures in which some effects of the line are dominant and others subordinate.

Line and Shape

In creating a shape, line serves as the outline or edge of a figure, object, or mass. A line



Figure 3b

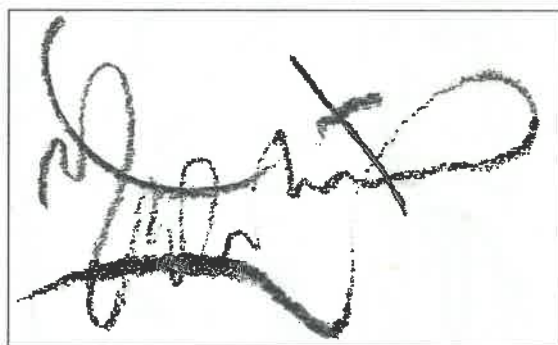


Figure 3c

which describes an area in this way is called a **CONTOUR**. Contour may further be used to separate shapes, values, textures, and colours. A series of closely-placed lines creates textures and tonal areas. The relationships between the ends of these areas establish boundaries that change them into shapes.

A contour line drawing may create distortions which add expressive quality to the line produced, as in figures 4 and 5.

Line and Value

The contrast in light and dark which a line shows is called **Value**. Every line has to show this quality to remain visible. Groups of single lines create areas which show value differences. Parallel lines, etc., are included in such groups.



Figure 4: Contour drawings depicting the use of lines, when distorted will produce shapes and add expression. Compare figures 4 & 5. The artist has drawn the lines with his eyes closed in figure 5.



Figure 5

Line and Texture

When groups of lines, such as those mentioned above, combine to produce flat or two-dimensional effects, patterns emerge. If

the result stimulates our sensations of touch by suggesting areas of roughness and smoothness, this effect is termed **Texture**. The plastic quality of a shape may be produced by lines which move across and within the form as well as on its edge or contour, as below.



Figure 6: Groups of lines placed close together produce patterns. Placed in different directions, the lines create a textural effect. (Drawing in pencil.)

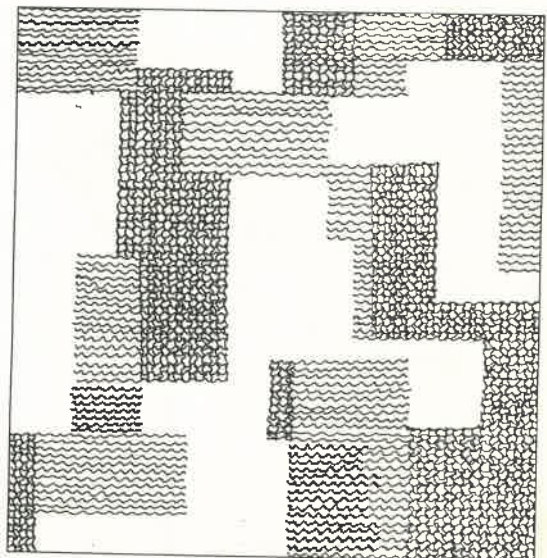


Figure 7: Textural harmony is created by wavy line patterns made by using pencil and ink.

Given on the preceding page (figure 7) is another illustration in the creation of texture with pen and ink. It shows how textural harmony is obtained by wavy line patterns.

Line and Colour

The introduction of colour to a line creates a vast potential. Colour can accentuate or neutralize other line properties. A hard line combined with an intense colour will produce a forceful or even harsher effect. The opposite is true with a gentler colour. All the properties of line contain spatial ingredients which are subject to control by the artist. Mere position within a prescribed area suggests space. Similarly, every factor which produces line has something to say about its location in space. The artist's job is to use these factors to create spatial order.

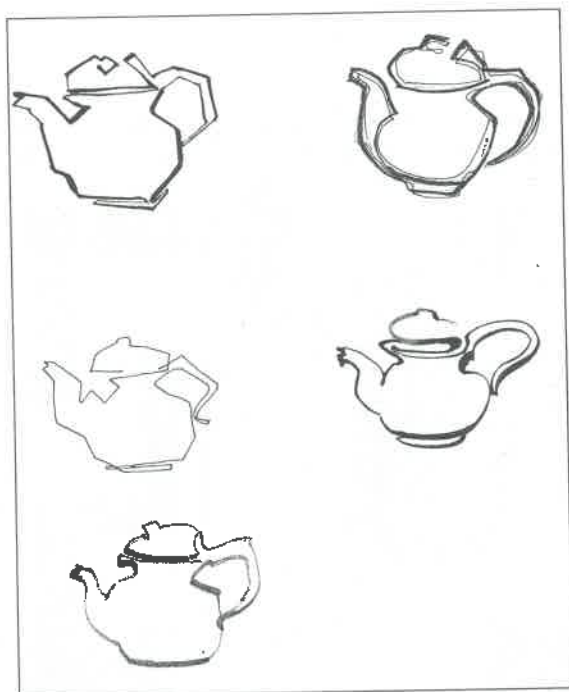


Figure 8a: Edges and Contours. Different mediums used here change the character of the teapot.

In art, line becomes a means of transcribing the graphic language of ideas and emotions. It describes the edges or contours of shapes; it diagrams silhouettes; it encompasses spaces and areas, all done in such a way as to convey meaning. Line is not used exclusively to express deep emotions and experiences; often it is used for the planning of utilitarian objects, for example, the line drawings of a building by an architect, or the drawing of a bridge by an engineer. Whatever the emphasis, expression of human emotion, or communication of factual materials, line is an important plastic element at the disposal of the artist.

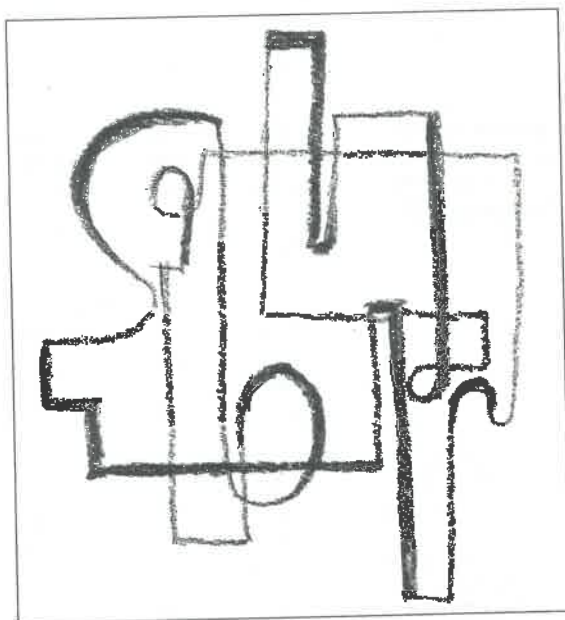


Figure 8: Line used to express emotion. Whatever the subject and emphasis, either factual or abstract, line is the most important element at the disposal of the artist.

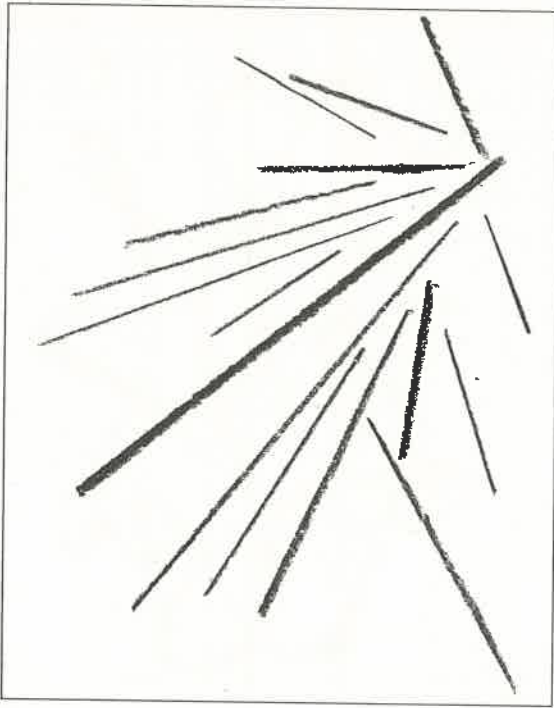


Figure 9

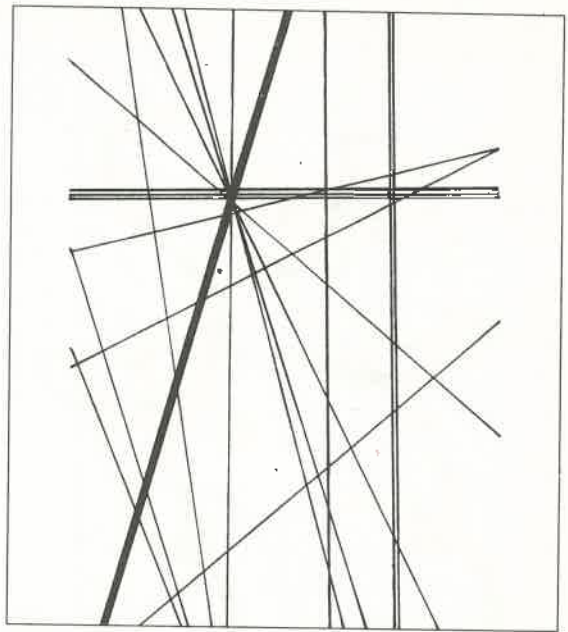
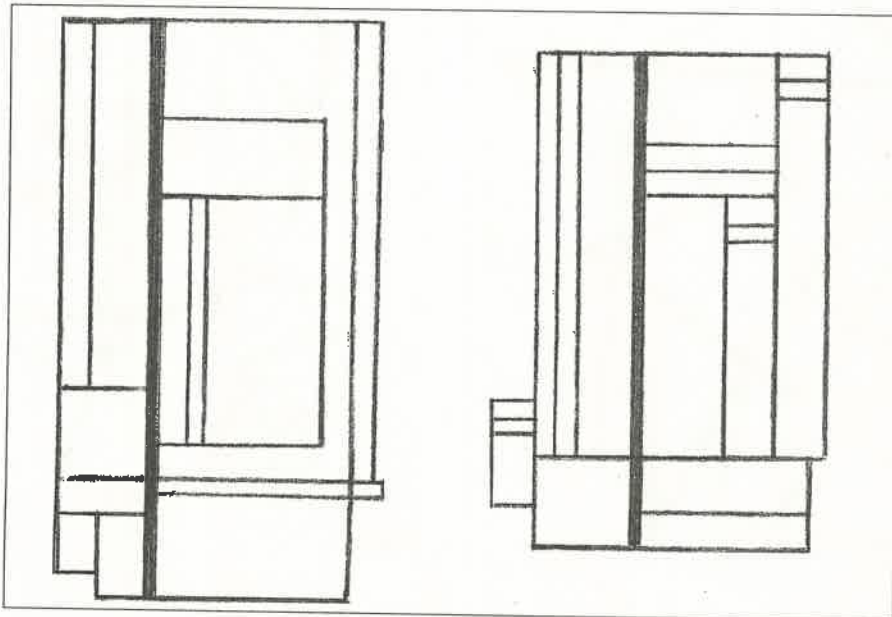


Figure 11

Figure 10



Figures 9, 10 and 11 depict lines in various patterns. Lines with different mediums will create different patterns. Straight lines, vertical lines, curved lines, angular lines—all show different characters.

Figures 12, 13, 14, and 15 are all exercises of line drawings worked in ink illustrating designs formed by mere curves, and angular lines forming contours.



Figure 12

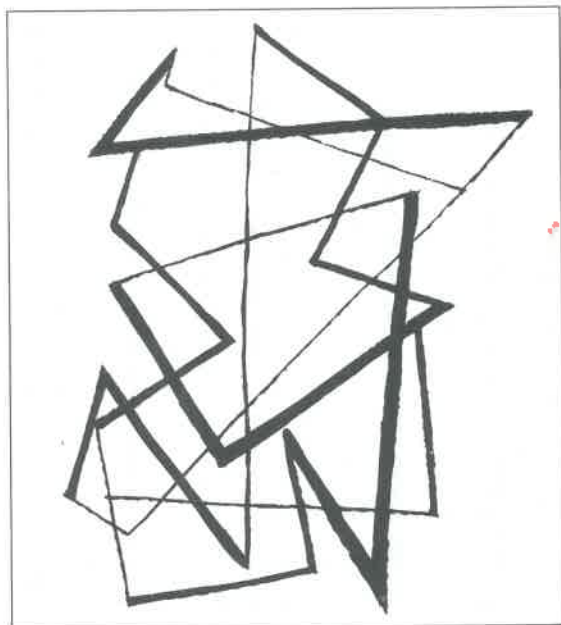


Figure 13

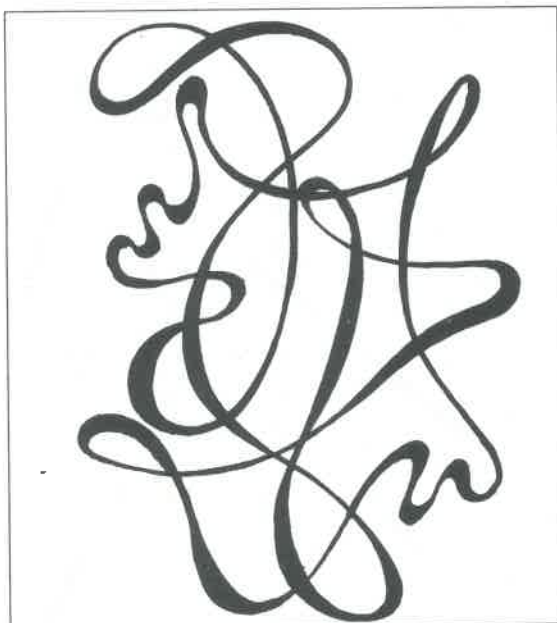


Figure 14



Figure 15

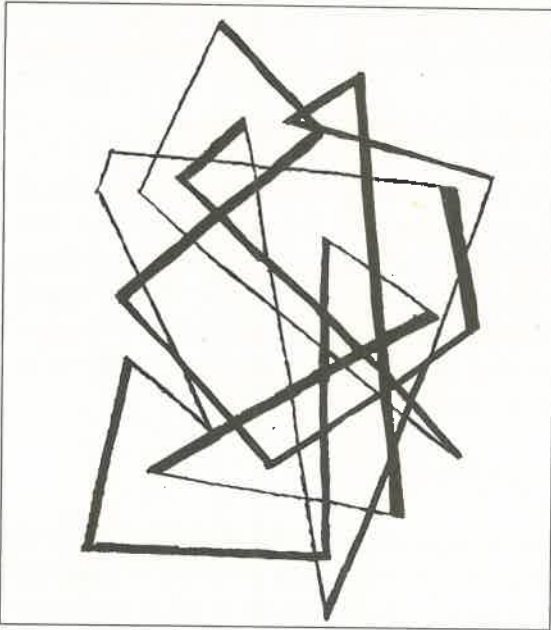


Figure 16: Lines depicting decorative shapes.

Shape

Shape is an area which stands out from the space next to or around it because of a defined boundary or because of a difference of value, colour, or texture. Those shapes which are two-dimensional and laid flat on the surface of the picture plane are called decorative shapes. A shape which is three-dimensional in nature and exists in space is called volume. On a flat surface the artist can only create the illusion of volume.

Shapes are as important to the artist as bricks are to a mason. Both use the materials from which permanent structures are fashioned. Shapes exist in the expression of the illusion which they create. If shape has to be defined, it may be called an area of value, colour, or line, or all three. The dimensions of a shape are seldom measurable. They may be of great delicacy and complexity, or may gradually blend with other shapes so that the areas of each shape become indistinguishable. Varieties of shape are limitless: from

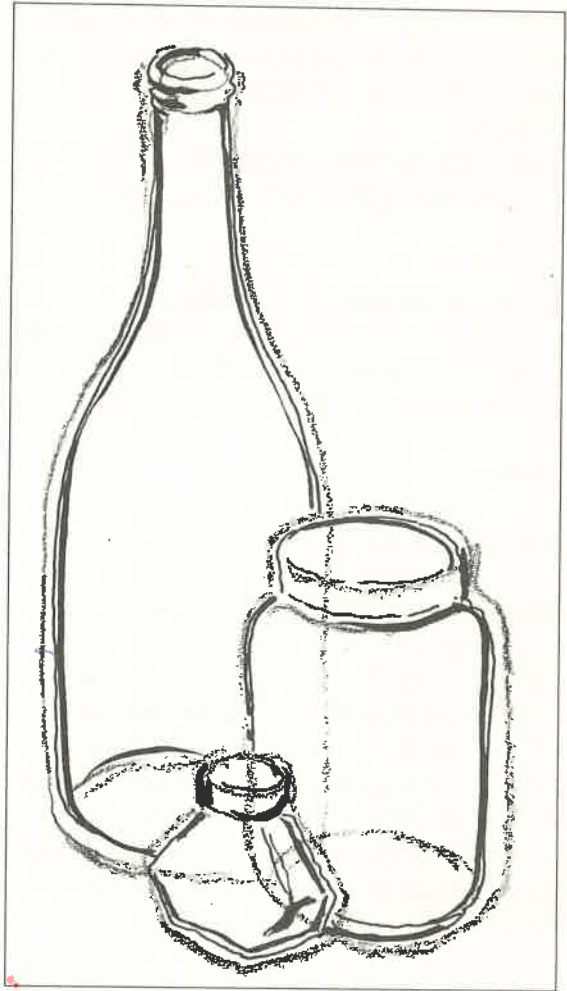


Figure 17: Shapes portraying bottles drawn in simple lines.

symmetrical to asymmetrical; from poised to awkward; from static to dynamic; outgoing to retiring, and so on.

Uses of Shapes

Shapes representing known objects in works of art are easily recognizable. Still, we cannot physically know the actual objects from which the artist derived the image. For that reason, we are not able to assess the degree of the artist's devotion to the subject matter as we view it, instead we must gauge it is as the

artist's personal expression. Objects or shapes undergo a transformation, they become individualized as part of the style or idiom of the artist.

The final art form is controlled by certain fundamental principles of composition namely:

- i. Balance
- ii. Control of direction and attention.
- iii. The development of appropriate ratio between harmony and variety.
- iv. The space concept and consistency.

Balance

In order to balance a composition, one must give consideration to the amount of force symbolized by shapes. The example of the see-saw, as shown in example no.1, conveys the idea that the apparent balance of the apparatus is subject to control. In this instance, and for that matter in all pictorial balancing, the sense of weight is felt in the art elements in terms of the properties composing them, i.e. a dark shape appears heavier than a light one or a shape with strong colour attracts more attention.

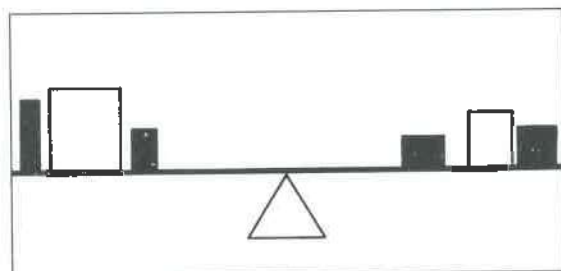


Figure 18: See-saw illustrating balance.

The above example shows force along one axis only. Now imagine a picture which has many elements of many directions of force. The direction and amounts of force depend on the placement, size, accent, and general shape character. To obtain controlled tension results, the amounts of force developing out

of the foregoing factors (placement, size, accent, etc.) should counterbalance each other.

Control of Direction and Attention

The momentum gained by the considered use of shapes leads to a controlled vision. The artist guides the attention of the viewer along a pre-determined path. This allows visual transition from one area to another and opens the way for rhythmic movement in the work of the artist.

Visual Harmony

The creation of related directions as mentioned above needs still more parts for a complete expression. There must be stops or pauses to break the monotony when planning a work of art. The artist must select and determine the importance of various areas of the artwork. This is the influence of the principles of design and the feeling the artist has for his subject matter. The examination of the example picture depicting rural life reveals that the artist has made the figure of a woman the main subject. This is determined by factors based on the contrast of location, size, value, texture, and colour. Whenever possible, the appeal of allied factors is used to full advantage by the artist (see figure 19).

Shape Character

The qualities which relate or differentiate shapes are the product of technique or inherent shape character. Shape may be natural, such as found in a stone, leaves, clouds, etc., or abstract when it is contrived by the artist. A biological affinity has led to the term 'biomorphic' to describe shapes in art suggesting life. These shapes have developed significance at the hands of surrealist artists. In direct contrast to these shapes are the



Figure 19:
Rural scene depicting
visual harmony.

rectilinear or straight lines, geometric shapes as used by the cubists.

Every work of art contains actual or implied shapes and, along with these, some degree of space. Artists throughout history have reflected on the controlling concepts of their times in their use of pictorial space. Old Masters such as Rembrandt, Botticelli, and Breughel developed and perfected the deep space illusion, being reality as they saw it. The last hundred years have witnessed the development of shallow space concepts as favoured by many present day artists. Today space concepts are used subjectively, and even in combination when necessary, to achieve the desired results.

Volumes and Planes

The creation of three-dimensional shapes (volumes or masses) automatically implies the depth of space in which they must exist. The component planes (sides) of these volumes may be detached from their mother volume and inclined back into space at any angle and to any depth. They may also be presented frontally

(parallel to the picture frame) creating an illusion of finely graded differences of depth within a shallow space. The essential difference between plane and volume lies in the absence of thickness in the plane.

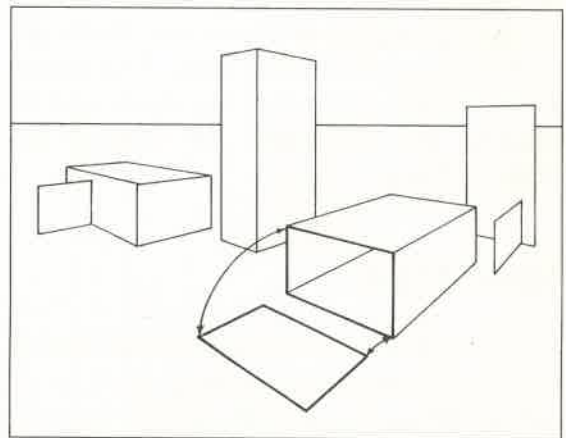


Figure 20: Drawing showing three dimensional shapes i.e. volume.

Perspective

Linear perspective is a mechanical means of demonstrating the visual appearances of planes and volumes in space. The appearance

is based on the location of the artist in reference to the object drawn; it is accomplished by directing parallel lines towards a common point.

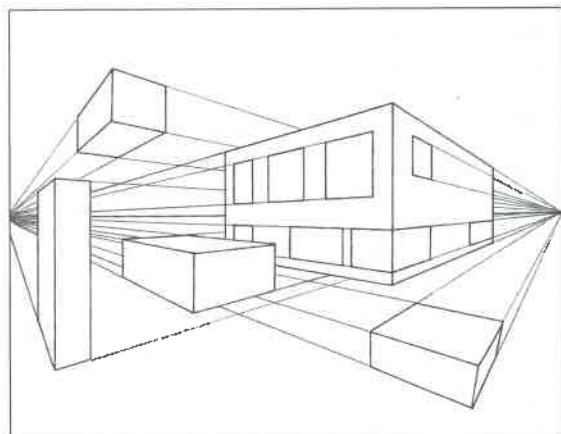


Figure 21: Linear perspective illuminating the common point.

Finally, the very surface on which the artist works is a shape; the frame or perimeter around it creates the border. This frame shape presents the germ of a mood, depending on its degree of rectangularity. Horizontal shapes should predominate in a horizontal frame and vertical shapes in a vertical frame. This creates a basic harmony between the frame and its contents and emphasizes the mood of the original shape.

Value / Light

Value is a term which describes the relative degree of lightness or darkness given to an area by the amount of light reflected from it.

The student involved in investigating art in its elemental parts must consider the relationship of the value to the other elements of art forms: line, colour, texture, and shape.

A solid object will receive more light from one side than another because the side that is closer to the light source will intercept the light and cast a shadow. Light patterns will

differ according to the surfaces receiving light. A round or spherical surface will show an even distribution of light to dark, and an angular surface such as a cube will show sudden dark and light shadow patterns. Every basic form has a light and shadow pattern. A curved surface shows a slow tonal change. An abrupt change will mean a sharp or angular surface.

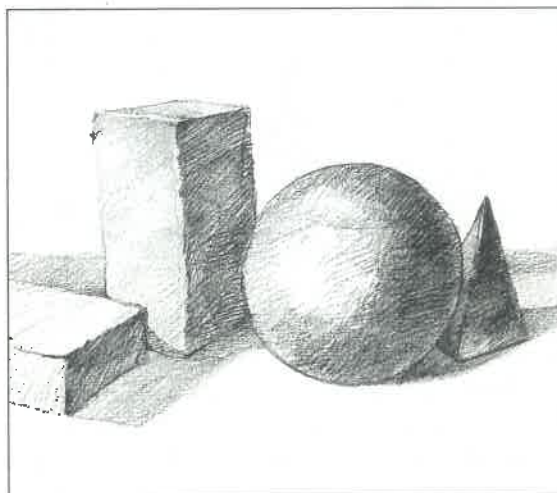


Figure 22: Depicting light and shadows of solid forms and resulting shapes, describing character, design, and expression.

Cast shadows are dark areas which occur on an object when it is placed between the light and the surface. The type of shadow will depend on the size and location of the light. The artist uses these shadows to describe character, design, and expression.

Texture

To understand the meaning of texture, the word 'tactile' must be remembered, a quality which refers to the sense of touch. The actual or illusion of tactile value on the surface of an area, whether natural or created by an artist through his manipulation of the visual elements, is called texture. Texture activates two kinds of feelings at the same time.

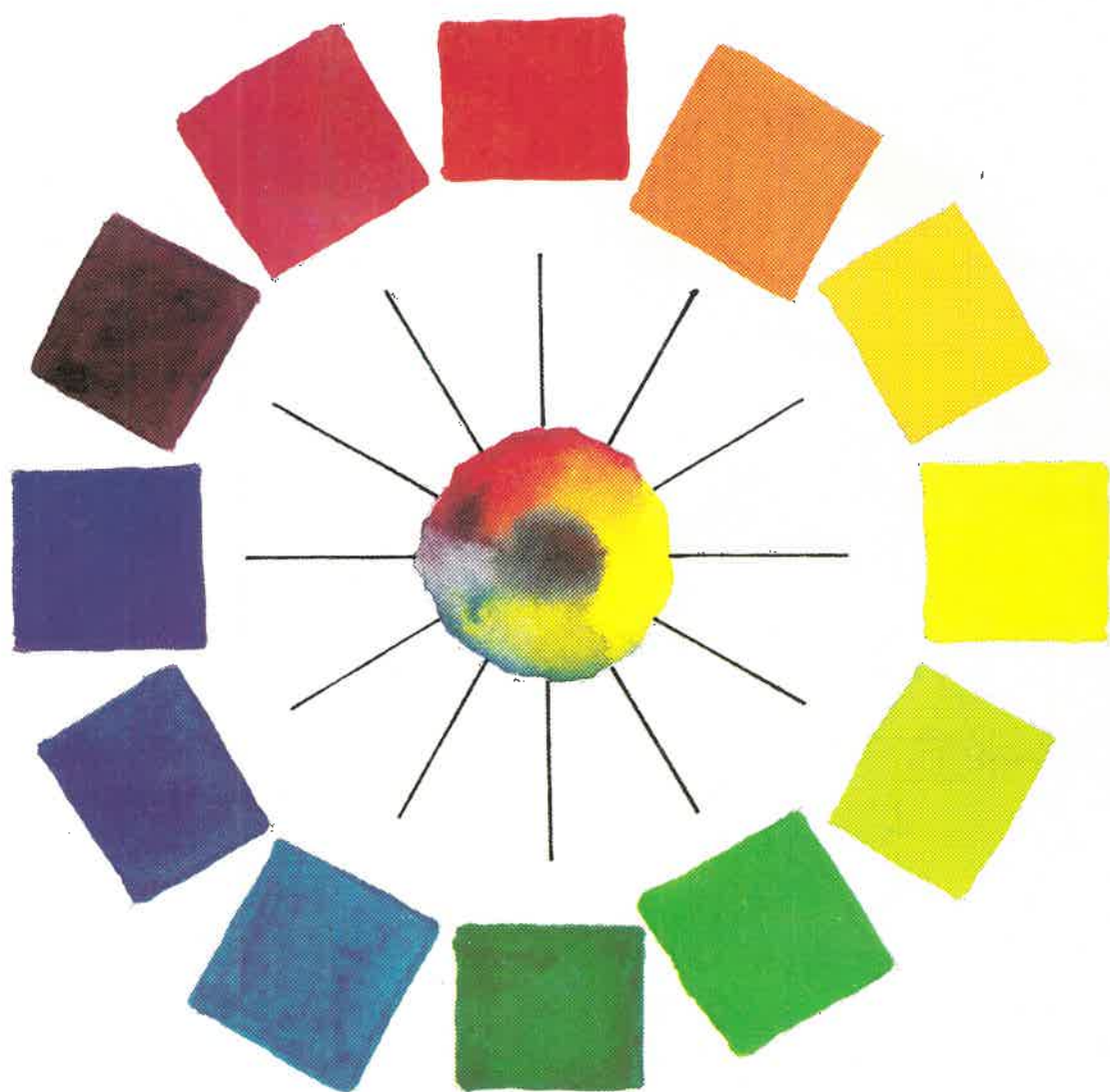


Figure 24: The colour wheel, showing a spectrum of warm colours on top and cooler colours below.

Along with the linear perspective the artist has to use the aerial or atmospheric perspective.

Aerial Perspective

It is that which deals with reduction and changes of tonal colour due to the distance

between objects and the viewer. Objects nearest to the viewer have full tonal colour; bright, light surfaces face the light source and dark surfaces occur when away from the source of light. Objects become less defined as they fade into the distance.



Figure 25b



Figure 25c

Figures 25b and 25c are examples of aerial perspective. The artist has to use aerial and atmospheric perspective to show the change in tonal values of near and faraway objects.

Atmospheric Perspective

In atmospheric perspectives, colours are modified by the atmosphere and take on a bluish tinge. Colour values appear faded when the object is distant as compared to objects nearby.

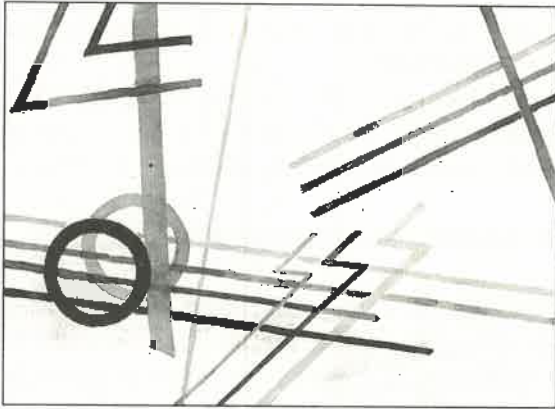


Figure 26: Imaginary space is created by differences in size, thickness, and positions.

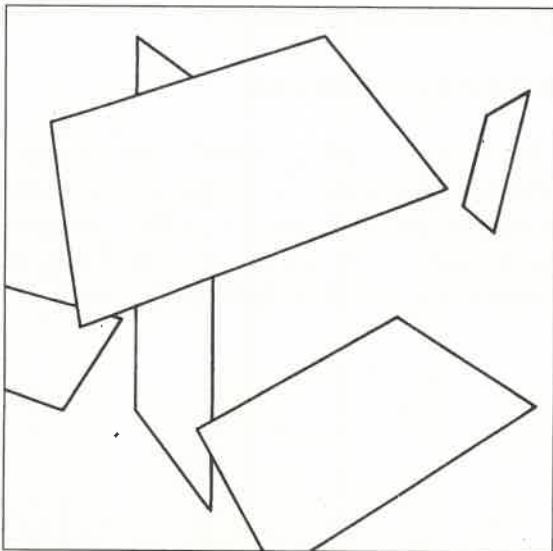


Figure 27: An example of outlines of two dimensional shapes.

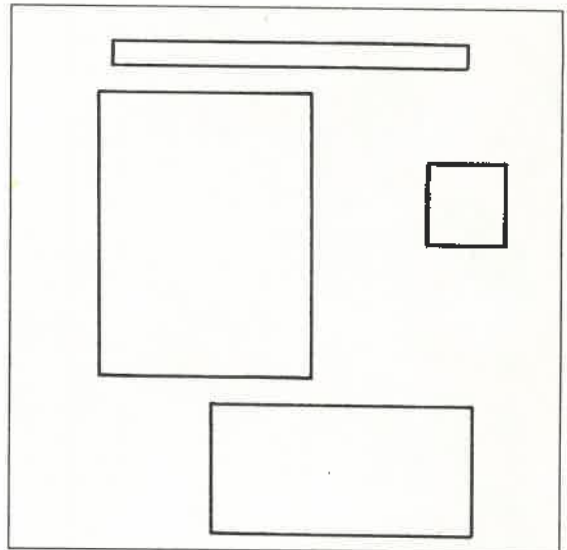


Figure 28: Another example of outlines of two dimensional shapes.

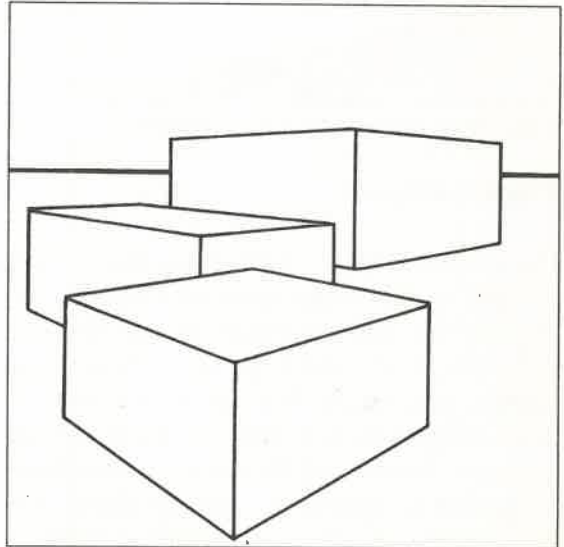


Figure 29: An example of solids occupying space.



Figure 30: A decorative pencil drawn composition.

Composition

Composition means 'putting together'. When we talk of the composition of a picture, we refer to the way in which all the different elements of art, which include colour, form, texture, and design, have been combined. A good composition is one in which all the different elements of the art piece have been integrated to achieve a definite effect. The composition should reveal, either directly or indirectly, the intentions of the artist. Otherwise it may be considered a bad composition. Compositional forms may thus be defined in terms of artistic intentions.

There are three basic compositional forms: Decorative, Representational, and Expository. They are rarely found in isolation and are usually combined in different degrees within the same work of art. In order to understand the principles involved we shall examine each of these forms or categories.

Decorative Composition

This is the most common form. It does not merely refer to the repetitive pattern but to the type of composition which aims to please the viewer by a direct aesthetic experience. Take the example of paintings by Matisse. These exhibit a strong decorative sensibility, based on shapes, repetition of motifs, and organized texture.

A decorative painting may be realistic, semi-realistic, or completely abstract, but in each case its aim will be the same: *To Please*.

Representational Composition

This type of composition takes as its aim the description of the familiar world of experience. An artist who draws or paints in representational style delights in pointing out such aspects of nature as beauty and the unexpected. Portrait drawing and landscape painting fall into this category.

Expository Composition

This aims to explain general relationships, abstract meanings, and causal connections. Religious paintings come into this category, as do surrealist paintings. This type of composition is always symbolic in nature.

3 PRINCIPLES OF DESIGN

The design or organization of all elements of art put together is known as FORM. As discussed earlier, when an artist makes use of all the visual devices or elements of art, line, shape, volume, value, light, texture, colour, perspective, and composition, he creates a design.

Form includes the principles of design or organization which are: unity, balance, harmony, rhythm, emphasis, contrast, and continuity. These principles should be regarded as guidelines open to interpretation. A work of art is the visual response created by the interpretation of the artist's aesthetic expression.

There are many different ways to begin a work of art, but the painter must begin with a flat surface or picture plane on which to create his composition. A picture is limited entirely to the picture frame and this should be clearly established at the beginning of a pictorial design.

Before the student can set about designing the elements of art in his plan, he must first know what are the principles of design. These are:

1. Unity ✓
2. Balance ✓
3. Harmony ✓
4. Rhythm ✓
5. Continuity ✓ *Repetition*
6. Emphasis ✓ *Dominance*
7. Contrast ✓

Gradation

Unity

It must be emphasized again that the principles of design or organization are only guidelines.

The principles are merely a help in finding certain pictorial solutions for unity.

A picture frame should be carefully selected to suit the painting, making sure that the elements of art, their directions, and movements are in harmony with the shape of the frame. Otherwise, it will disturb the pictorial harmony as a whole and prevent unity.

Designing in art consists of developing a unity out of diverse units. For example, the artist uses two opposing kinds of lines such as vertical lines and horizontal lines. The unifying factor between the two line directions would be a straight line type. Since both lines are straight, this likeness of type would relate

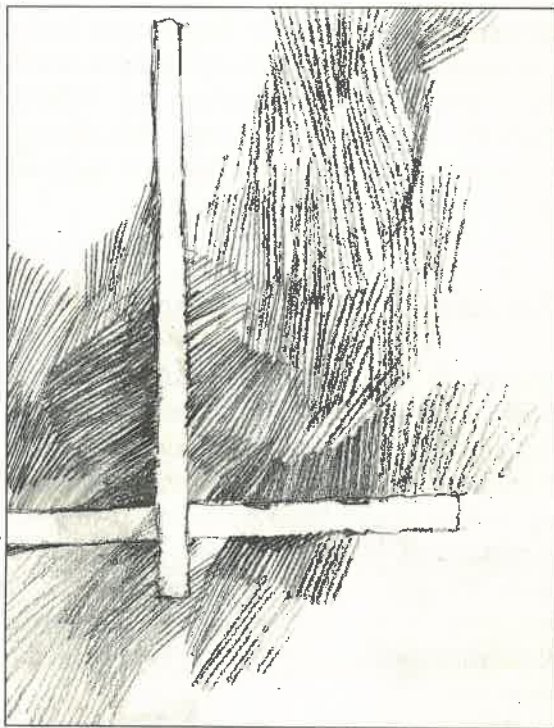


Figure 31: Shows unity between two lines, one vertical and one horizontal. The balance between harmony and variety need not be of equal proportion.

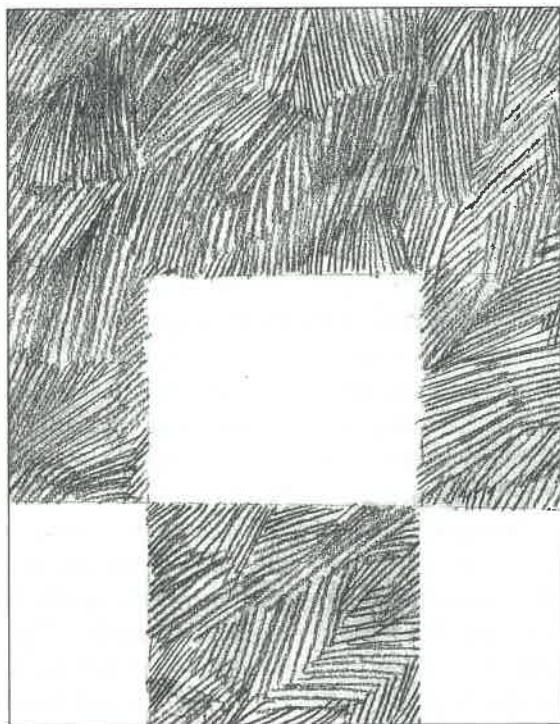


Figure 32

to them or unify them. So, harmonious means are necessary to hold contrasts together. Unity in a design is dependent on the balance between harmony and variety. The balance need not be of equal proportions, i.e. harmony may outweigh variety or vice versa.

Balance

Balance is a fundamental factor essential to unity of design. Without it, the problems of design cannot be examined. Balance can best be visually described in the simplest language by looking at a children's see-saw. It suggests gravitational balance in space or a central point. Balance can also be demonstrated by a weighing scale. The weighing is achieved through a visual judgement on the part of the observer.

When making a picture, balance is that 'feel' of optical equilibrium in all parts of the

work. The artist balances all the forces whether horizontal, vertical, diagonal, etc., in all positions and directions.

There are various factors, such as position, size, quality, etc., which, when combined with the elements of art, contribute to balancing a piece of art. The factor which plays the most important role in the balancing of a picture is the positioning of its components. Wrongly placed, there will be no balance. Each shape should be so placed that it contributes to the balance of all other parts in a picture. *Symmetry* is the simplest and most obvious type of balance. Other types of balance are *Radial* and *Asymmetrical*. A picture balanced by contradictory forces, as for example, blue and orange, shape and space, invites further investigation of these relationships and becomes an interesting subject to explore.

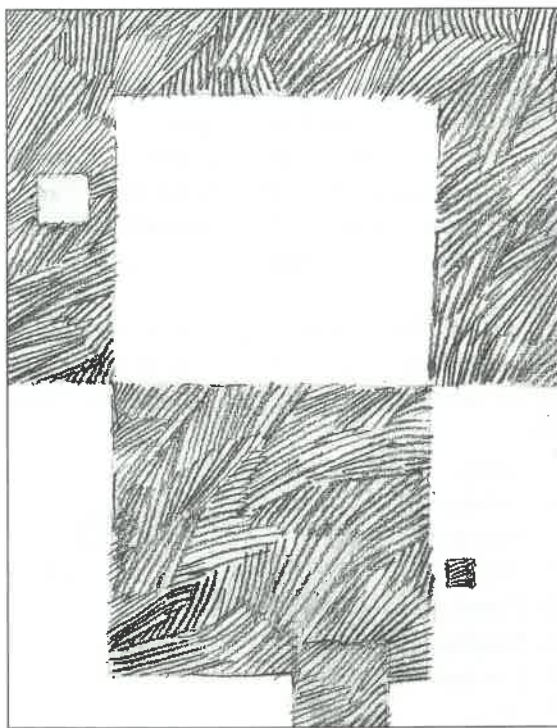


Figure 33

Both figures 32 & 33 show balance in a work created with space, light and shaded areas. They are balanced by contradictory forces.



Figures 34 and 35 depict harmony by the use of rhythm, continuity, and emphasis.



Figure 35

A=7030

Harmony

Harmony in a pictorial composition results when a *reconciliation* has been effected with the assistance of rhythm, continuity, and emphasis. Harmony is a necessary ingredient to unity; the same is the case in rhythm, continuity, and emphasis.

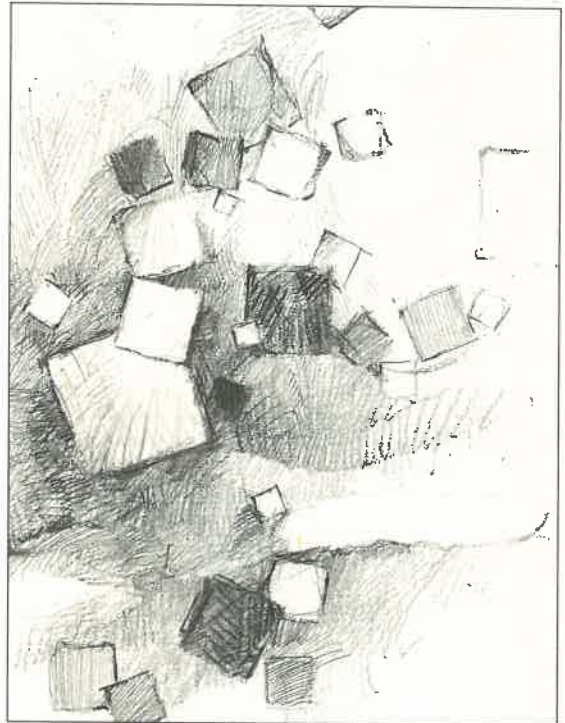


Figure 36 depicts rhythm through the repetition of squares.

Rhythm

Rhythm is the result of *repetition*, a continuance as is found in a flowing beat or tempo. In daily life, walking, running, swimming, or dancing have a recurring metre which creates rhythm. In art, if particular parts are repeated in a rhythmic manner, they will give both unity and balance to the work. Rhythm can be simple, when it repeats only one type or a composite of two or more measures, or it may be a complex variation. Rhythm brings order to the work; once the

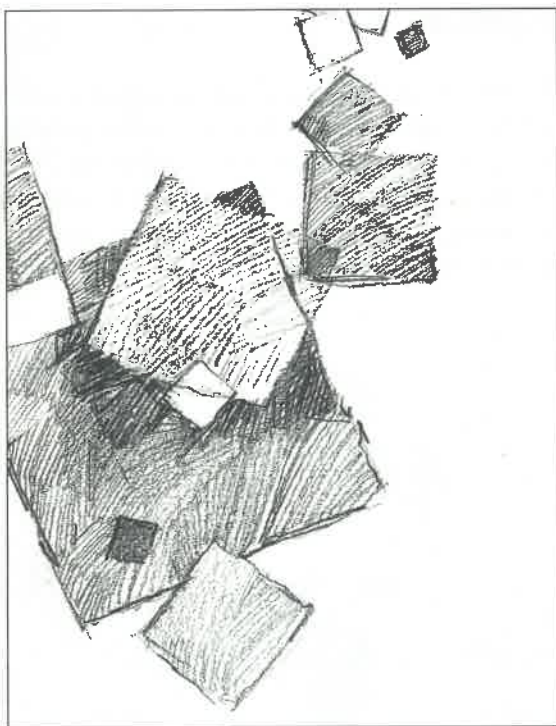


Figure 37 & 38 are examples of rhythm achieved by the help of squares and sticks.

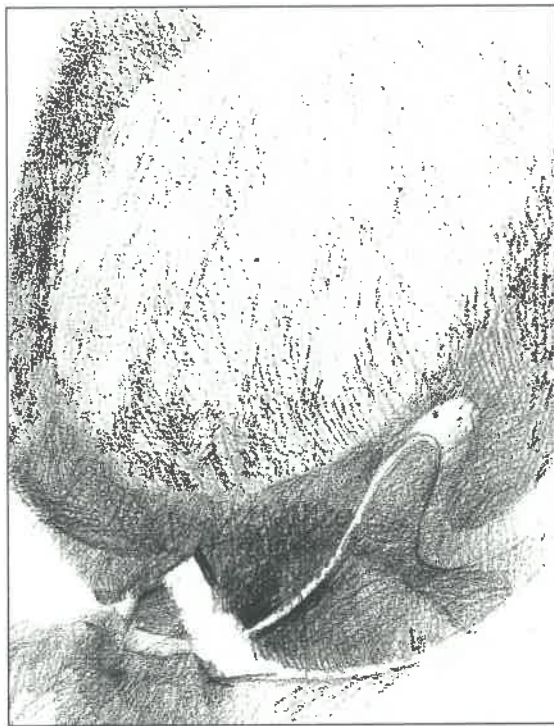


Figure 39 depicting pattern.

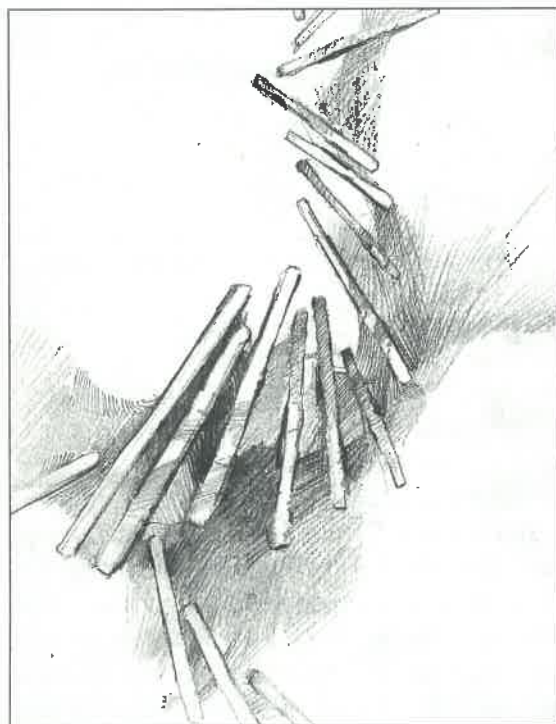


Figure 38



Figure 40 depicting continuity.

beat is established, the artwork emerges as a visual whole.

A pattern in a work of art is used to establish a harmonious relationship of parts, usually similar or repetitive. It will lead the eye from one area to another.

Rhythms, repetition, and pauses compose patterns. To create order and unity, the elements of art are interwoven with rhythmical beats from one picture part to another. A pattern formed in this way is generally two-dimensional or decorative in character, emphasizing the unity of design.

Repetition is not always duplication: there may be slight variations adding subtle interest to a pattern.

Continuity

Repetition, or continuity, and rhythm are inseparable, a method used to re-emphasize

visual units in a particular pattern. By these easy means the elements of a picture are united. Continuity does not always mean duplication but could be similar or close in appearance. Slight variations will give the pattern an interesting diversity.

A picture surface is static. Movement in a work of art is suggested by the placement and arrangement of the various parts of the picture. It is the artist's technique that gives the illusion of movement, guiding the eye in various directions.

Variations or contrast add animation to a dull picture surface. The equality of visual elements may be balanced but will also be static, without feeling. By adding variations the artist brings diversion and change into the work to command interest. Artists may attract attention by using contrasts, reworking areas, enriching surfaces. In art, some contrasts require greater emphasis than the rest of the components.

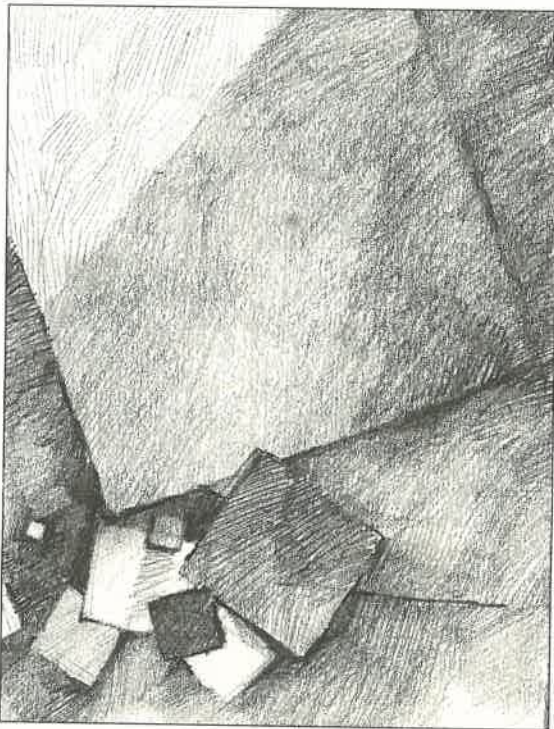


Figure 41

Here emphasis is established through repetitions.

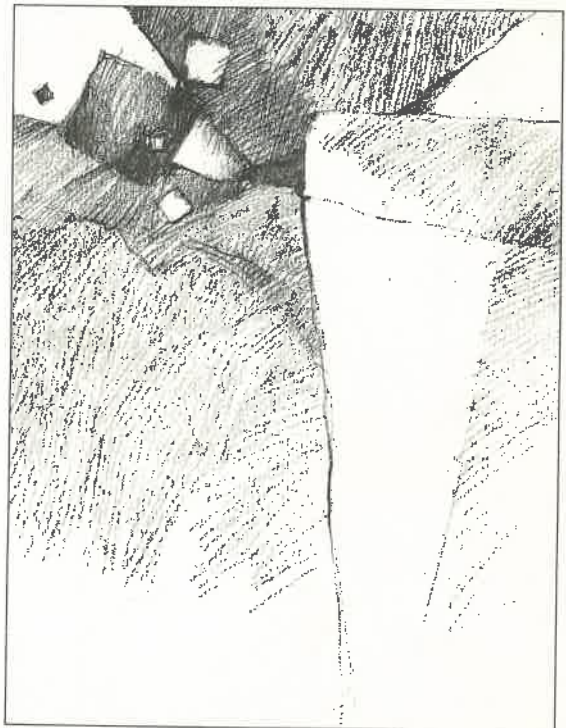
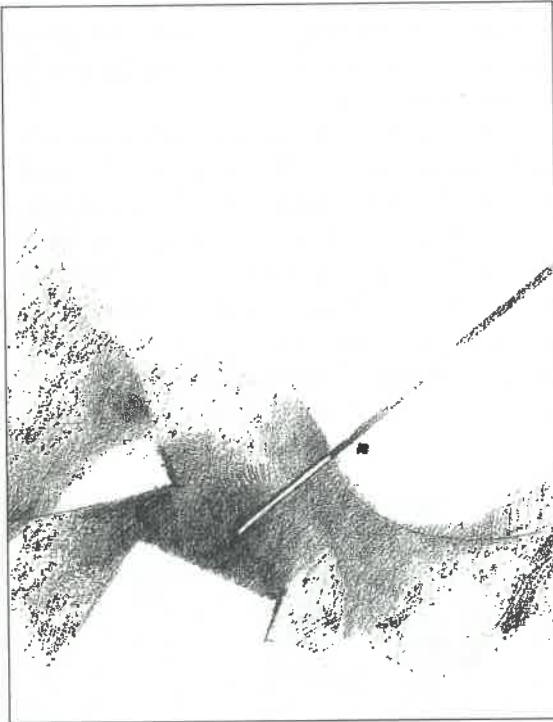


Figure 42

Emphasis

Each part of the picture should receive a degree of emphasis. In order to merit attention, a featured part should be in contrast to other areas. This dominating part becomes a point of interest and, when repeated in order, will create a point of emphasis (see figures 41 and 42).



Contrast

Harmony and variety are contrasting elements. They are the two parts of the whole which are essential to unity. The artist adds interest to the form, holding the attention of the viewer by adding variation (contrast) which adds dynamic vitality to his work.

Figure 43:
An example of contrast by holding
the attention through variation.

USEFUL TERMINOLOGY

Abstract or abstraction Term given to forms created by the artist but usually derived from the subjects observed or experienced. It involves an arrangement of natural objects to meet the needs of artistic expression. Sometimes there is little resemblance to the original object; the shapes seem to have no relationship to anything ever experienced in the natural environment.

Academic A term applied to any kind of art which stresses the use of accepted rules for technique and form organization. It represents the exact opposite of the original approach, which results in a vital, individual style of expression.

Accent Emphasis given to the elements of a composition to make them attract more attention than the other features which surround them. Accent may be created by brighter colour, darker tone, greater size, or any other means by which differences may be expressed.

Achromatic Relating to differences of lightness and darkness; the absence of colour.

Aesthetics The theory of the artistic or the 'beautiful'; traditionally a branch of philosophy, psychology, and the sociology of art. As a compound of the above, aesthetics is no longer solely confined to determining what is beautiful in art, but now attempts to discover the origins of sensitivity to art forms and the relationships of art to other phases of culture such as science, industry, morality, philosophy, and religion. Frequently used in this section to mean concern with artistic qualities of form as opposed to descriptive form or a mere recording of facts in visual form.

Amorphous Without clarity of definition, formless, indistinct, and of uncertain dimensions.

Analogous colours a) closely related colours, especially those in which we can see one common hue. b) Colours which are neighbours on the colour wheel.

Approximate symmetry The use of forms which are similar on either side of a vertical axis. They may give a feeling of the exactness of equal

relationship but are sufficiently varied to prevent visual monotony.

Artificial texture Textures of products created by man, e.g. glass, steel, plastic, etc.

Asymmetrical balance A form of balance attained when the visual units on either side of a vertical axis are not identical but are placed in positions within the pictorial field so as to create a 'felt' equilibrium of the total form concept.

Balance A feeling of equality in weight, attention, or attraction of the various visual elements within the pictorial field as a means of accomplishing organic unity.

Biomorphic shapes Shapes which are irregular in form and resemble the freely developed curves found in organic life.

Calligraphy The use of flowing rhythmical lines which intrigue the eye as they enrich surfaces. Calligraphy is highly personal in nature similar to the individual qualities found in handwriting.

Chiaroscuro A technique of representation which concentrates on the effects of blending the light and shade on objects to create the illusion of space or atmosphere.

Chromatic Relating to colour.

Classical Art forms which are characterized by a rational, controlled, clear, and intellectual approach. The term derives from the ancient art of Greece in the fourth and fifth centuries BC. The term 'classic' has an even more general connotation, meaning an example or model of first rank or highest class for any kind of form, literary, artistic, natural, or otherwise. 'Classicism' is the application of or adherence to the principles of Greek culture by later cultural systems, such as Roman classicism, Renaissance classicism, or the art of the Neo-Classic movement of the early nineteenth century.

Collage Similar to papier colle (q.v.) except that materials of all kinds are admissible to the picture. Painted and drawn passages are combined with scrap materials to create the desired effects.

Colour The character of a surface created by the response of vision to the wavelength of light reflections.

Colour triad A group of three colours spaced an equal distance apart on the colour wheel. There is a primary triad, a secondary triad, and two intermediate triads on the twelve-colour wheel.

Complementary colours Two colours which are directly opposite each other on the colour wheel. A primary colour would be complementary to a secondary colour, which is itself a mixture of the two remaining primaries.

Composition The act of organizing all the elements of a work of art into a harmonious whole. Each element used may have intrinsic characteristics which create interest, but it must function in such a way that the whole is more important than its parts.

Concept A comprehensive idea or generalization which brings diverse elements into some basic relationship.

Contour A line which creates a boundary separating an area of space from its surrounding areas.

Cubism A term given to the artistic style which uses mostly geometric shapes which are usually two-dimensional.

Curvilinear Stressing the use of curved lines as opposed to rectilinear (q.v.), which stresses straight lines.

Decorative The quality which emphasizes the two-dimensional nature of any of the visual elements. Decoration enriches a surface without denying the essential flatness of its nature.

Decorative shapes Two-dimensional shapes which seem to lie next to each other on a picture surface; shapes which divide or break up the pictorial surface into smaller areas.

Descriptive art A manner or attitude based upon adherence to visual appearances.

Design A framework or scheme of pictorial construction on which the artist bases the formal organization of his total work. In a broader sense, it may be considered as synonymous with the term form (q.v.).

Dominance The principle of visual organization which suggests that certain elements should assume more importance than others in the same composition. It contributes to unity by pointing

out that there is one main feature and all other elements are subordinate.

Elements of art structure The basic visual signs combined into optical vision by an artist to express his creative ideas. The combination of elements of line, shape, value, texture, and colour form visual language.

Expression A term meaning the special characteristics of form which mark the work of an artist or a group. When an art work is realistic but emotional or intellectual, it is referred to as a work of 'art expressive'.

Expressionistic art In which a desire is felt rather than perceived or reasoned. This form is defined as an exaggeration of objects to emphasize an emotion or mood. A movement of the early twentieth century.

Fauvism From the French 'Fauve' meaning 'wild beast', a movement which began in Paris about 1905. Expressionistic but more decorative, with a French touch of orderliness and charm rather than German expressionism.

Form Inventive organization of all the visual elements in accordance with principles which develop unity in a work of art.

Futurism A twentieth century abstract art movement. Futurism was based on an interest in time rhythm which the artists felt to be manifested in the machinery and human activities of modern times.

Genre Painting stressing subject matter of domestic trivia, homely scenes, sentimental family life, etc.

Graphic Forms existing in a two-dimensional space relationship. The graphic arts refers only to those art elements which are present in a two-dimensional surface although giving an illusion of three-dimensional quality.

Harmony The unity of all visual elements of a composition.

Hue A colour as shown in a spectrum or colour circle.

Illusion The visual reality created on the flat surface of the picture plane by the use of perspective, light and dark shading, etc.

Impression A strong effect produced in the mind.

Impressionism A late nineteenth century movement including painters such as Claude Monet and Camille Pissarro.

Intensity The saturation or strength of colour determined by the quality of light reflected by it. A vivid colour is of high intensity; a dull, of low.

Line A line is the path of a moving point, a mark made by a tool as it is drawn across a surface. It is visible as it contrasts in value with the surface drawn on.

Mass A three-dimensional form or body which stands out from the surface surrounding it because of difference in colour, value, or texture.

Media or mediums Materials and tools used to create a work of art.

Motif A visual element or a combination of elements which is repeated often in the artist's work to make it the dominating feature of his expression.

Narrative art The subject matter tells a story, but the term is more concerned with aesthetic quality than the story.

Naturalism The approach to art in which the forms used by the artist are all visually experienced.

Neutralized colour A colour 'greyed' or reduced in intensity by mixing with a neutral or complementary colour.

Neutrals Tones which do not reflect any single wavelength of light. Neutrals only create effects of darkness or lightness, e.g. black, white, or grey.

Non-objective An approach to art in which the visual signs are entirely imaginative and do not represent anything ever seen by the artist. The shapes, organization, and treatment are solely from the artist's imagination, and not associated with any previous natural form.

Objective A statement of observed facts and exact rendering of characteristics without alteration or interpretation of the visual image.

Optical perception To see, so that the mind has no other function than the natural physical sensation of recognizing by sight.

Organizational control The planned relationship of art elements in pictorial space.

Papier colle A technique of visual expression in which scraps of paper having various textures are pasted to the picture surface to enrich or embellish areas.

Pattern Emphasis on certain visual forms and direction within the visual field. Repetition of elements or a combination of elements in a systematic method.

Perception To take notice of and recognize an object, quality, or idea through the use of the physical or mental faculties.

Perspective A mechanical system of creating the illusion of three-dimensional space on a two-dimensional surface. Linear perspective is primarily linear in treatment; in aerial or atmospheric perspective, value and colour suggest or enhance the effect of space.

Pictorial area The area within which a design exists. Generally of measured dimensions, bounded by frame, mat, or lines.

Picture frame The final limits or boundary of the picture plane.

Picture plane The flat surface on which the artist executes his pictorial image.

Pigments Colours or substances used by the artist to paint.

Plasticity A quality which emphasizes the three-dimensional nature of shape or mass. On a two-dimensional surface, plasticity is always an illusion created by the use of visual elements in special ways.

Primary colours The three colours which cannot be produced by a mixture of pigments—red, yellow, and blue.

Primitive art The art of people with a tribal social order or a Neolithic stage of culture.

Radial balance In radial balance, forces are distributed around a central point. The rotation of these forces creates a visual circulation, adding a new dimension to a static image.

Rectilinear shape A shape which may be regular or irregular in character but basically composed of a straight line.

Repetition Planned pattern. Use of the same visual element a number of times in the same composition.

Romanticism Characterized by an experimental point of view which extols spontaneity of expression, intuitive imagination, and a picturesque rather than carefully organized, rational approach. The Romantic movement of nineteenth century artists such as Delacroix, Gericault, Turner, and others symbolizes this.

Shade, shadow The area of form which is dark in value as little or no light strikes it directly.

Shape An area having a specific character defined by an outline or by a contrast of colour, value, or texture with the surrounding area.

Simultaneous contrast Direct contact between two colours tends to reduce the similarity and intensify the differences of colour.

Space i) Measurable differences. Could denote time and duration. ii) Three-dimensional. Possessing thickness, depth, length, and breadth. iii) Decorative. In art, limited to length and breadth.

Spectrum The band of colours resulting when a beam of light is broken into component wavelengths of hues.

Style The characteristic manner of a work of art which enables the observer to ascribe the work to a particular artist, movement, period, or country. Or an individual's expressive use of media which stands apart.

Subjective colours Tones chosen by the artist without regard to the 'real' colour of the object to be painted.

Surrealism A style of artistic expression which emphasizes fantasy and whose subjects are usually revealed by the subconscious mind.

Symmetrical balance A form of balance achieved by the use of identical compositional units on either side of a vertical axis within the confined pictorial space.

Tactile Relating to the sense of touch.

Technique The skill and manner employed by an artist with his tools and materials to achieve a predetermined desired effect. The use of media can affect the artist's total concept.

Tenebrism Refers to a disposition of light and shade. A style of painting exaggerating the effects of chiaroscuro (q.v.). Larger amounts of dark value are placed close to smaller areas of highly contrasting light values in order to focus attention on certain important features.

Tension The dynamic interrelationship of force inherent in art elements; semi-architectural stresses affecting balance.

Texture The surface feeling of an object or representation of surface character. Texture is the actual and 'visual' feel of surface areas as they are arranged or altered by man or nature. i) Actual: A surface which stimulates a tactile response; ii) Simulated: A texture created by careful copying of the light and dark patterns common to surfaces; iii) Invented: Two-dimensional patterns derived from actual textures to fit pictorial needs and often created without any reference.

Tonality An orderly planning in terms of selection of colour schemes. It would concern not only hue, but value and intensity relationships.

Tone The character of colour or value of a surface determined by the amount or quality of light reflected by it. The kind of tone may be determined by the medium applied to the surface.

Trompe l'oeil A painting technique involving the copying of nature with such exactness that the painted objects may be mistaken for the real forms shown.

Unity The whole effect of a work of art which results from the combination of all its component parts.

Value The tonal quality of lightness or darkness given to a surface by the amount of light reflected by it. The character of colour in terms of light and dark is determined by the light reflected by the colour.

Value pattern Effect of light and dark on total picture. 1. Two-dimensional. Value relationships where changes in light and dark appear only on the frame. 2. Three-dimensional. Value relationships are planned to create an illusion of objects existing in depth.

Volume A shape having three dimensions or one which gives the illusion of solidity or mass.

Wash A transparent coating of colour applied to a surface allowing underlying lines, shapes, or colours to show through. Any transparent medium may be lightly applied to previously painted shapes or areas in order to modify their appearance without hiding them.

FINE ARTS



Figure 44: *Looking out of the Frame*, acrylic painting on board by Nahid Raza.



Figure 45: *Search for Water*, oil on canvas by A. R. Nagori.

Figure 46:
Man with Burden,
gorjan wood, Shahid Sajjad
(courtesy artist).



4 DRAWING

As early as from the fourteenth century in Europe, down to the present time, artists and writers on art have strongly advocated the importance of drawing in relation to art. The term 'drawing' is thought to have originated from the word *disegno*, in use during the Renaissance period. *Disegno* described a technique without colour; it was also the term used for a creative idea shown in its original concept in the form of an outline.

Traditionally drawings have invariably been used in the preparatory stage of picture making. Ideas in the form of sketches were often transferred to a wall, panel, or canvas to be worked upon further. As a medium in its own right, drawing came to be appreciated in the west during the time of the Renaissance. Sketches and working drawings began to be valued for the insights they offered into an artist's powers of invention. 'Shading' became a separate technique. According to Leonardo da Vinci, drawing was not only a science but something to be revered.

Prehistoric drawings and coloured images have been discovered on the walls of caves in France and Spain. Drawing surfaces have varied through history from cave walls and rocks to cloth, parchment, and, during the Middle Ages in Europe, vellum. Both parchment and vellum were made from the skins of animals, usually sheep, goats, or calves. Though paper was invented in China in the first century AD, it was not manufactured in Europe until the twelfth century. In China and Japan the arts of handwriting and painting shared the same materials—brush, ink, and paper—and a similar scroll format. In Asia, brushes and pens have been used for drawing in ink for centuries. First came reed or bamboo

pens, then quills from shaved feathers. Metal nibs were first made in the sixteenth century but not put to general use until the nineteenth century. Carbon ink was used in the east for hundreds of years before it reached Europe in the sixteenth century. The fluid known as 'Indian' ink is a waterproof version of carbon ink.

Before paper was introduced in Europe, metal points were used to make outlines on vellum or parchment. When paper began to be used in art studios, the artist first rubbed the surface with pumice stone to prepare it for the metal points. During the classical age in Europe, an implement called a 'stylus' was used to write on waxed tablets and, subsequently, for other purposes. It was used to transfer the main lines of a composition from one sheet to another or, in the making of a fresco, from a cartoon to damp plaster. Before the invention of the erasable pencil, the stylus was commonly used in creating the 'guide-lines' of a composition. In particular, the stylus was used to make perspective drawings and for measurements.

The range of drawing tools used by artists in Europe begins with the 'silverpoint', a metal point mainly used in the fifteenth century on prepared paper, often coloured to show the marks of the implement. Bistre ink was used in the Middle Ages but was not in common usage till the eighteenth century.

By the seventeenth century, the development of the graphite pencil negated the need for prepared surfaces and led the artist to experiment with various styles of drawing. Charcoal, black chalk, and red chalk were extensively used for preparatory drawings from the sixteenth century onwards.

These mediums allowed a greater freedom in the handling of the drawing. There developed an emphasis on light and shade, smudging and the use of white highlights.

In western art, drawing is regarded as the founding discipline of all creative activity. Drawing classes have been held since AD 1400 in Europe. During the fourteenth century, the training of artists was centred in and around the Master's workshop. In those days, aspiring artists were advised by Cennini that in the first place one must study drawing for one year, then remain with a Master at the workshop for six years so that one could learn everything he needed to know about methods and techniques, i.e. how to grind colours, boil glues, and grind plaster, how to lay the ground for pictures, and how to work in relief. Cennini further advised the student that, in order to master colouring, he should paint cloths and walls for another six years with the guilds. Until the late sixteenth century, art was controlled by the guilds formed in the thirteenth century. Rules set by the guilds established the lines of demarcation between the various trades such as woodcarver, gilder, and painter. As the status of artists grew, the guilds lost their power and hold over them. Gatherings of artists began to be held, where drawings and sculpture were displayed as patterns for others to follow. From here evolved private and public academies with a rigid curriculum. In 1490, Michelangelo attended Bertoldo's sculpture school in Florence, where drawings done by artists such as Donatello and Filippo Lippi were preserved. For many artists, drawing was the main criterion of art. Artists such as Rubens, Rembrandt, and Turner made numerous drawings and sketches of their work.

Changes in art and aesthetic idioms in the twentieth century freed drawing from a subservient role. It finds expression in the works of such consummate artists as Rodin, Matisse, Picasso, and, more recently, Hockney. In Pakistan, artists such as A. R. Chughtai and Jamil Naqsh are distinguished

not only by their work in the field of painting, but also for the exquisite quality achieved in their drawings.

A. R. Chughtai wrote about his work, 'I have such mastery of drawing that I never use an eraser. The secret of my success is my mastery of drawing. No one can imagine the hard work I have put in, learning to draw.'*

With reference to the art student of modern times, every drawing produced, whether under the instructions of the teacher or otherwise, has some interpretation of its maker which can be termed his imagination. Drawings help to develop an idea in the same way as thoughts can be clarified by writing them down on a piece of paper.

An essential element of sculpture, architecture, and design, in modern times drawings are often made to enable a client to visualize how the finished work will look. Drawings for utilitarian purposes are made after the creative thinking, to demonstrate a particular purpose or style, perhaps for the construction of a building or the making of its furnishings, to create a logo, or for numerous other practicalities.

Still life drawings are usually the student's first subjects. It is essential to learn the perspective and composition explained in the elements of art. Having learnt the art of drawing cubes, vases, flowers, etc., the next step is to practise drawing human figures from live models, under the guidance of a teacher. The progression is from one to two figures and then, finally, the composition of a full drawing.

A serious art student is advised to carry a sketch book at all times in which to record his impressions wherever he may be. There are historic or other interesting buildings in all cities of Pakistan where the beauty of elements of architecture can be examined and also in nature, sketching and drawing will help in shaping a work of art.

*'Abdur Rehman Chughtai' by Marcella Sirhindi. PhD dissertation, Ohio State University, 1984.

5 PAINTING

Pigments or colours can be derived from many sources such as earth and natural dyes from plants and minerals, or they can be chemically synthesized. The earliest painted images known to man are some 15,000 years old. They were found in the caves of Altamira in Northern Spain and at Lascaux in the South of France. The pigments used in these prehistoric sites include burnt wood, bone chalk, and earth colours.

The ancient Egyptians used a technique of hot wax painting and employed a form of water colour made by mixing ground pigments with gum arabic. In addition to the colours used by prehistoric man, the Egyptian artists used seven colours, azurite (a blue mineral made from the azure stone, an ore of copper used as a pigment in prehistoric times), malachite (a mineral that produced a beautiful green colour), orpiment (a compound of sulphur and arsenic that produced a brilliant yellow colour), realgar (also made from sulphur and arsenic in equal quantities, producing a bright red), cinnabar (red sulphate of mercury also known as vermillion), blue frit, and white lead.

The Romans added indigo, Tyrian purple, and verdigris to the variety of colours available. By the end of the thirteenth century, lead tin (yellow), madder (red), ultramarine (lapis lazuli-blue), and vermillion were also in use. The artist's palette expanded in the fourteenth century to include copper resinate (green), white lead, and azurite (copper carbonate, blue).

Prussian blue and Naples yellow were discovered during the eighteenth century, while the nineteenth century saw the use of chemicals expand the range of colours

available to include colours such as purples and greens. An analysis of pigments can often help in dating paintings based on knowledge of when they were discovered and hence of their availability to the artists.

Tempera

Until the end of the Middle Ages, the majority of paintings were in *Distemper* or *Tempera*. The most common medium in Romanesque manuscripts was egg tempera. The egg white was beaten and left to settle to a clear, smooth-flowing liquid which was easy to handle and mixed well with the ground pigments then available. Traditionally egg white and egg yolk are used together with an oil such as linseed oil, but egg can also be used with water alone. Its quick drying properties and luminosity of colour account for the attraction of tempera.

The ground or base for wood panel tempera was traditionally *Gesso* (calcium sulphate) in Italy and chalk in Northern Europe; both were mixed with size or animal glue, then built up in series of layers and finally polished to form a surface. On this the painter would draw his design in silver point or charcoal or transfer a design by pounding or tapping charcoal through a pricked point and drawing it into the gesso. Then he would build up the composition with thin layers of paint and washes. Early medieval tempera paintings were modelled from a green earth ground, which formed shadows to paler highlights, against a gold leaf ground with punched decoration.

Fresco

The word 'fresco' in the Italian language means fresh. We know it as a wall painting technique in which powdered pigments or colours are mixed in water and applied to a wet lime plaster ground. The colours then fuse with the plaster, forming a permanent waterproof surface. Best suited to warm climate areas, it was first used in the west in Italy during medieval and Renaissance periods. In ancient India a similar technique was used to decorate the palaces of the rulers, and Buddhist monasteries such as the famous Ajanta caves.



Figure 47: Detail from a Mural, Ajanta Caves (Fresco, c. AD 5th–6th century).

The Earliest Oil Paintings

By the mid-fourteenth century panel painting had come into fashion and a century later, new techniques in oil paintings were

discovered. However, the basis of oil painting as we know it today was discovered in the thirteenth century in Norway. It was not perfected until AD 1422 when Jan van Eyck is credited with introducing the oil medium which revolutionized Flemish painting. This medium was later adopted by the Italians.



Figure 48: *A Drake Standing Beside a Pool*, gouache from the Dara Shikoh Album (1635).

Water-Colour and Gouache

Water-colour is made with pigment bound in a gum arabic medium. It was used as a paint in ancient Egyptian and Eastern paintings with beautiful results, and in the eighteenth and nineteenth centuries by British landscape artists. Extremely versatile, the medium of water-colour is distinguished by its translucent quality. Water-colourists are generally particular about the paper they use, preferring a handmade variety as a surface for their work. A traditional water-colour method began with



Figure 49: Mountain landscape in watercolour, by Garhwal Thomas and William Daniels, April 1789.



Figure 50: *And the Bird Flew Away*, acrylic, Bashir Mirza.

a preparatory sketch rendered in pencil, pen and ink, or chalk. The light ground and texture of the paper was treated with layers of transparent washes, one over another to obtain gradations of colour and tone, leaving areas of paper unpainted to prepare highlights. Some dramatic effects are obtained by monochrome techniques producing water-colours painted in only one colour such as soot brown, bistre or sepia (ink from cuttle fish).

Gouache is a related technique used by the miniature painters of the Mughal schools and, since the eighteenth century, by painters in France. With gouache, the binding medium is glue, and white pigment is added to give it some opacity. It is a medium popular today in making commercial illustrations.

Pastels

Pastels are sticks of pigment or colour made by mixing powdered pigment with gum or resin binder. Pastels can easily be blended with a finger, resulting in soft contours which retain the freshness of colour. Pioneered in Venice, the medium was adopted by Degas,

who experimented by using it with turpentine or steam to achieve different effects.

Acrylic

A contemporary development, acrylic paint is manufactured from pigment bound in synthetic resin, such as acrylic or PVA. Developed in the 1960s, it was initially used for painting walls. Acrylic is an opaque, water soluble, quick drying paint. The colour, unlike oil paint, does not alter with time and can be diluted to transparency if required. It has been used to great effect in the paintings of David Hockney and F.N. Souza and, due to its extremely versatile, quick drying properties, is very popular with many artists in Pakistan. Acrylic is now an accepted medium and many artists the world over are using it either singly or in combination with other mediums.

For a better understanding of various types of paint and their possible effects, make it a practice to visit the local galleries and art exhibitions. There you will find a wide range of styles and mediums and often witness the exciting results of artists' experiments.

6 SCULPTURE

Sculpture is the art of creating forms in three-dimensions, either in the round or in relief. A discipline older than painting, pieces of sculpture found in prehistoric caves date back to 30,000 BC. It appears that the earliest cave people collected stones with natural shapes that appealed to them, and often scratched lines on them. Later, more fully worked pieces emerged, such as the limestone, bulbous figure from Austria, 'Woman of Willendorf' (c. 25,000–20,000 BC).

Another ancient find is known as the Palette of King Narmer (c. 3150–3125 BC), a carved slate slab celebrating the victory of the king who unified Upper and Lower Egypt. The oldest known image of an historic person identified by name, it is now in the Cairo Museum. The style of the figure portrayed, eye and shoulders in frontal view, head and legs in profile, was a formula worked out to show the royal personage as completely as possible. The same style was adopted for non-royal tombs in the Old Kingdom.

In the Boston Museum of Fine Arts, a group sculpture of Egyptian King Menkaure and his wife Queen Khamerernebty (c. 2515 BC) stands almost six feet in height. Carved in slate, this sculpture in the round was carved in the following method: After marking the faces of the rectangular block with a grid, the artist drew the front, top, and side views of the statue on the relevant face, then worked inwards until the views met. As was customary in the Old Kingdom, the sculpture must have had vividly coloured eyes painted or inlaid with quartz.

One of the most famous sculptures in the world is the head of Queen Nefertiti of the eighteenth dynasty (c. 1348–1346 BC). This

perfect profile of a beautiful woman past her first youth is now in the Egyptian Section of the Berlin Museum. While in Egyptian sculpture one finds the sculptor's form essentially 'cubist', the Sumerians based their sculpture on cones and cylinders. The oldest existing examples of Greek stone sculpture show the influence of Egyptian traditions. Yet the Egyptian sculptors never entirely freed their figures from the stone.

Early Greek statues carved of marble (c. 600 BC) were the unclothed youth (*kouros*) and elegantly clad girls (*kore*) which are among the first free-standing sculpture pieces in the entire history of art.

Bronze casting as a medium of sculpture was used in Greece and Rome as well as China and Africa until the Middle Ages when the art of casting appears to have been almost lost. Later effigies were made by hammering thin plates of bronze on to a wooden armature.

One of the earliest large scale cast bronzes, St. Peter in the Cathedral, Rome, is attributed to Arnolfo di Cambio in the fourteenth century, but by the fifteenth century the art was well established. Modern bronzes continue to be made using ancient techniques, either in sand moulds or by the lost wax method.

Sculpture may be monumental, religious, an aid to contemplative thinking, symbolic, educative, representational, or expressive in intent. A sculpture may be intended to last through the ages or be merely a temporary project, as are many modern pieces. Basically there are two opposite concepts of sculptural form, carved, or glyptic, and modelling.

Glyptic consists essentially in carving unwanted material from a block of stone or

wood until a form is freed from the mass. This is a Neo-Platonic concept of which Michelangelo's work is a prime example. The opposite occurs when form is created by manipulating a soft material such as clay, wax, or plaster. These are generally made into a lasting form by firing, as with clay, or by casting in metal. *Modelling* often involves using clay or wax as a preliminary material for translation into plaster, bronze, lead, or even stone. Carving and modelling are thus two separate and complementary aspects of sculpture.

A three-dimensional aspect is fundamental to sculpture though in the last fifty years there has been a major change in concepts. New developments in sculpture include kinetic, environmental, and minimal art movements. Artists have broken with tradition and distinctions are often blurred. There may be constructions of wires, steel plates, and plastic in bright colours. An art movement known as *Arte Povera* began in Italy in the 1960s when artists collected discarded objects and junk as materials for sculpture.

Modelling Techniques

Clay, wax, and plaster are materials that may be used at the finishing stages of modelling or the initial stage of sculpture in other mediums. A three-dimensional shape is first built around an armature (usually a frame or support in metal or wood). This provides the base or support surface for clay, wax, or plaster of paris. Whichever material is used, it is first modelled with the fingers. When required, a modelling knife is used to cut excessive mass. Scrapers, which are like flat wooden spoons, are used for smoothing the surface. When the model is ready and is required to be fired, a kiln is used. Models made of wax and plaster of paris are left in their natural state. If a clay model is required to be cast in plaster of paris

or bronze or any other metal, it is first prepared for casting by different methods and then plaster casts are made. The casts are filled with either liquid plaster of paris or a molten, liquid metal. After the material has completely dried, the plaster cast is removed by chiselling, cutting, or scraping until the final sculpture emerges, to be further polished and finished as desired.

Carvers often make small models or maquettes as a means of working out the design of a sculpture before starting to work on the stone or wood. A mechanical pointing machine may be used by the sculptor to scale up the size for transfer into stone or wood sculpture.

The various types of materials used in stone carving include marble, sandstone, granite, or alabaster, and the tools are the mallet, point or punch for chipping the stone into a rough shape, and a square hammer to work the surfaces. These surfaces are then smoothed and refined with the help of a set of flat, bull-nosed, and tooth or claw chisels. For undercutting and definition, a drill is often used to simulate depressions or elements such as hair. When the sculpture is finished, it is refined and polished with the help of rasps, files, and abrasives.

Wood carving will reflect the wood available in the sculptor's surroundings. Limewood was used by German Renaissance sculptors, while Oakwood was used in England. Sculptures and reliefs are carved from the heart-wood of the tree and in the direction of the wood grain. The basic tools for wood carving are similar to those used on stone sculptures but are much lighter and sharper. To protect the finished wooden sculpture, a coat of natural oil and varnish is used which also enhances the grain and colour of the wood. Numerous other materials have been adapted by sculptors for carving, such as ivory, amber, shells, and semi-precious stones.

Casting Techniques

There are two principal casting techniques: the lost-wax technique and the sand casting technique.

Both of the above techniques are centuries old, though bronze casting was not included in the curriculum of art schools until the 1960s. At this point in time bronze, brass, and copper and tin alloy are the main metals used in casting.

The Lost-Wax Technique

The lost-wax process requires the sculptor to first make a solid core model of plaster and grog (previously fired clay ground up and mixed with fresh clay), then build up around the core a wax layer to the thickness of the eventual bronze. Wax rods, or risers and runners, are fixed at angles to the model and, when the wax is later burnt away, channels are formed for escaping gases and to pour in the molten bronze. The model is covered in plaster with rods projecting and meeting in a funnel-shaped depression at the bottom. The model is then placed in an inverted position in a hot oven set at 1200° F. This causes the core to harden and the wax is burnt away. In this way a thin cavity is formed into which molten bronze is poured via the funnel. Once the bronze has cooled, the plaster core, etc., is chipped out. The surface of the metal is then chased (chiselled and polished), and a final patina induced (chemical colouring) as decorative enhancement. As a final stage the piece is sealed with lacquer.

The Sand Casting Technique

Sand casting requires a mould of a model to be made using special casting sand which, even when inverted, will retain a detailed

impression. The sculptor takes two rectangular frames made of metal and puts dampened sand in them. The mould is made by packing sand around each of its two halves in turn. Each mould therefore contains half the mould. These two halves are then clamped together to form a flask or whole. Channels are then cut into the sand as vents or gates, with a wider channel for pouring the metal. A cavity for the molten metal is created by suspending an inner sand core within the metal, which is held in place with metal rods. The whole is hardened in a hot oven. Molten metal is then poured in. Once it has cooled, the mould is broken away. This final product of characteristic raised lines was often used for decorative purposes by the Chinese.

Modern techniques in sculpture now include using welding, construction materials, plastic, etc., to obtain the required results.



Figure 51: *Heart Construct* (15" x 15"), sculpture in mild steel by David Alesworth.

Relief Sculpture

Relief sculpture is an artwork that is not free-standing but has a background surface which is similar to a painting. There are several terms to distinguish the varying depth of projection, ranging from high relief (*alto-rilievo*), which is almost detached from the ground, through medium or *mezzo-rilievo*, to bas-relief (*basso-rilievo*), and *rilievo staccato*, which is hardly more than scratched on the surface. *Cavo-rilievo* is the same as *intaglio*, that is, inversed relief, sunk into a surface instead of embossed upon it.



Figure 52: Relief Sculpture, Gandhara Art; the Buddha meditates surrounded by images of his past life (c. AD 2nd century).

A Century of Sculpture

Auguste Rodin (1840–1917)

Born in Paris, Rodin achieved great fame during his lifetime, though during his early years he experienced constant rejection by the French establishment. The first independent free-standing figure he worked on, *Bronze Age* (1877), was so true to life that it gave rise to the absurd story that the form was cast from a

live model. Among his most celebrated pieces are *The Burghers of Calais*, *The Thinker*, *The Prodigal Son*, *The Kiss*, and a study of the writer, Balzac.

Rodin said of his work, 'I do not represent all the parts of my figures in the same moment of their existence. Anyone looking over one of my statues from one end to the other, will be watching the unfolding of their movements through all the different parts of the work, from its birth to its completion.'

Rodin liberated nineteenth century sculpture from the limitations of academic traditions. He was far more interested in perceptive and truthful characterization than in ideal beauty.

Aristide Maillol (1861–1944)

Born at Banyuls in the Eastern Pyrenees, Maillol studied sculpture and painting at the 'Ecole des Beaux-Arts', Paris. Involved in easel painting and designing tapestries, Maillol did not begin to work as a sculptor until he was forty. Working almost entirely on the female form, Maillol returned to the ideals of Greek art of the fifth century BC. One of his most famous works, the *Cezanne Monument*, was placed in the Tuilleries of Paris. His work is represented in the museums of modern art in Paris, London, and New York.

Umberto Boccioni (1882–1916)

The Italian sculptor Boccioni was one of the original Futurists. He composed a 'Manifesto of Futuristic Painting' in 1910, to be followed later in the year by 'The Manifesto of the Techniques of Futuristic Painting'. In 1912, Boccioni wrote a 'Manifesto of Futurist Sculpture' in which he attacked the academic traditions in sculpture. One of his most famous pieces is *Unique Forms in Continuity and*

Space, a dynamic bronze cast piece that gives the illusion of movement, now in the Tate Gallery, London.

Jean Arp (1887–1996)

Jean Arp, was born in Alsace, France, and along with Kandinsky, Marc, and Klee, belonged to the Expressionist Blaue Reiter (Blue Rider) group established in 1911. Initially, rectangular and geometric forms dominated Arp's work, but after 1917, he was totally absorbed in the simple, rounded forms now associated with his name. The limitations imposed by the flat canvas surface persuaded him to turn to sculpture and three-dimensional compositions in carved wood. After 1924, Arp joined the Surrealistic movement. A versatile artist, he worked in collage, lithograph, and engraving besides sculpture, and made numerous designs for rugs, embroideries, and tapestries.

Henry Moore (1898–1986)

Henry Moore was born in Yorkshire, England. Awarded a scholarship after being wounded in the First World War, he began to study art in Leeds, where he met Barbara Hepworth. Both he and Hepworth continued their art studies at the Royal College of Art, London. He won a travelling scholarship in 1925, and set off for Paris and Italy.

Moore's international reputation began in 1948 when he was awarded the prize for sculpture at the Vienna Biennale. He expressed natural forms in terms of wood or stone, although he also used bronze extensively. His work blended organic abstraction with qualities of monumentality and nobility. Many of his sculptures merge the human form with environmental elements, creating shapes suggestive of nature or

geometric forms. Moore stated that the first time he pierced a hole in a stone it was a revelation to him. The hole became an integral feature of his sculpture. The interplay between the mass and the void, positive and negative forces, was intrinsic to Moore's sculpture whether he worked in wood, bronze, or stone. The subject of the family group, mother, father, and child, was explored by Moore many times. The uncluttered forms convey both dignity and warmth of feeling.

Barbara Hepworth (1903–75)

Barbara Hepworth was one of the first British abstract sculptors. For most of her life she carved directly in wood or stone, though in later years she also used bronze. Married to artist Ben Nicholson for eighteen years, in 1939 she settled in St. Ives, Cornwall, where her studio is now a museum. She created a series of abstract works in which the large masses are set off by strings or wire representing '...the tension I felt between myself and the sea, in wind and the hills.'

Alexander Calder (1898–1976)

Calder, who was born in Philadelphia, USA, trained as an engineer. In 1926 he went to Paris, where he began to experiment with new sculptural forms. Calder's main innovations, *Stables* (so named by Arp), and *Mobiles* (so named by Duchamp), are a blend of engineering and sculpture.

Constantin Brancusi (1876–1957)

Brancusi was born in Rumania and acquired his art education in Bucharest and Cracow. After travelling extensively, he settled in Paris in 1904. There he came under the influence of

Rodin and the newly discovered Negroid sculpture. Brancusi abandoned modelling and took up direct carving, developing a formal simplicity in his work. He said, 'Simplicity is not a goal, but one arrives at simplicity in spite of oneself, as one approaches the real meaning of things.' In 1928, Brancusi was involved in a court battle that made art history. The United States customs service refused to accept his sculpture, *Bird in Space*, as a work of art and levied duty on it based on its weight in metal. Brancusi won the ensuing court case, which was a triumph for the modern art movement.

Alexander Archipenko (1887-1964)

Born in Kiev, Archipenko completed his art studies in Moscow and in 1908 settled in Paris, where he mixed with the early practitioners of Cubism. He created highly stylized pieces using convex and concave surfaces. The artist's use of space and holes to create a new concept of looking at the human form was both Futuristic and Cubist in style. His work changed in 1914, when some Egyptian art he had seen in the Louvre inspired a body of work he referred to as 'sculpto-painting'. This experiment in merging form and colour exerted considerable influence on subsequent generations.

Archipenko finally renounced Cubism in the 1920s and gravitated towards a more traditional art.

Ossip Zadkin (1890-1967)

Zadkin, born in Russia, studied art in Paris from 1909, where he met and was influenced by the Cubists. His work, in wood and stone, was inspired by Greek mythology, literature and the war-torn world. His famous works include a monument to van Gogh at Auvers-

sur-Oise and a bronze memorial to the destruction of Rotterdam (*The Destroyed City*, 1951-3), which touched the conscience of the world.

Jacques Lipchitz (1891-1973)

Lipchitz was born in Lithuania where his father hoped to make an engineer out of him, but he settled in Paris in 1909 and studied art at the 'Ecole des Beaux-Arts' and the 'Academie Julian'. There Lipchitz met Picasso, Juan Gris, and Rivera, and worked his way through phases where he was influenced by Cubism and Negro sculpture before finding a style of his own. After much experimentation he created his *sculpture transparentes*, a style of openwork sculpture. He settled in America in 1941.

Alberto Giacometti (1901-66)

Giacometti was a Swiss sculptor, painter, and poet, the son of an Impressionist landscape painter. Giacometti studied in Geneva, Italy, and Paris. His first works date from 1925-8. He became a Surrealist for a short time in the 1930s, and his work of this period is referred to as 'still-life' or 'magic objects'. The most famous object of this period is *The Palace at 4 a.m.* (1932-3), now in the collection of the New York Museum of Modern Art.

From 1935 onwards, the human form enjoyed a predominant place in Giacometti's work, reflecting the frailty and isolation of mankind in the twentieth century. He built up his wraith-like figures working directly with plaster of paris on a wire armature.

Marino Marini (1901-80)

Originally a painter, Marini became one of

the leading Italian sculptors of the twentieth century. He trained in Florence and Paris but found his inspiration in the classic traditions of his own country. He began to explore the theme of horse and rider from about 1935 and produced numerous pieces in bronze and in wood. His first major work was *Pompona* (1941), which showed the influence of Etruscan and Archaic Greek art. The horse and rider was also an Archaic Greek concept but his initial inspiration came from the sight of war-threatened villagers fleeing their war-torn homes on horseback.

Marini gifted the Marino Marini Museum to Milan in 1974, along with several of his portrait busts, including ones of Chagall and Henry Moore.

Naum Gabo (1890–1977)

Gabo was born in Russia, where he abandoned his medical studies to involve himself in art. In 1913 he joined his brother, the sculptor Antoine Pevsner, in Paris and from there proceeded to Oslo, where he studied art. In Oslo, he produced his first sculpture in the style of geometrical Cubism. In 1920 Gabo returned to Russia and expressed his theories of Construction in his Realist Manifesto. In this statement he said that, '...space and time are the only real things in life and for that reason art must be based on these two factors.' That same year he exhibited his first kinetic sculpture, a piece incorporating contemporary materials such as metal tubing, glass, and plastic. The sculptor lived for a number of years in St. Ives, Cornwall, and in Paris where he met Ben Nicholson and Barbara Hepworth. After the Second World War he moved to the United States. In 1957 his first public monument, a 50-foot sculpture, was erected, but most of his work consists of small constructions in glass, perspex, wire and similar materials.

David Smith (1906–65)

David Smith was one of the innovators of welded metal sculpture, opening up new arenas in twentieth century art. In 1925, American-born Smith worked in a car factory, where he learned techniques which proved useful to him as a sculptor. In the 1930s, influenced by Picasso's sculpture, he began working in welded steel, creating large abstract constructions. His work, which contained both Cubist and Surrealist elements, covered a variety of themes. He said that his themes were of his era: 'power, structure, movement, progress, suspension, destruction, brutality'.

Eduardo Paolozzi (b. 1924)

Paolozzi was born in Scotland of Italian parentage. He worked in Paris between 1947 and 1950, where he got to know Giacometti and became influenced by Klee. In the 1950s, the artist was one of the moving forces behind the development of Pop Art in London. In recent times he has mainly worked on large metal sculptures.

Anthony Caro (b. 1924)

For a time an assistant to Henry Moore, Caro was the first British sculptor to create large works from industrial steel independent of base or pedestal. In 1966, he began making what he termed *Table Pieces*, small scale pieces, often consisting of found objects, to be arranged on table tops. His work is included in many major international collections.

Carl Andre (b. 1935)

Andre became involved with standardized interchangeable units while working with the Pennsylvania Railway between 1960 and 1964. From that time, he began assembling groups of bricks, styrofoam planks, and cement blocks, extending them horizontally on the floor. Contrary to the traditional concept of sculpture, these separate pieces are not fixed together in any way. Each piece can be picked up and interchanged with the other. In this way, the artist involves the viewer in the creation of the artwork.

Tony Cragg (b. 1949)

Cragg's early work in plastic established his vocabulary of materials, objects, and images, incorporating floorspace and the wall. His innovative use of the detritus of urban living and industry addresses environmental concerns which Cragg terms 'the new nature'. The sculptor had his first solo exhibition in 1979, and in 1988 was awarded the Turner Prize.

Barry Flanagan (b. 1941)

Flanagan's early works assimilated materials such as sacking, rope, sand, etc., which opened up new possibilities for sculptors. In 1979, he began to cast in bronze, and made a series of works, often using animals, particularly the hare, to highlight human characteristics.

Richard Long (b. 1945)

Although Long works within an English tradition of landscape, his inclinations tend toward the minimalism and the *Arte Povera* movement of junk sculpture. Long's works

involve extended country walks which he photographs and maps, or he collects stones, pieces of wood, and clumps of earth which he rearranges on the floors and walls of a gallery in simple circles or lines. In 1989 he was awarded the Turner Prize, and in 1990, was made *Chevalier dans l'Ordre des Arts et des Lettres*, by the French Government. He is included in major collections worldwide.

Damien Hirst (b. 1965)

Damien Hirst studied at Goldsmith's College, London, and became one of several Goldsmith's graduates who have come to represent British art in the '90s. They are collectively known as 'yBa'—young British artists. Described as an Installation artist, sculptor, or conceptualist, his 1991 work, *The Physical Impossibility of Death in the Mind of Someone Living*, featured a one ton tiger shark floating in a tank of formaldehyde. Hirst lives and works in London.

Anish Kapoor (b. 1954)

Born in Bombay, Kapoor studied art at the Hornsey College of Art and the Chelsea School of Art. Kapoor has said that he has no formal concerns: '...I don't wish to make sculpture about forms, it doesn't really interest me. I wish to make sculpture about belief, about passion, about experience, that is outside of material concerns.' In his work, Kapoor aspires to combine the spiritual with the forces of nature. His pieces are made of stone or fibreglass, coated with powdered pigment. Anish Kapoor was awarded the Turner Prize in 1991.

Rachel Whiteread (b. 1963)

Whiteread was born in London. She studied painting at the Brighton Polytechnic, and later, in 1985–6, she joined the Slade School of Fine Art to study sculpture. Whiteread creates her work from plaster, resin, and rubber. Her earlier works were overtly connected with the London environment. In 1993, she created *House*, a concrete cast of the interior of a house in the East End of London. Monumental as Whiteread's work appears, it is more to do with memory and absence than presence. In 1994, she was awarded the Turner Prize.

Shahid Sajjad (b. 1933)

Sculpture in Pakistan is a neglected art form, yet artists continue to work in three-dimensional form. Pakistan's most distinguished and talented sculptor is Shahid Sajjad, who has represented Pakistan in several major international sculpture events.

Motivated by his inner conviction, Shahid has accumulated a wealth of knowledge and experience without the help of patrons or outside assistance. He spent two years with the Chakma Hill Tribes in Rangamati, Bangladesh, where, surrounded by wooded jungle, he explored and analysed the art of the 'carver'. His formal study includes one year at the Sir John Cass School, London, where he forged a lasting friendship with the English sculptor Jim Mathison. In Japan he mastered the art of bronze casting with a Japanese master of the art. Without fluency in the language, Shahid learnt in the traditional way of the east, by example and observing his teacher at work, as well as making copious diagrams on paper. A bronze mural depicting the history of the infantry, now displayed in Nowshera Fort, is lasting witness to the artist's genius in the field of metal sculpture.



Figure 53: Wood carving from the series *My Primitive*, by Shahid Sajjad.

After diverse experiments with the medium of bronze, the sculptor's passion for wood and for carving led to a series of powerful impact. Large, primitive forms portraying man as the endangered species were 'finished off' with a patina that encompassed fire, pigment, and oil. The burnished artworks appeared to generate an elemental energy. Shahid Sajjad's work is included in many private collections both in Pakistan and abroad.

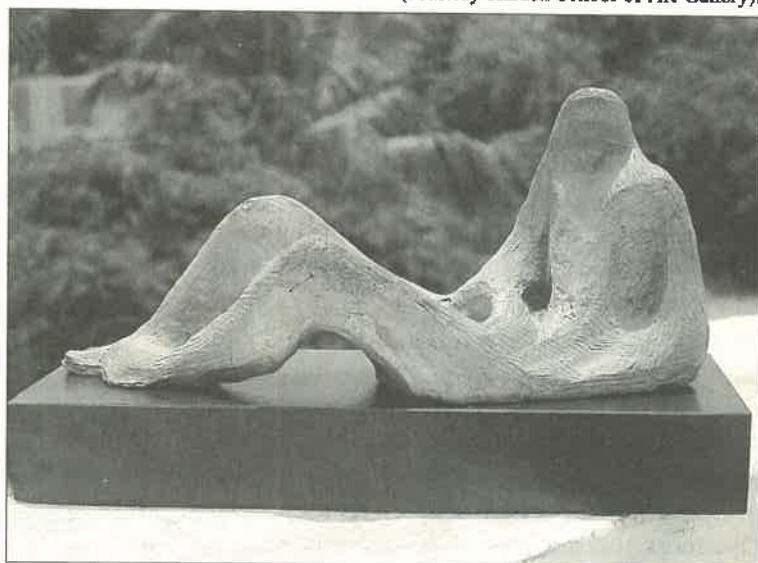
Rabia Zuberi (b. 1943)

Rabia Zuberi graduated from the Lucknow College of Art, majoring in sculpture in 1963. She settled in Karachi in 1964, and with her sister Hajra Mansur, and Dacca Art College

trained Mansur Rahi, established Karachi's first art institute, Karachi School of Art, in 1965.

Rabia Zuberi has won numerous national awards for her work in sculpture, culminating in the highest award for sculpture at the 7th National Exhibition of Visual Arts, held in Islamabad in 1996. It was an apt acknowledgement of a life spent in art. Rabia's most impressive work often addresses groups of people. Small in size, they are monumental in effect.

Figure 54:
Reclining Figure, metal sculpture by Rabia Zuberi
(courtesy Karachi School of Art Gallery).



7 PRINTMAKING

True printmaking did not come into existence in western art until the middle of the twelfth century AD, years after the west learnt the secret of paper making. The first prints were in the form of woodcuts and wood-engravings. As tools and techniques improved and new materials were discovered, relief printing became more refined. In present times, after centuries of modifications and improvements, just about anything that will leave an impression on a material is used in printing.

At one time, printmaking was considered an extension of drawing, a technique by which to reproduce sketches. It has also been described as a complicated process by which impressions may be transferred to another surface by means of pressure. This description is misleading, referring to only one aspect of printmaking, the mechanics of reproduction. One must also understand that there is no link between printmaking and the mechanical means of reproducing commercial images such as posters, advertisements, and other similar mass produced images. The number of prints that can be taken from a plate are far less than those mechanically reproduced. Creative printmaking requires imagination and the co-ordination of the eye, mind, and hand, combined with a thorough knowledge and practice of the technical methods of the medium. Like most art forms, the required effect is rarely achieved in one process. A plate may go through many stages before the artist is satisfied with the given image. In the process several proofs may be taken, either a few or perhaps dozens depending on the artist. When the plate is ready, the printing is done by the artist or under the artist's supervision.

The American printmaker and Fulbright scholar, Walter Crump conducted several printmaking workshops in Karachi in 1993. He wrote out details of various printmaking techniques for his students, from which the following passage is taken:

A mechanical reproduction cannot imitate the surface of a print, a painting or a drawing. One of the pleasures of the print is its surface. The slight embossing of a wood-cut, the heavy embossing of an etching or collagraph, the way inks relate to and sit on the paper of a lithograph or silkscreen, all of these nuances can subtly add to the way one perceives and enjoys a print. It is important to first look at the image and then look beyond it.

Printmaking today is a complex discipline often encompassing several printmaking mediums in one print. Artists may incorporate photography, sculpture, painting, and drawing into their work. Innovative single prints may be produced as well as editions, which are a series of identical prints made from one plate, each print numbered against the total number of prints made, such as 1/50, 2/50, and so on until the final number, 50/50, is reached.

Apart from photography (explained in the next chapter), which exploits the medium of light to transfer images, all other methods involve the transfer of ink or paint on to another surface. Prints are made from a variety of processes which fall into three main groups: relief methods, intaglio methods, surface or planographic methods.

Relief Methods

In this process parts of the woodblock or metal plate which are to print black are left in relief and the rest is cut away. The principal methods of relief are woodcut, wood engraving and lino cut. To these may be added techniques such as metal cut and relief etching. Here, working from a metal plate, the design is drawn on the plate in an acid resisting varnish. The plate is then immersed in acid, which cuts away the unprotected parts so that the design stands out in relief and the prints can be taken in the same way as from a woodcut block. This method dates from the eighteenth century and was used by William Blake, who called it 'woodcut on copper'. The process was revived in the twentieth century and combined with intaglio printing by S. W. Hayter and Joan Miro.

Intaglio Methods

Intaglio is the most complex of the printing processes. It is a term which covers multiple techniques, usually a combination of those used in etching and collagraphy. The principal is the reverse of that which operates in the relief methods. Intaglio is considered an

effective preliminary to etching for it allows for sharp, fine, and precise lines and details.

Dry point is one of the simplest of the Intaglio processes and requires the least amount of equipment. In this method the surface of the plate, which is normally a metal such as copper, brass or zinc, is scratched with a sharp tool creating grooves. When the plate is inked and wiped, the indentations hold the ink which, when printed, produces a soft line. The lines made by the tool are the essence of this process, varying with practice from deep to light. The inked design is transferred to paper by means of a press. Each type of metal used for making a plate will have a distinctive character of its own.

As with dry point, during the process of engraving, incisions are made directly into the plate. The resulting lines, when printed, stand out prominently. Engraving requires great craftsmanship. It is the logical choice of method for printing items such as money, stamps, and important documents. Engravings have been done on copper, zinc, and brass but like dry point, the plate may be any material that can be cut away with a sharp instrument. The design or drawing for engraving plates can be prepared with marking pencil or wax crayon.

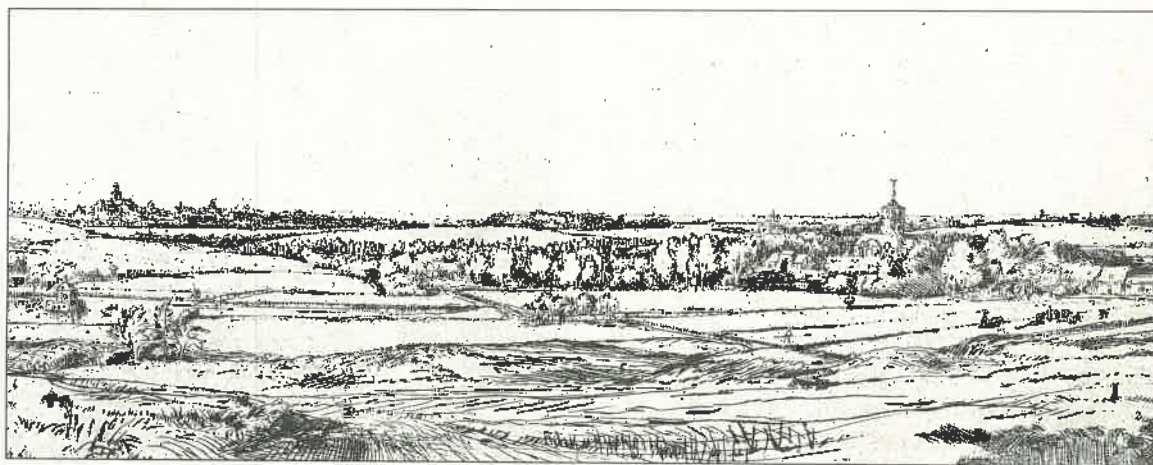


Figure 55: Example of an etching.



Figure 56: Etching by A. R. Chughtai.

Etching

In this technique, lines and textures are incised into a metal plate by first of all covering the plate with an acid-resistant ground. A design is then drawn through the ground with a pointed tool, leaving areas of the plate exposed. The plate is then placed in acid which 'bites' the image into the plate. To make a print, the plate is covered with ink and then wiped with a cloth or paper, leaving ink only in the incised areas. The image made by the ink is then transferred to paper through a press.

Aquatint

It is a method often used to produce finely granulated tonal areas rather than lines. The basic technique requires acid-resistant varnish to be sprinkled on a metal plate. The medium is then fused to the plate by heating it. When

the plate is immersed in the acid bath, the acid bites between the tiny particles of resin, producing an evenly granulated surface. Designs are made by drawing on the plate with an acid-resistant varnish.

There are numerous methods used today to make an etching, often in combination with other modes.

Colour Etching

Three of the more popular methods of colour etching are:

- The multiple plate method. Multiple plates, each containing a separate colour or colours, are run through the press one at a time on a single surface, creating one image.
- Using stencils and top roll. In this method, colour is applied to the surface of the plate with a brayer or roller. The number of colours used may be increased by using stencils to deposit colour in specific areas.



Figure 57: Etching by Jamal Shah.

- c) Viscosity. This method is an innovation of the late, great Stanley Hayter, often referred to as the Picasso of printmaking. By using hard, medium, and soft rollers in combination with runny inks and stiff inks, different colours can be deposited on various levels of the etching plate.

Collagraph

This is a recent expansion of etching techniques. Instead of incising lines into a plate, various textures are created from acrylic mediums, paints, leaves, sand, mesh, cloth, string, or anything that can be glued to a mount board or hardboard plate. When dry, the plate is inked with a brush using several colours. The composition is then wiped, leaving ink in the indented areas. Colour is usually applied to the surface areas with rollers or brushes before the print is passed through the press.

The Stencil Printing Process

Stencil printing is considered a newcomer to the field of graphic art but the technique goes back to the prehistoric cave paintings of France and Spain. Some 20,000 years ago, Cro-Magnon man used a method of blowing pulverized pigments, such as iron and manganese oxides, through hollowed bones or hollow reeds to outline drawings of animals. This early method resembles the present airbrush technique. The cave artist also used to blow coloured pigments over his hand onto the rock wall, corresponding to the present-day mask technique. In ancient times, Chinese artists wove mesh out of human hair and used the resulting screen to spray and decorate pottery and fabrics; while in recent times, a method of producing a stencil on film was perfected. The basic principle has not changed.

The Stencil Screen Process

In this method, there are two distinct techniques, one in which paint is forced through the clear opening of a stencil or around its outer margins and is referred to as stenciling, the other in which the paint is forced through a mesh or screen surface and is called silk screen printing or serigraphy.

In the silk screen or serigraphy process, the stencil has an opening supported by a tightly stretched mesh screen. There are many variations on this basic method depending on its purpose. Various techniques can be used such as paper block-out, crayon block-out, lacquer block-out, tusche block-out, glue block-out, and the latest technique, photographic stencil.

The Planographic Printing Process or Lithography

Planography, commonly known as lithography, is a process of printing from a flat, smooth surface. Areas to be printed are distinguished and identified by the thickness of the media applied, usually fatty acids. Lithographic pencil or crayon may be used, or wax, resin, or tallow plus charcoal or carbon pigment.

Lithography was first introduced by Aloys Senefelder in 1796. He noticed that certain stones were compatible with both oil and water and experimented by drawing on stone with a greasy substance. He found that when the stone was dampened, the water dropped away from the greasy area. Then attempting to ink the entire stone with an oil-based pigment, he discovered that the pigment stayed only on the greasy area, the damp part would not absorb the oil pigment. When he placed a sheet of paper against the stone, the pigment was transferred to the paper. Here we have the basic principle of lithography.

Paper Lithography

Prints can now be made from lithographic coated paper. The drawing is made with litho-crayon pencil and/or tusche. Once the drawing is complete, the plate is desensitized with lithographic plate solution, inked and printed. The laborious task of graining, etching, and washing the stone is dispensed with. The four basic steps to lithosketch are the drawing, the desensitizing, the inking, and the printing. The materials required are a piece of glass or masonite, a soft rubber brayer or roller, a sheet of sketchmaster plate, stiff cardboard, a bottle of rubber cement, lithographic crayons, pencils, tusche, lithographic solution, cotton swabs, printers' ink, and a wringer or simple roller-type press.

Stone Lithography

Although now specially coated paper and metal plates with grained surfaces are being used for lithographic printing, the word lithography is made from the Greek words *lithos* meaning stone, and *graphein*, to write. In printmaking, the term 'lithography' is referred to as a stone printing process. With a fine grained limestone one can experience the richness of tonal values, the interplay of textures, and the definition of form. The principle of making a lithograph from stone is basically the same as for paper lithography. The steps involved are graining the stone, drawing the image, etching the stone, and finally preparing the paper.

Plaster Lithography

In this method, plaster of paris is poured into a cast. When dry it is coated with shellac and covered with another layer of plaster. The image is then drawn in a method similar to stone lithography.

Colour Lithography

Grained metal plates made of aluminium or zinc are light, flexible, and can be used in rotary printing presses. Commercially, the plates may be used in conjunction with photographically produced images. Photo-lithography is a versatile, speedy process which produces results not obtainable by other methods.

Rubbings

Shortly after the invention of paper, stone rubbings as a reproductive technique became popular. This was a Chinese method of making impressions of the designs and inscriptions carved into the flat stone surfaces of the large burial storage boxes and on mass produced moulded bricks used in the construction of tombs. The process was simple. A dampened sheet of rice paper was pressed against relief sculpture or design and forced into the lower recesses. Paper still firmly pressed against the design, ink was applied with a flat, firm pad. By rubbing on top of the paper, the reversal of the image, which occurs in many printing techniques, is avoided.

Monoprint

A monoprint is an impression taken from a painting done on a piece of glass, metal, or any hard, non-absorbant, smooth surface. Although only one impression can usually be made from the painting, since an image from one surface is transferred to another, it is classified as a print. When working on glass an artist simply places paper on top of the completed image and rubs it from the back. By using a zinc or acrylic plate the image can be transferred to paper by running it through a press.

8 PHOTOGRAPHY AND CAMERA

Photography

The photographic printing process or photography, the art of producing an image on chemically sensitized paper with the aid of light, is a new addition to graphic printing processes. Its possibilities were first realized in 1777, when a Swedish chemist, Karl Scheele, discovered the reaction of light on silver chloride. Then, in 1839, Louis Jacques Mande Daguerre, a French painter aspiring to simplify the task of recording the exact likeness of a subject, illustrated his daguerreotype process of making permanent pictures. His method employed a copper plate coated with light-sensitive silver chloride which required a half-hour exposure. A sort of 'development' was formulated by using mercury vapour to whiten the exposed silver and common salt to fix it. 'From today painting is dead!' declared the French painter Paul Delaroche, voicing the expectation that photography was the art form of the future. Other artists claimed that photography was a science, not an art—a purely mechanical process that could never rival in feeling or in expression the sensitive hand and eye of the painter.

For many years photography was denied a place in fine arts since it was highly literal, not employing colour or pigment. It was not considered adaptable to subjective impressions, and therefore not seriously considered as a genuine printing process.

Photography began to gain a new status as an independent medium in the early twentieth century. The famous American photographer Alfred Stieglitz (1864–1964), through his work, his writings, his gallery in New York,

and his magazine, *Camera Work*, advocated photography with aesthetic values beyond its descriptive function. In Europe, photographers and avant-garde artists, such as the Italian Futurists, were forging closer links. They looked to photography to describe the dynamism of the machine age. The Dadaists used photography in conjunction with other media to depict sharp social and political satire. The Surrealists exploited photography to cast ordinary objects in a strange light. Man Ray (1890–1976) initiated an innovative technique of 'surreal' photography which continues today. 'New Objectivity' photographers, led by the Hungarian-born



Figure 58: *Old Man in a Snowstorm*, Murree; photograph by Noor Jehan Mecklai.

artist Lazlo Moholy-Nagy (1895–1946), were closely linked to the German Bauhaus movement. They transformed ordinary objects by showing them from unusual angles, for instance a section of a planet seen in close-up, or a street scene viewed from above.

In the 'Pop' era, artists such as Andy Warhol and Robert Rauschenberg used photographic images and concepts in their work, and realigned 'High Art' in the direction of popular culture. David Hockney is another artist who uses photography freely. Today, photography is accepted as a means of creative expression. A good photograph is as much an aesthetic print as a great lithograph, etching, wood graving, or serigraph, with a rightful place in museums and art galleries.

Using a camera successfully requires knowledge and practice. When the camera has recorded the image, the film is developed and it becomes a negative. This can be considered as a stencil that may be used to produce many prints. In a black and white film, the dark areas of a negative are silver deposits. These prevent light from exposing corresponding areas on sensitized paper, resulting in white areas in each of the prints. The light or transparent areas of the negative allow the light to pass through, exposing the sensitized paper, thus resulting in the imagery of the photograph.

In the hands of a creative person, photography becomes a very important source of communication. A photograph, like any other art form, symbolizes what a photographer-artist finds interesting, exciting, and meaningful. Picture making, like painting, printmaking, or sculpture, is merely a way to record subject matter. Artistically it is the result of an individual's excited response to something that moves him/her deeply, though enthusiasm alone will not guarantee a great print.

The film in photographic printing processes is comparable to the stencil, the silk-screening

medium discussed in the earlier chapter. It was at one time made of a sheet of glass, coated by hand with a light solution containing silver halide grains, some more sensitive than others. The plate was then exposed and processed, resulting in a good negative. The modern film of today is precision manufactured, a thin, flexible, transparent sheet of cellulose nitrate or acetate, but it functions in the same way as glass did.

Since photography is produced by light, it is important to know about lighting and its control. In terms of the desired effects, it is vital that light be considered of primary importance. Artificial light can be controlled by means of reflectors, screens, and nettings. Practice and experimentation will help to bring about the results the artist seeks.

Before developing the film, it must be properly exposed to light. For exposure there are three salient features: intensity of light; length of time the film is exposed; the sensitivity of the film. Exposed films contain the latent image. To produce the film, it must be developed in a dark-room. The paper used in photographic prints is specially prepared to withstand water.

Photograms

While the photographic process requires a camera, other photographic printing methods are accomplished without a camera, the most common being the printing of photograms, which requires imagination, a dark room, photographic paper, light bulb of 40 or 60 watts, flat object, and a few chemicals. Take any objects available in the house, group them in an interesting design on sensitive paper, and expose the arrangement to light. You will be surprised at the results obtained after practice.

Blue prints are made in the same way as photograms.

Cliche Verre

Another method, known to be popular with French Impressionists, is to paint the entire surface of the glass and then scratch away an area of design. The result, if executed by a craftsman with sharp instrument, can resemble a dry point print. The same effect may be obtained by scratching fine lines into the emulsion side of over-exposed negatives.

Since 1839, photography has assumed a vast range of forms and uses in science, medicine, geographic exploration, exploring space, anthropology, journalism, and advertising. Throughout, it has kept its close association with art. As mentioned earlier, photography was first used by artists accustomed to painting from life. They found photographs an invaluable source of reference to details. High speed photographs taken by Muybridge in the 1880s showed artists the frozen image of a galloping horse, or a leaping man in motion, for the first time. Degas, the French Impressionist, referred to snapshots when painting scenes of horse racing, and Picasso not only used photographs for reference, but also painted over snapshots taken of his friends for fun. With the gradual improvements in photographic technology that developed over the decades, photographers have learnt to handle the unique immediacy of the art, and its ability to capture a real sense of life. Celebrated Victorian portraitists such as Julia Cameron were able to infuse their work with great vitality with the aid of photography. Innovations and scope widening have gone on ever since this medium was invented. Photography and art are now closely interlinked. Photography has been used to record minimalist, conceptual, and performance art, helping to change the concept of art as a unique, hand-made, physical art object. Photography is now an intrinsic part of the art scene and here to stay.

Camera

At least as early as the fourth century BC the ancient Greeks were familiar with the principle of the camera obscura, a darkened chamber in which an inverted image of the world outside is projected through a small opening onto a flat surface within. Even so, it was not until the first half of the nineteenth century that a process was developed by which an image could be made permanent. In 1826, a Frenchman, Joseph Nicéphore Niepce, produced the world's first photographic image. His partner was Louis Daguerre, who in 1839 marketed the daguerreotype (see preceding). In 1841, an Englishman, William Henry Fox Talbot, patented a negative-positive process. This method involved placing a paper negative against another, unexposed, sensitized paper, and then allowing the light to pass through the back of the negative. The sensitized paper when developed became a positive print.

Perhaps the greatest single innovation in the field of amateur photography was the invention of the box camera. The camera is merely a box, with an inexpensive lens and shutter at one end, and a film at the other. Everything was fixed, the shutter, lens aperture, and focus. The user only had to load the film, take the pictures, and then send the film to be processed. Since then there have been many developments and refinements, culminating in the cameras we use today. The 35mm camera has a simple, see-through viewfinder. More sophisticated versions have their own exposure meters which adjust the shutter speed and the lens aperture, to suit the measure of light falling on the subject. Constructed with a fast lens and fitted to take accessories like telephoto and telescopic lenses, the 35mm camera can be used under the most difficult photographic conditions and even in darkness. There are now cameras with ultra-high speed lenses, with built-in exposure meters, and Polaroid cameras have a built in process to develop photographs in the camera.

GLOSSARY

Acetic acid A mild acid used by printmakers for cleaning metal plates.

Agitation A process used in developing film and printing the negative. It involves a gentle rocking of tray containing the developer for a few seconds during the developing period. This 'agitation' is vital to the process of development.

Air painting A method of printing in which pigment is blown through a reed or tube over a mask stencil.

Aperture An opening, such as found in a camera, which admits light.

Aquatint A method of etching which uses a porous, resin ground to obtain tonal areas from a metal plate.

Asphaltum A composition of asphalt rock and bitumen used to cover acid when etching a plate.

Baren Instrument for burnishing the back of paper when printing from inked relief block.

Bath Acid-proof container for metal plate etching; also acid solution for etching purposes.

Bench hook A device to hold a relief block while cutting. It may also be referred to as a jig.

Bevel A process of rounding up edges of stone or metal plate. Rounded edges are referred to as bevelled edged.

Blanket A felt pad on metal plates being run through an etching press.

Bleeding Oil or grease seepage around a printed line or form.

Blueprint A photographic print, white on a blue ground.

Box camera A simple, light-tight box with a single lens aperture and shutter speed regulator at one end, and film at the other. The pinhole camera is much the same except that it has a fine, clean pinhole in place of the lens.

Brayer A rubber, gelatin, felt, or leather-covered roller used in inking metal plates and linoleum, or wood blocks.

Bunsen burner Small gas or air burner with intense heat.

Burin A pointed steel tool for engraving into metal plates and the end grains of wood blocks.

Burn Occurs when too much adhering fluid is used.

Burnisher Highly polished, oval-shaped tool to polish (burnish) the incised lines or surfaces on a metal plate.

Burr A thin, rough edge made by a dry point needle as it draws across a metal plate.

Carborundum Abrasive in solid or powder form for graining.

Chiaroscuro Gradation of colour from shade to light.

Cliche verre Process of printing a negative that has been made by coating the surface of a glass slab, plastic, or plexiglass with a pigment and scratching out the desired image on the glass. A slab impression on black background is obtained.

Collagraphy Process of making relief collagraphic print from collage.

Composite Print made up from a number of prints of different stencils, plates, blocks; specially multicolour.

Contact print Print made with the negative in contact with the sensitive photographic paper or plate.

Daguerreotype The earliest photographic process (1839). It entailed the use of silver coated metallic plates.

Desensitize To render a lithographic stone or paper plate insensitive to printers' ink by using an agent which has antipathy to grease.

Dry point Method of intaglio printing (q.v.), in which a metal or plastic plate is scratched by a steel point, prior to taking out a print.

Dry point needle Etching needle.

Dusting Process of applying resin dust to the surface of a plate being prepared for aquatinting.

Dutch mordant Special acid solution used in fine etching.

Echoppe Oblique-faced etching needle for engraving.

Emulsion Suspension of sensitive salt in viscous medium used for film or plates.

End grain The flat surface of block wood which runs perpendicular to the grain.

Engraver's pad A leather covered, sand filled pad on which the engraver supports his plate when engraving.

Engraving Process of cutting a design in metal, wood, or plastic by means of a sharp instrument, burin, or graver, for making an intaglio print. Also, the print from an engraved plate.

Enlarger Instrument to enlarge the image on a negative by projecting through a lens onto a photographic printing surface.

Etching Process of biting into metal plate with acid to form a design for printing on paper.

Etching needle Steel-pointed instrument for cutting through a ground applied to an etching plate.

Exposure meter Instrument measuring light intensity that relates to shutter and film speed.

Extender White, paste-like substance added to textile and silk screen paints to increase volume and to add body.

Feathering Removing corrosive material from an area being etched by acid, using feather, pipe-cleaner, or small brush.

Flood lamp Incandescent lamp to produce intensity of light for photographic purposes. Also called photo flood.

Focus The act of giving proper sharpness to the subject to be photographed.

Graining Preparing a smooth drawing surface on a lithographic stone by grinding with an abrasive.

Ground Acid-resistant coating of wax, resin, or asphaltum which is applied to a metal plate. The image is scratched through the ground, permitting the acid to etch.

Hard ground Thin, acid-resistant layer of asphaltum, shellac (q.v.), or varnish put on the plate in preparing an etching.

Hydrogen peroxide Oxidizing/bleaching agent used to obtain deeper blue in making blue prints. Potassium alum may also be used.

Hypo sodium Hyposulphite, a fixing agent in photographic printing.

Impression A print from an ink plate or block, when subjected to pressure; also referred to as an 'imprint'.

India ink Black permanent pigment made from lampblack or ivory black, used for drawing and painting.

Intaglio An incised or engraved impression in durable material to yield a print when inked and subjected to pressure; also, a print obtained from such a plate.

Iron perchloride Used on previously bitten metal plates.

Latent image Invisible image produced by the effect of light on matter; can be made visible by photographic development.

Lens Transparent, optical glass, gathers rays from scene and transmits them to light-sensitive plate or film on which the image is recorded.

Linoleum A material consisting of a canvas backing thickly coated with a preparation of linseed oil and powdered cork etc. used especially as a floor covering.

Linoleum block Piece of linoleum on which an impression has been cut to be printed in relief; also a print.

Litho plate solution Specially prepared solution used to desensitize litho sketchmaster paper (q.v.) obtained from the block.

Lithograph Planographic print obtained by process of lithography.

Lithographic crayon A grease crayon or pencil for drawing on lithographic stone or sketchmaster paper (q.v.) in preparing a lithographic print.

Lithographic print See lithograph.

Lithographic press Press works on scraper principle, used exclusively for lithographic printing.

Lithographic roller Roller for lithographic printing. Has a solid wooden core wrapped in flannel, covered with leather.

Lithographic stone Hard, porous limestone which has an affinity for both oil and water. Also known as Bavarian stone.

Lithography A planographic printing process which depends on the antipathy of grease or oil and water. Impressions are drawn with grease crayon on stone or chemically prepared paper, desensitized, inked, and then printed.

Litho-sketch print Print from sketchmaster paper (q.v.).

Mask stencil A stencil (q.v.) in which ink or paint is applied to the background around the outer margins of an image or mask.

Mezzotint An intaglio (q.v.) process in which the surface of a plate is roughened with a tool called a rocker to create a dark, textured surface, certain areas of which are lightened by burnishing and scraping; also, a print obtained from such a plate.

Monoprint See monotype.

Monotype A process of making a single print from a plate upon which an impression has been created with finger paint, oils, or inks.

Mordant Any corroding agent used in etching plates.

Negative A film or plate used in printing positive pictures.

Nitric acid A corrosive liquid, recommended for etching metal plates.

Offset Transfer of an impression from one surface to another.

Oilstone A whetstone used with oil for sharpening burins, scrapers, and other such tools.

Photoelectric cell An instrument whose electric properties are modified by the action of light, used to measure the intensity of light.

Photo flood lamp See flood lamp.

Photogram Process of printing the silhouette image of objects by placing them on photographic paper, exposing to light for a few seconds and developing.

Photographic paper Specially prepared paper coated with a mixture of barium sulphate and gelatin to eliminate surface pores and having a smooth light sensitive emulsion containing silver bromide.

Photography A process of printing images or designs on sensitized paper by the action of light.

Photo-lithography An offset (q.v.) process of lithography (q.v.) which involves photography as a means of producing a design on the plate.

Pinhole camera See box camera.

Planography The art of printing from a flat surface which is neither raised nor incised.

Plasticine A non-hardening clay composed of tallow, pumice, powdered sulphur, earth clay, and various plasticizers such as petroleum derivatives or linseed oil.

Plate A block stone, stencil, or other surface on which an image has been carved, drawn or etched for printing.

Plexiglass A fairly hard, transparent medium which resembles glass. It comes in various colours as well as opaque. It can be cut with a saw, or heated and formed into different shapes.

Polaroid A precision camera which takes, develops, and prints its own photographs in seconds.

Print A picture produced on a paper from a negative.

Proof A trial print obtained for correction.

Pull The act of peeling a print from block, plate, or stone.

Register Correspondence of separate blocks, plates or screens in multicolour printing in order to assure proper alignment.

Relief printing A process of printing from a raised or projected surface; also the print obtained.

Resin An organic wax substance which melts when heated and is primarily used as ground for aquatint (q.v.).

Resin bag A silk or nylon bag filled with resin dust used to sprinkle resin as ground on metal plates.

Rocker An instrument with sharp points used to roughen a metal plate to alter a mezzotint (q.v.).

Roulette Wheeled, rotating disc-like tool used to produce dots on engraving plates or to roughen a plate in altering a mezzotint (q.v.).

Rubbing Reproductive technique of making impressions of an incised or raised design by pressing damp rice paper on blocks and rubbing with a pencil, chalk, or pad coated with ink.

Safe lights Red lights used in photographic dark rooms.

Scraper Tool used to remove burrs from metal plates and to incise heavy lines.

Scratchboard Smooth light cardboard designed to be covered with crayon or ink, then scratched through for impressions.

Serigraphy A process of stencil printing in which pigment is forced through a silk screen. A print obtained by such a process is called a serigraph.

Shellac An adhesive, obtained from an insect secretion, melted into thin flakes and used for making varnish.

Silk screen Same as serigraphy.

Silver chloride A compound sensitive to light.

Sketchmaster paper A specially prepared sensitized paper which, when drawn upon with

greased crayon and desensitized produces a lithographic print.

Solvent A solution for cleaning paint from blocks, metal plates, stones, or silk screens.

Squeegee A wooden-handled device of rubber used to pull paint across the screen when printing a serigraph.

Stencil A piece of parchment, thin metal sheet, paper, or a like material, perforated so that when placed on a surface and paint or ink applied, a desired image is made.

Stencil paper A parchment or wax-coated stiff paper for making stencils, usually transparent / translucent.

Tarlatan Stiff gauze for wiping ink from metal plates in intaglio (q.v.) printing process.

Tusche A liquid substance used in lithography, etching, and serigraphy to prepare areas to be printed.

Undercutting The act of cutting the underside of linoleum, wood block, or metal plate so as to leave it without support.

Vignette A photograph having a background that is shaded off gradually into the surrounding ground or unprinted paper.

Woodcut A flat slab or block of wood from which an image has been cut in relief to be printed; also, a print from such a block.

Wood A process of printing from a block of endgrain wood which has been engraved with a burin or raver; also, a print obtained from such process.

Xylograph An impression taken from a wood block.

APPLIED ARTS

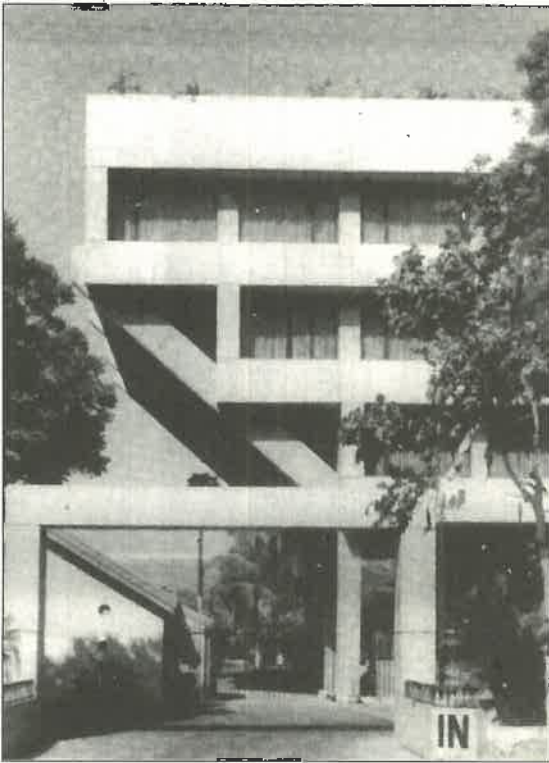


Figure 59:
Hotel Midway House, Karachi. Habib Fida Ali (c. 1982).

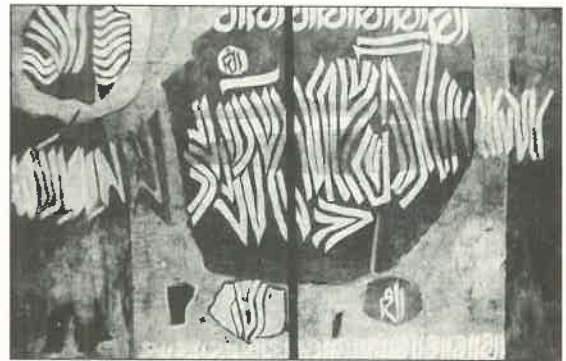
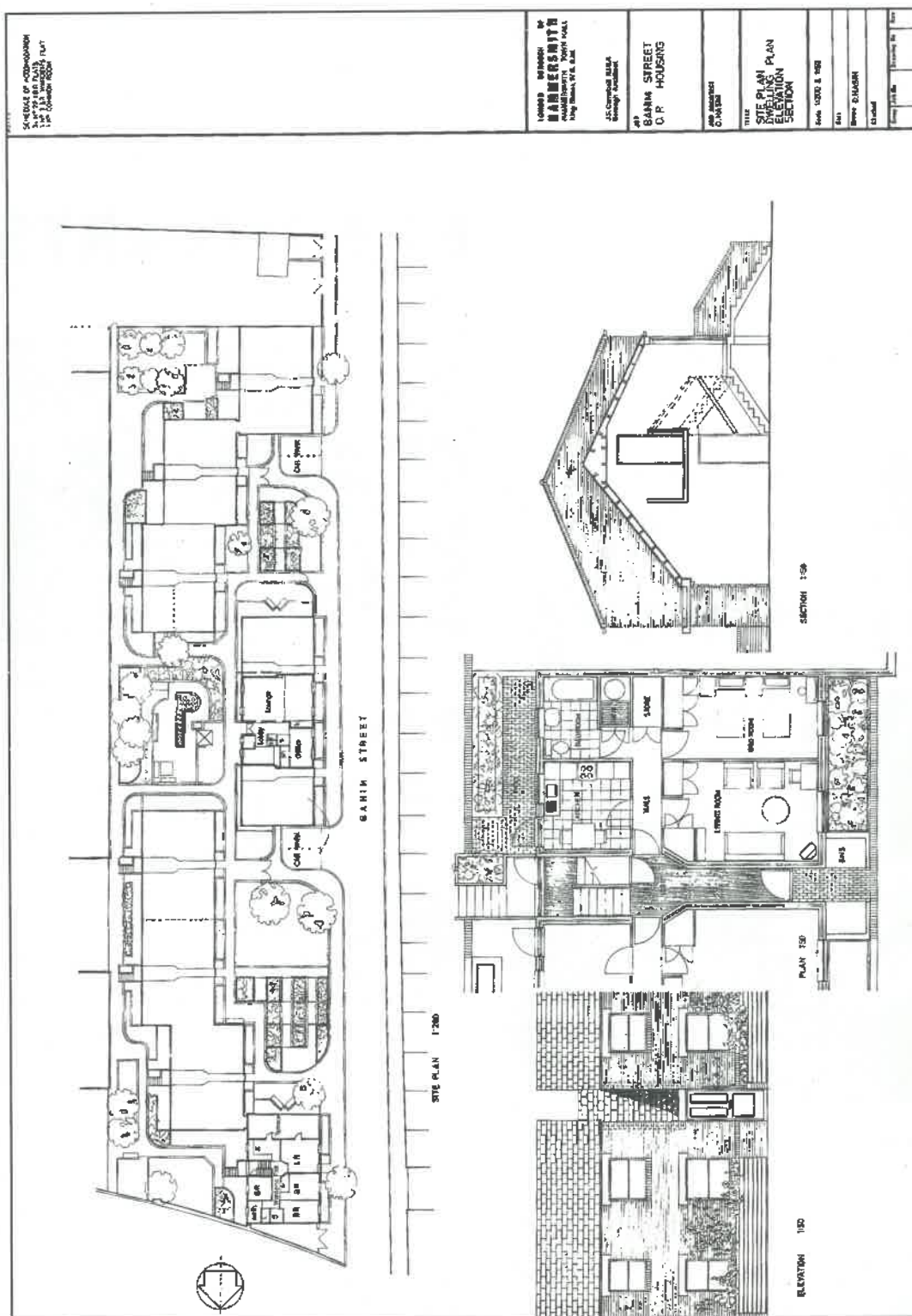


Figure 60: Composition with calligraphy, gold and metallic paints on wood.



Figure 61: Glass Piece by Rukhsana and Saif-ul-Haque.



9 ARCHITECTURE

Architecture is the most practical of all the arts. It deals chiefly with the organization of space. The boundaries of architecture are defined by practicability and structural method, but an aesthetic element is almost always included. Architecture has been influenced throughout history by the environment and the materials conveniently at hand. In prehistoric times the basic need of mankind was shelter, i.e. protection from the elements and wild animals. Men took refuge among rocks and in caves, living close to the entrance. Their magic rituals, involving cave paintings, took place in less accessible areas deep inside the caves, where their shamans painted the rock surfaces with illustrations of animals in their efforts to capture the spirits of the wild beasts and thus dominate the animal kingdom.

As the climate gradually changed and the glaciers melted, trees and plants took root in areas previously covered with ice, and men left their caves and moved into the plains. They built huts of reeds, moss, and branches of trees. Then followed two periods that preceded the era of civilization. First the Mesolithic or Middle Stone Age in which man hunted with a bow and arrow and baited fish in large numbers after studying their migratory habits. This was followed by the Neolithic period in which man discovered the connection between seed and plant, and domesticated animals for farming.

From the security of farming and surplus food supplies, the first villages developed. They were clusters of dwellings close to fields and pastures. Architecture varied according to the local conditions.

The Beginning of Civilization

The first great civilizations grew around rivers. In west central China, civilizations arose along the Yellow River, in Mesopotamia the Sumerian along the Tigris-Euphrates, in Egypt on the banks of the Nile, and the Indus Valley civilization grew up along the Indus, circa 2500 BC.

During its most highly developed period (c. 2100-1750 BC) the Indus Valley civilization spread from present day Pakistan and Afghanistan to as far south as the Gulf of Cambay and eastwards to the Ganges valley. The most fully excavated site, Mohenjodaro, was a city about one mile across, laid out on a grid plan. There is evidence of sophisticated town planning, with wide streets, granaries, and water supply and drainage systems. Houses made of fire-baked bricks and mud were built with internal courtyards. Today, visitors to the ancient remains of the cities of Sumer and the Indus Valley marvel at the genius of those early architects and town planners as demonstrated by their designs and layouts. Mud, fire-baked bricks, and large stones were incorporated as the principal building materials.

By the fourth millennium BC, the Sumerians were incorporating the dome, the arch, and the vault in their architectural techniques, and architects had begun to address decorative aspects in their designs. Thus, the great ziggurat temple of the Urak period at Warka was decorated with geometric patterns made of red, black, and buff coloured cones.

Egypt

In early Egypt, the first dwellings and shrines were made of organic materials, often bonded together with mud. Out of the first pre-dynastic graves developed the mastaba tomb, a rectangular, bench-like form made of mud which replaced the earlier pile of sand. This was the forerunner of the pyramids. The Egyptians believed that the home was a temporary lodging while the tomb was an eternal dwelling. That is why their secular buildings were made of mud bricks but all their temples were constructed of stone. The architect Imhotep built the earliest large-scale stone pyramid in Saqqara, for King Zoser, founder of the 3rd Dynasty (c. 2650–2600 BC). A huge funeral complex almost 200 ft high, it was designed with a large processional gallery and several halls. In time, the stepped pyramid gave way in design to the regular pyramid, such as the pyramids of Giza, built for kings of the 4th Dynasty (c. 2600–2480 BC).

With the collapse of the Old Kingdom (c. 2000 BC), the erection of great buildings ceased. During the Middle Kingdom (c. 1991–1650 BC), building continued with a simplification of earlier styles. In the New Kingdom (1570–1085 BC), once again great buildings were erected. Outstanding examples are the magnificent mortuary temple of Queen Hatshepsut, built at Deir el Bahari by Senmut (c. 1480 BC), the temple of Amon at Karnak (c. 1570–1085 BC), and the temple with many columns built at Luxor and dedicated to Amon-Mut-Khonsu (c. 1570–1200 BC). With the death of Alexander the Great, the dynasty of the Ptolemies witnessed the final architectural splendour.

Greece

From the beginning of history, throughout the world architecture has varied with the advent

of each new empire. The classical architecture of Greece was born of the need to create temples fit for a pantheon of Greek gods. A deep respect for tradition caused them to incorporate the constructional elements of wooden structures in their stone ones. The influences of other Mediterranean civilizations were also assimilated into Greek designs, such as the columnar form from Egypt.

A unique Greek style evolved in the late seventh century BC, the Doric temple. The emphasis was on bold simplicity and a harmonious design with ornamentation to highlight the basic structure. The three classical orders of Greek architecture, as identified by the columns with moulded crowning features, were: Corinthian, the most slender, decorated with acanthus leaf motifs; Doric, the least ornate; and Ionic, distinguished by large scrolls at the corners. The Romans made great use of Corinthian and Ionic style columns.

The placement or location of the buildings was of extreme importance and carefully considered in the planning. Unlike the Egyptian pyramids and temples, Greek temples faced outwards to where religious rites were performed on altars. These were always built in front of the temple. Greek architects strove to express their piety and dedication to the gods in sublime architecture. Their gifts to civilization include such magnificent structures as the Acropolis and the Parthenon with its perfect proportions and use of sculpture. Long columns, some sculptured, others engraved with designs, are important architectural features of Greek temples.

In the fourth century BC the Hellenistic or last classical period of Greek architecture began. For the first time in history women are mentioned as professional artists. This was a time when architecture reached a scale that exceeded the boundaries of the classical city or state. Architects looked to the rich cities of Asia Minor, where huge theatres, meeting

places for city councils, residential blocks, and numerous other structures made the urbanized citadel of the Attalid kings at Pergamon, Turkey, a wonder of the ancient world.

The Romans attempted to destroy all traces of Etruscan architecture, so very few buildings survived above ground level. The ruins show that the building materials used by the Etruscans were clay, wood, and rough, unhewn building stones, with foundations of stone used for temples, fortifications, and for tombs. Temples were simple, rectangular huts built of timber and mud-bricks with decorations of moulded and painted terracotta.

The Romans

Following the Greek colonial period, the Roman republican period witnessed architecture and city planning that expressed the aesthetic identity of the Romans. The development used in conjunction with bricks made possible the construction of the great Roman domes and vaults. The earliest concrete dome is that of the Stabian Baths, Pompeii, 200 BC; the earliest large scale concrete vault is that of the Tabularium in Rome, 78 BC. Symmetrical planning and rich decoration marked domestic architecture, which included such features as wooden columns, door-posts and lintels, large rooms, and spacious courtyards. Unlike the Greek, Roman architecture was imposing in a utilitarian, practical manner.

Roman temples blended harmoniously with those of the earlier Greek and Etruscans. The ruins of Pompeii reveal the genius of Roman city planning, with well preserved examples of private houses. With the growth of urban population during the epoch of Imperial Rome, the Republican simplicity gave way to the opulence of the Caesars, but only the remnants of a few buildings survive. Enormous aqueducts, carrying substantial

amounts of water over long distances, were a notable feature of Roman architecture, and the construction of archways, vaulting systems, and baths are further progressive elements of design. Spacious suburban villas were built, and the ordinary citizens of the great cities of the Empire also enjoyed a share in the imperial splendour through the great public buildings, temples, market places, assembly halls, and amphitheatres.

The decline of the Roman Empire was finally expressed by changes in architecture. The walls surrounding the far reaches of the vast empire, thought to be impregnable, were breached. Late in the third century AD the city of Rome itself was enclosed by high walls and turned into a fortress.

The Age of Christianity

Byzantine Architecture

For three hundred years after the death of Christ, the Christians in the Roman Empire were persecuted for following an 'illegal' religion. They held their meetings in secret and developed a language of signs and symbols to communicate amongst themselves. Their dead were buried according to Christian rituals but underground, in the catacombs built beneath the Appian Way outside Rome. These were a network of linked passage-ways with shelf tombs. Paintings on the walls and ceilings of the catacombs are amongst the earliest examples of Christian art. Given a choice, the Christians preferred open air burial grounds, and after the sixth century AD the catacombs were rarely used.

During the reign of the Emperor Constantine, Christianity was legalized. Thousands of churches were built to spread the Christian faith. After AD 330, Byzantine architecture evolved as the peak of Early Christian architecture. The first church built

in Rome was the old St. Peter's, built in AD 333, but only the layout, reconstructed in the eighteenth century, remains. Great mosaic works symbolize this period of history. Little is known of the domestic architecture of the period but excavations of the Imperial Palace of Constantinople on the Bosphorus reveal it as being among the greatest buildings of the period.

Gothic

In the latter half of the period between the tenth and twelfth century AD, a rich series of variations on the domed central theme began to appear. The Gothic style emerged in the twelfth century AD and survived in Northern Europe until the sixteenth. The term 'Gothic' was applied to architecture for the first time and this was to dominate the art of the period. Italian writers Filarete and Manette in the fifteenth century and Vasari in the sixteenth century used the term **GOTHIC**, to describe western European art and architecture as what they considered a barbaric prelude to the Renaissance. The first movement to re-evaluate the Gothic style came in the eighteenth century when critics gave the term a positive connotation. In Gothic architecture a transcendental quality is evoked by pointed arches and the emphasis on light through exquisite stained glass windows in places of worship. Its salient features are the rib vault and the flying buttress (half-arches or half-tunnel vaults under the roofs of aisles or gallery aisles). The Gothic style developed first in France and then in England, Germany, and Spain. As the Gothic style developed, many of the functional elements were given decorative form. The major Gothic works to survive can be found in the castles, palaces, cathedrals, and civic buildings of Europe and England.



Figure 63: Cupola of Santa Maria del Fiore (the Cathedral), Florence.

Renaissance

The Gothic period was followed by the early Renaissance, from about AD 1350 to 1550. This period saw the re-emergence of past cultural traditions. The dome of Florence Cathedral is a prime example of the Italian Renaissance, showing its decorative aspect. At this time the rules of mathematics and perspectival composition were first applied. The evidence of pure geometry can be seen in the design of churches and buildings of that era. This was the age of Michelangelo, Leonardo da Vinci, and Raphael. In the sixteenth century AD, the focus of art and architecture in Europe shifted from Florence to Rome, where papal influence gained ascendancy. Then followed the Baroque and Classicism periods. Baroque is characterized by exuberant decoration, expansive forms, a sense of mass, large scale sweeping vistas and

a preference for spatially complex compositions. For perfect examples study the work of Bernini and Borromini in seventeenth century Italy. The term Classicism is generally used for styles that consciously refer to Greek or Roman art and architecture. There was a return to naturalism, a harmonious balance in architectural design.

India

In India, architecture and art reflected spiritual beliefs. The greatest ruler of the Mauryan period (c. 272–232 BC) was the emperor Ashoka. In the eighth year of his reign he embraced Buddhism and, through his missionaries, spread the religion throughout Asia. Influenced by Persian traditions, Ashoka built magnificent monasteries and temples carved out of rock. The carving imitated the wooden constructions of the period. These rock structures are the oldest surviving architectural remains of their kind in the subcontinent. Ashoka discarded the tradition of wood carving and established stone as the medium of sculpture. Great pillars commemorating Buddha's travels, inscribed with the Dharma (divine law), were erected and 84,000 stupas, dome-like monuments containing a relic of a revered person, were built. Each stupa was decorated with carved borders depicting Buddhist lore and with the testament of the Dharma carved in stone. The flattened top carried a stone umbrella (*chattra*) surrounded by square, stone carved railings. The oldest surviving structural temple is found at Sanchi, near present day Patna, a stupa 60 feet in diameter and 25 feet high. In the second century BC, the stupa was doubled in size and surrounded by stone railings nine feet high. A three-tiered umbrella symbolized the three jewels of Buddhism, the Buddha, the Law, and the Community of Monks. The basic design, a simple platform with stone stairs

leading to it, with pillars on either side of the entrance, became the prototype for future temples. 'Chaitya' is a Sanskrit word for stupa. The prayer halls built of wood (of which little remain), or carved in rock around the Buddhist stupas, are generally referred to as *chaitya* halls. The *chaitya* was divided into a nave and aisle by rows of closely set columns, more sculpture than architecture.

Later, under Chandragupta, great architectural feats occurred when monolithic pillars or columns became integral architectural elements of palaces. After the sixth century, Hinduism gained in ascendancy. Temples, often erected near water, were built with pillars, walls and ornamented ceilings. Built along rocky hills, they were assigned to deities. The supreme achievement is situated at Elura, the Kailasanatha Temple, most famous of all Rashtrakuta dynasty monuments. Located 15 miles from Aurangabad, Elura has been an ancient site of pilgrimage for Buddhists, Jains, and Hindus. There are thirty-three temples carved into the volcanic rock, the most spectacular being Kailasanatha, an elaborate temple dedicated to Shiva. Conceived as a symbolic representation of the ice temple at the peak of the Himalayas where Shiva controls the balance of the world, the facade of the temple was originally covered with white marble to simulate the Himalayan landscape. Another great rock-cut shrine dedicated to Shiva is found on Elephanta Island, about six miles offshore from Bombay.

Visitors to New Delhi are sure to visit the Jantar Mantar, one of the observatories built in the eighteenth century by the Maharaja Jai Singh the Second of Jaipur, who built five such observatories in Delhi, Benares, Ujjain, Muttra, and his own capital, Jaipur. These observatories, with their giant-sized astronomical instruments, are the biggest ever made for observation with the naked eye. Strange shapes in white, grey, and terracotta, made of stone, marble, and brass, are

juxtaposed with wheels, circles, angles, and curves dominated by steps leading to a small pavilion, ninety feet high.

Islamic Architecture

During the seventh century AD, Islam spread with unprecedented speed from Arabia, through the Middle East to the Indus Valley, and westward across North Africa to the Atlantic ocean. In AD 642, the Byzantine army abandoned Alexandria, leaving the city to the conquering Muslim forces. This marked the Muslim conquest of Lower Egypt. Later a Muslim army crossed the straits of Gibraltar into Spain. By AD 732, soldiers flying the banner of Islam had advanced into France north of Poitiers.

The first Muslims were Bedouin Arabs, nomadic people who made their homes in tents. These were responsible for the first Islamic conquests of Syria, Palestine, and Persia. In the cities they conquered, the Muslims converted old buildings and churches into mosques. During the early centuries of Islamic history, mosques and palaces represented the two outstanding architectural developments. The first dynasty of Islam, the Umayyads (661–750), which ruled from Damascus created a strong state under its Caliphs.

The first major monument of Islamic architecture is the Dome of the Rock in Jerusalem, built as a sanctuary on a circular plan (685–705). During the Umayyad dynasty, the mosque took on its permanent architectural form dictated by the needs of a large congregation: minarets from which the faithful could be called to prayer, a wide courtyard with a central fountain for ablutions and with surrounding colonnades to give protection from the sun. A large prayer chamber was marked externally by a dome as a sign of importance, and internally by the *mihrab* or



Figure 64: Village Mosque, Lower Punjab (courtesy Kamil Khan Mumtaz).

niche indicating the direction of Mecca. The last survivor of the Umayyad dynasty became the founder of the Emirates at Cordova in Spain, where the early style of Islamic architecture was brought to perfection in the Great Mosque (786–990).

Under the Abbasids, who supplanted the Umayyads in 750, Persian influence began to gain ascendancy. The main achievements of the Abbasids in architecture was the building of the new capital at Baghdad, constructed according to a circular plan (762–7), and the smaller city of Raqqa, Syria. It was during this period that Islamic architecture began to depart radically from Hellenistic and Byzantine conventions. Stone as a building material was discarded in favour of brick, and there was much use of decorative stucco. Grand palaces were designed for the new Caliphs.

The palace complex of Sammara, Iraq (c. 849–59), heralded the beginning of the predominance of Islamic art. It contained walled courtyards, rectangular pools and canals bordered with flowers, and wall decorations of geometrical and floral designs. Chinese and Indian architectural touches were incorporated into the large buildings.

The greatest achievement of Islamic architecture was its mosques. Building materials were dressed with intricate geometrical or floral surface decorations in painted stucco, mosaic, glazed tiles, or shallow relief carving. Local traditions influenced the decorative style in many regions. In the original nucleus of the Islamic world, the most notable later mosques are those at Tabriz, Persia (1204), Cairo (Mosque of Sultan Barquq, 1384), and Isfahan, Persia (1585). Muslim urban planning evolved in the tenth century with the founding of the city of Cairo by the Fatimids. The golden age of architecture in Persia was between the twelfth and fifteenth centuries. Here can be cited as examples the Great Mosque of Isfahan and the Persian kiosks (light, open pavilions supported by pillars). Architecture in Turkey was initially wholly influenced by Persian and Arab styles. After the Ottoman Turks conquered Constantinople in 1453, Turkish architects were faced with the task of converting the great Byzantine church, the Hagia Sophia, into a mosque. It was here that the Ottoman style evolved. A central dome is complemented by a series of half domes and slim minarets at the corners. This style was repeated throughout the area controlled by the Ottoman Empire.

Islamic Architecture in India

The development of Islamic art and architecture in India began with the establishment of the Delhi Sultanate in 1193. The Quwwat-ul Islam Mosque, Delhi, the first

major stone mosque, was built in 1193–7 incorporating materials from demolished Jain and Hindu temples. The Qutab Minar, or tower of victory, which served as a minaret, stood 238 feet high (later enlarged), of four storeys diminishing in sections and separated by balconies resting on brackets with stalactite mouldings. One of the earliest surviving tombs, that of Ghiyas-ud-din Tughluq (1540–45), was surmounted with a central dome and surrounded by little domed pavilions. It set a standard of magnificence that was later reflected in the tombs of the emperors Humayun (Delhi, 1565), and Akbar (Sikandarabad, near Agra, 1604–612). Both these tombs were set in formal gardens.

The emperor Babur left a lively account of his thoughts and feelings in his memoirs. Originally settling in Agra, he perceived the art of India as ‘...without the form of symmetry that separates the craftsman from the artist’. Babur found Indian cities shoddy, as if erected in a hurry. He employed over six hundred masons to build structures in Agra alone and planned a formal garden laid out in the Persian style.

Akbar’s greatest architectural achievement was the palace city of Fatehpur Sikri (c.1571–85). There were laid out mosques, audience halls, the magnificent tomb of the Saint Shaikh Saleem Chishti, the emperor’s quarters, those of the courtiers, and palaces for his wives built in the styles of their diverse faiths. The structures were a successful synthesis of Persian, Islamic, and Indian styles.

The tomb of Itmad-ud-Daula at Agra (c. 1622–8) was built at the command of Nur Jahan, the wife of the emperor Jahangir. To ease her grief at the death of her father, Nur Jahan helped design the beautiful structure built of white marble with grilles of carved lace-like tracery and encrusted with semi-precious stones.

Of all the Mughal emperors, Shah Jahan was the greatest patron of architecture. The

Taj Mahal at Agra (1630–53) is one of the wonders of the world. Built as a tomb for the empress Mumtaz Mahal, it is a unique combination of delicacy and monumentality. The carved and inlaid work is exquisite in every detail and it is perfectly balanced in its proportions. It was designed by a Persian master-builder, Ustad Issa Khan Effendi, with his pupil Ahmed Ustad, while the dome was the work of Shah Jahan's builder, Ismail Khan. Shah Jahan commissioned several halls and pavilions in the Red Fort at Delhi, as well as the Jamia Masjid and most of the buildings in the Red Fort at Agra, including the Moti Masjid.

The Lahore Fort was built in three phases. From Akbar's time survive the walls on the east and south sides, the inner wall on the north, and the eastern gate. The emperor Jehangir added a palace known as 'Jehangir's quadrangle'. Shah Jahan brought to the Fort his unique signature style in the *Diwan-e-Khas*, or Hall of Private Audience, and the exquisite *Sheesh Mahal* which has a marble dado, carved marble screens, and is ornamented with mosaics of tiny convex mirrors set in arabesques. West of the *Sheesh Mahal* stands the celebrated Naulakha

Pavilion, originally studded with 900,000 semi-precious stones and embellished with costly *pietra-dura* enamel work. From the same period is the impressive Hall of Public Audience. Aurangzeb was responsible for the Alamgiri Gate on the western side.

White marble inlaid in red sandstone was an innovation widely used by Mughal builders, while coloured materials were used to outline panels. The *ewan*, an arched recess or portal which allowed light to enter, often took precedence over the dome.

In 1650, work began on the Jamia Mosque in Delhi. 5000 workmen toiled daily for six years to complete the project. The great congregational Badshahi Mosque of Lahore was built between 1673–74, supervised by Aurangzeb's foster brother, Fidai Khan Khoka. The vast courtyard is designed to accommodate a congregation of one hundred thousand people. The imposing gateway, minarets and towering domes bear witness to the everlasting grandeur of the great Mughal dynasty.

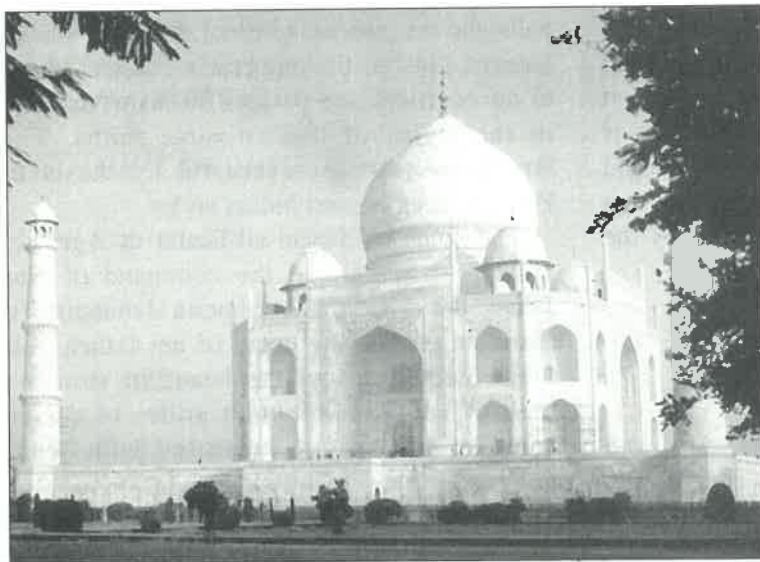


Figure 65:
The Taj Mahal, Agra.

The Raj in India

The earliest European buildings in India are the churches found in Goa, built in a Portuguese style in the sixteenth century. Relics of the French presence in India are found in the governor's palace built in Pondicherry in 1752, and the La Martiniere boys' school at Lucknow (c. 1780–1800), designed and built by Major-General Claude Martin. The British-built structures first appeared in the three major cities of the East India Company, Bombay, Madras, and Calcutta. In Bombay are the cathedral, begun in 1672, St. Andrew's Kirk, 1819, and the Town Hall, 1820–23. In Madras, St. Mary's Church was built in 1678–80 and the Banqueting Hall in 1802. Government House, Calcutta, was built in 1799–1802. All of these buildings were classical in style, mainly neo-Palladian and Greek Revival.

After the 'Mutiny', or first war of independence, in 1857, the British criss-crossed the subcontinent with railroads to ensure fast links between towns; stations and bridges were natural partners in this development. Towns became more easily accessible to the rural populations. The rural areas of India were untouched by British influence but in the major towns there was a distinct urban style based on the British Colonial design. Impressive art colleges were built in Calcutta and Madras, while in Lahore the Mayo School of Arts and Crafts was established in 1875, and the Lahore Museum was built to commemorate the visit of the Prince of Wales in 1894.

The early buildings were the work of army officers, amateur 'architects' as was often obvious. In the nineteenth century, the Gothic style was adopted for churches and public buildings. It was not until 1902 that a professional architect, James Ransome, was employed as a consultant by the Raj. Most notable of later British buildings are those

designed by Lutyens and Baker at New Delhi. Based on the Imperial Roman style, they incorporate touches of Islamic, Hindu, and Buddhist traditions.

Architectural Trends in Pakistan

The enormous influx of refugees in Pakistan after 1947 resulted in shanty towns (*kutchi abadis*) springing up in major cities to accommodate them, while Karachi as the capital city, saw the establishment of foreign embassies, Karachi University, and the Pakistan Secretariat. Co-operative housing societies were developed and colonies grew up for new settlers.

The western influence on architecture in Pakistan remains strong, with high-rise buildings and apartment houses an integral factor of urban living. Well known landmarks in Karachi include Frere Hall (Venetian Gothic, built in 1865), once the Town Hall and social centre for British administrators, Mohatta Palace, the Hindu Gymkhana, the K.M.C. building and the Sind Club, many of them built over a century ago. The Quaid-i-Azam's Mazar, Merewether Tower, the Cathedral, churches, Tooba mosque, shopping malls, luxurious modern houses, and the *kutchi abadis* found in Karachi's environs are all part and parcel of the kaleidoscopic city.

International hotels are now part of the cityscapes of Karachi, Lahore, and Islamabad. In Lahore, the National College of Art, the WAPDA building, and the award winning Alhamra cultural complex add diversity to the historic city.

In the 1960s, the new capital city of Islamabad was built close to the Margalla Hills. It was designed by the Greek architectural company of Dioxides. The Faisal Mosque was designed by Pakistani architect, Khwaja Zaheer-ud-din, while Gio Ponti designed the huge Secretariat building.

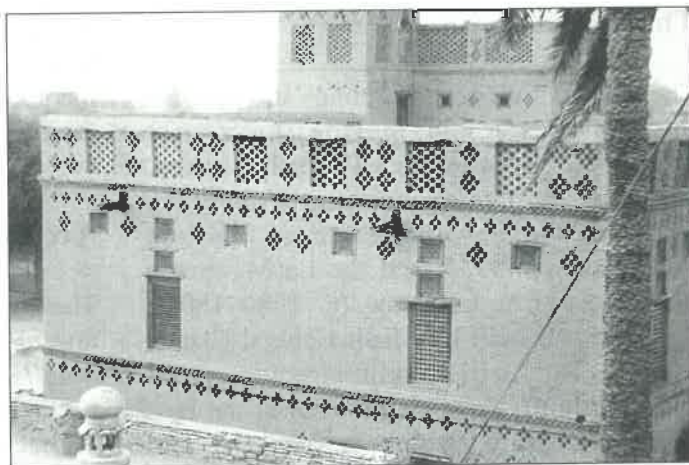


Figure 66:
Town House in Jalalpur, Piranwala
(courtesy Kamil Khan Mumtaz).



Figure 67:
Sector 'G' Housing, Islamabad
(courtesy Kamil Khan Mumtaz).



Figure 68:
Architect Kamil Khan
Mumtaz's house, Lahore.

The Industrial Era

The mass production of prefabricated building parts in Britain from the eighteenth century onwards was further developed in England and the United States in the nineteenth century. Examples such as a seven-storey cotton mill at Salford, England, Bogardus's cast iron facades in New York, and the Crystal Palace, built of prefabricated cast iron and glass by Paxton in 1851, typified industrialized buildings. Precast concrete methods were pioneered by Perret and Nervi. The term skyscraper originated in America in the late 1880s, about a dozen years after office buildings had reached a height of twelve storeys. With traditional building materials it was impossible to build beyond this height and further development was based on the introduction of metal framing. A multi-storeyed structure constructed on a steel skeleton with electric elevators combined extraordinary height with standard room spaces.

International Modern

Modernism became the first international architectural style. Architects Gropius, Garnier, Loos, and Hoffman created the new styles before the First World War (1914–18). The new concepts were accepted in Central Europe in the 1920s, soon to be followed by other European countries and America. In the United States, International Modern reached its peak with Mies van der Rohe, whose style was characterized by cubic shapes, asymmetrical compositions, and a metal and glass framework, often with large windows in horizontal bands. Typical of the style were the Bauhaus Building of Walter Gropius (1925–26) in Dessau, Germany, and the Salvation Army Hostel built by Le Corbusier in Paris (1929–33).

Brutalism is a term used to characterize a style that incorporated the use of concrete and was employed by architects Le Corbusier, Vittoriano Vigano, and Paul Rudolph, and Mayekawa, Tange, and others in Japan.

Post-modernism

Post-modern architecture emerged in America and Europe in opposition to Modernism and contemporary movements such as High Tech. Based on engineering, construction, and other technologies, High Tech was developed by English architects, notably Foster and Rogers, in the 1970s. Buildings are characterized by exposed metals, use of glass, and internal zones rather than rooms.

Of all the arts, it is in architecture that the space aspect is most important. Architecture is developed from a 'programme'; groupings of space and masses are designed keeping in mind the actual function of the structure. The basic concepts involve a *plan* showing the boundaries and enclosures of the building. A *section* will show the placement of the masses and an *elevation* will show its features and other elements visible in front of or beyond the wall.

The architect must be knowledgeable in the fields of art and sculpture as well as have a thorough training in mathematics. Any proposed building presents numerous problems of space, site, surroundings, etc., peculiar to the project. It is the architect's responsibility to resolve the problems of the structure of a building. He must be aware of the underlying engineering problems of the structural principles. These factors and the requirements of the clients are of the utmost importance.

The way of life in the twentieth century changed the forms and scales of architecture, transforming existing towns and cities and establishing new ones. Throughout Europe, after two destructive world wars, architects aspired to replace existing slums with



Figure 69: Singapore, the modern city.

structures that introduced sunlight and hygiene into the lives of the masses. Unfortunately, the urgent need to rebuild a severely damaged public infrastructure and shattered economies led to misconceptions and mistakes in the shape of ugly tower blocks and inferior materials.

In present times diverse theories and highly innovative solutions can be seen, from the underground cities in Arizona, the NASA

space labs, the Tokyo Forum, the Pompidou Centre in Paris, and the European Court of Human Rights, Strasbourg, to the harmonious conversion of the old Billingsgate fish market and Lloyds of London building. Architects have predicted a future encompassing a global community adapting art and science to serve the common good, in buildings that adjust to their environments.

10 GRAPHIC DESIGN

The art of graphic design visual communication has its roots deep in history. Some 30,000 years ago the earliest graphic images were incised on bones, stone, and ivory. The meanings of the marks remain a mystery, but they may have recorded time, the seasons, or lunar cycles. Perhaps they told a story or served as a memory aid. The most dramatic and best known examples, dating back to 15,000 BC, can be seen on the walls and ceilings of caves at Lascaux in southern France and at Altamira in Spain. Cave dwellers used charcoal, mineral pigments, and water to create images ranging from stick figures to large, painted groups of animals. All these figures were symbols like pictographs, visual communication images evoking the spoken word. As cultures widened and trade expanded, the need for keeping records arose. The civilizations of the Indus Valley, Mesopotamia, the Nile region, and the region of China that grew along the Yellow River, were the places where great innovations in communication took place.

The earliest records to document a fully developed civilization are believed to have been written sometime after 3300 BC. The civilization existed in Mesopotamia, located in an area known as Sumer. Here the first system of recording and so the beginning of a written language started. The method was simple: clay tokens of various shapes were used to represent different things such as animals, trees, plants, etc. With these tokens, an individual could account for his possessions and practise trade. Amongst other inventions, the Sumerians are credited with inventing a written language around 3300 BC. With this development, literature, laws, and administrative records, recorded history began.

The earliest Egyptian writings date back to sometime before 3000 BC, a picture writing system that utilized both pictographs and ideographs. This early type of writing is called hieroglyphic. Highly stylized in form, hieroglyphics were arranged vertically and read from top to bottom. Used in the decoration of temples, tombs, and monuments, the signs were chiselled in stone, painted on plaster, cut in wood, and written with brush and pen on papyrus.

The Indus Valley civilization's close links with Mesopotamia and Sumer were established through the seals discovered that were common to all. The script used in the Indus Valley was inscribed on seals using numerous designs showing animals and plant motifs, as well as symbols such as circles, crosses, and swastikas. This language remains a mystery, undeciphered to date.

Although hieroglyphic, hieratic, and demotic (a simplified version of Egyptian) writing styles appeared in the course of Egyptian history, they were replaced finally by the Roman alphabet. The papyrus scrolls made around 2500 BC laid the foundation of a method combining text with pictures.

† The Phoenicians were an aggressive and adventurous nation of semitic seafarers and merchants who settled along the coast of Lebanon and Israel. They had a network of trade colonies around the Mediterranean Sea and needed an efficient writing system. To fill the need, they borrowed from the Sumerians and the Egyptians to develop a phonetic language of twenty-two written signs. It was based on the principle that one sign represented one sound. For example the first two letters were 'Aleph' and 'Beth'. The

Greeks followed the Phoenicians in developing a written language; in fact, the Greek 'Alpha' is taken from the 'Aleph' of the Phoenicians. The Greeks made an important modification to incorporate the vowels emphasized in the Greek spoken language; they removed two characters and added five more signs, creating an alphabet of twenty-five characters. Before 403 BC, all writing had run from right to left; the Greeks brought about a change and adapted their script to write from left to right in the Ionic version.

It was during the early period of the Roman empire that the Roman or Latin alphabet achieved its present form. The Romans took thirteen letter forms unchanged, modified eight others, and later added two more to create an alphabet of twenty-three letters. They dropped the Greek practice of calling the letters alpha, beta, cappa, etc., in favour of simple A.B.C. as is used in present times. The existing Latin and English alphabet of twenty-six letters has its roots in the Roman alphabet.

One of the most dignified earlier scripts had square capitals that looked good but were difficult to use for speedy writing. These were supplanted in the sixth century by uncials, which had rounded forms and were written with ease. The Romans are also credited with the development of the modern book form which they called a codex, with pages made from lambskin or parchment.

During the early Middle Ages the Latin language was kept alive by priests, and monks, the monastery scribes, who copied out religious works. By the Romanesque period, the round open forms in use were replaced by smaller lettering with less spacing. As the number of churches and monasteries increased, so did the production of manuscripts. The scribes came into their own, establishing their own workshops, forming guilds, and being known by fanciful titles such

as 'illuminator' or 'flourisher'. The workshops produced legal documents, text books, and devotional books. By the early Gothic period, letter forms had become narrow and angular. Called 'Textura', they were difficult to read and are referred to today as Gothic or as Old English.

By the late Middle Ages, around AD 1300, script was re-examined by a group known as the Humanists. These were not priests but men who wanted knowledge for intellectual growth. Graphic designers owe a special debt to the Humanists for creating the small letter script. From this developed the model for the first true Roman and Italic typefaces.

The invention of paper in China in AD 105 paved the way for printing techniques. It was the innovation of Ts'ai Lun, who worked with various vegetable fibres such as bark, bamboo, cotton, silk, linen, and rope fibre. The fibres were beaten till they formed a pulpy substance, which was then mixed with water in a large wide drum. Then a shallow, porous mould was dipped in the pulp. When the mould was lifted out of the drum, the water would drain out, leaving a thin mat of fibres to be put aside to dry. Thus the mat was transformed into paper. The craft spread to Samarkand in Central Asia in AD 751 by way of Chinese prisoners taken by the Arabs. The Arabs introduced the craft to Spain, and from there it spread to the rest of Europe during the twelfth to fourteenth centuries. The first paper mill in England was established in the late fifteenth century and in America in the eighteenth century.

A method of woodcut printing was also developed in China before the Christian era and was used by the Chinese to stamp patterns on silk. The first woodcut prints on paper appeared in Europe in about the fourteenth century. It is thought that the first graphic art appeared in the form of either playing cards or single sheet souvenirs of patron saints made from the screw press.

Later in the fourteenth century, in Germany, Johann Gutenberg's invention of printing from individual pieces of cast type affected the course of history. The success of his press was so phenomenal that at the end of the century more than a thousand printing shops were operating and printing 10 to 20 million books. Gutenberg had realized that the printing process would be speeded up if individual letters were cast separately in metal blocks to be assembled into pages. In this way, pages could be made much faster than by previous methods, and easily corrected and printed, and the type could afterwards be cleaned and used again. This process of printing by cast type is generally considered the greatest contribution to the graphic arts. Gutenberg's letter press was so well conceived that it remained the main printing process for nearly 500 years.

Early printing was more art than science. The quality of work depended on the skill of the printer, the quality of paper, type, and ink, and the press. It was impossible to produce a uniformity in paper as it was then handmade and had to be dampened to ensure a good impression. The frame holding the type was laid down and inked with leather inking balls. The press was prepared for use ensuring that the pressure was even on the paper. The actual printing was done by turning a large screw. After printing, the sheet was hung up to dry. Later the same process of damping, etc., was repeated on the blank side of the paper. When all the pages were printed, the sheets were folded, gathered, and taken to a binder to be stitched and bound into a book.

The world soon began to realize the advantages of printing. It spread rapidly to Italy and then France. The truly Roman typeface was cut in 1470 by Jenson, a French printer and publisher, and the first book to be printed in the English language was produced in 1474-5, by William Caxton, who also printed Geoffrey Chaucer's *Canterbury Tales*.

During the seventeenth century, religious intolerance and government censorship played an important role in determining where printing would flourish. Holland became dormant, England struggled to establish a viable printing industry, while in North America the first printing press was established. The world's first regularly published newspaper, called *Avisa Relation oder Zeitung*, is credited to John Carolus of Strasburg and came out on 15 January 1609. Others soon followed. The first British daily, the *Daily Courant* appeared in 1702. The first successful American newspaper, *The Boston News Letter*, was published in 1704.

By the eighteenth century, printing had become a major industry in Europe. With increased demand for printed matter and more critical readers, printers and publishers became discriminating in their use of better typefaces, paper, and presswork. New forms of printed matter appeared. By 1720, an engraver, William Caslon of England, designed and cast his first Roman and Italic typefaces. Caslon's printing is considered the last of the old style type designs. John Baskerville's typefaces followed, and his books were the first printed on a new type of paper called wove paper. Virgil came out in 1757 and Milton's *Paradise Regained* in 1759.

The most important printer in Colonial America was Benjamin Franklin, better remembered today as a statesman and one of the men who signed the American Declaration of Independence.

By the beginning of the nineteenth century in England the all iron press, the 'Stanhope', had been invented. Further improved, it was followed by the discovery of steam power, an innovation that revolutionized the industry. Friedrich Koenig, a German designer working in England, redesigned the press to work on steam power. He replaced the traditional flat platen, the iron plate in the printing press by which paper is pressed against ink type, with

revolving impression cylinders that not only carried the paper but provided necessary pressure for printing. The Koenig's press was first used by The Times of London in 1814 and increased the impressions fivefold. Other innovations followed. An American, Richard Hoe, invented the first rotary press in 1846. This was followed a year later by Web printing on a continuous roll of paper, rather than sheets, the invention of another American, William Bullock.

The demand for and supply of the popular press, novels, magazines, and newspapers expanded rapidly during the nineteenth century. There was little distinction between fine and commercial art and some of the period's leading artists created illustrations for books and magazines.

Meanwhile, paper production was changing. Friedrich Keller's innovation of a mechanical machine to grind wood into pulp produced paper that was inexpensive and suitable for newspapers. Just as the presses were being mechanized, so were lithographic and gravure presses. Other machines followed the Linotype and, by 1887, an American named Tolbert Lanston successfully patented the Monotype cast machine. As the century progressed, the demand for newspapers, periodicals, catalogues, and other advertising matter grew. In the ensuing competitive market, there was a great demand for typefaces that would attract the reader's attention. Advertisers wanted large, eye catching typefaces. Type designers rose to the occasion and produced a hitherto unimaginable assortment of typefaces, for example, Sans serif, Slab serif, Decorative, and Wood type. This was the time that Advertising Typography came into its own.

The invention of photography by Daguerre in France in 1839 led to dramatic changes in the images produced. Photography was used as an aid to wood engraving in graphic arts and was used in lithography in 1852. Photography

was to influence the production of a continuous reproduction of tone art. Improvements in lithography and chromolithography added to the popularity of these graphic devices. Dramatic results were obtained from chromolithography when one-sheet and two-sheet advertising posters were printed from huge lithostones.

Although the first two decades of the twentieth century were a period of great creativity in the field of arts, it had very little effect on Graphic Design. This was particularly true in the United States, where designers were more concerned with continuing the efforts of designer William Morris and his American followers by improving book designs and creating better typefaces. In Europe at the beginning of the twentieth century, Peter Behrens, the Director of Design of AEG of Germany, produced outstanding graphic designs. Austria's contribution to graphic arts was made by designers of the Vienna Secession. Posters and magazines reflected the influence of Art Nouveau. Edward Johnston was considered England's leading designer; a master calligrapher and letterer, he is best known for his design of modern Sans serif typeface for the London Underground in 1916. This typeface is still in use. Johnston trained the calligraphers and designers Eric Gill and Alfred Fairbank, outstanding in their field. Meanwhile in America, the offset lithography press, which printed with great speed, was invented.

With the end of World War I (1918), peace came to Europe. Changes were about to enter people's lives. Graphic Designers found that with the availability of electricity at nominal cost, new electric appliances such as refrigerators, washing machines, vacuum cleaners, toasters, radios and record players were fast coming into use. The demand for these items was stimulated by sophisticated newspaper, magazine, and radio advertising.

For the designers of the period it was an exciting and challenging time.

In Germany in the 1920s, Graphic Design was revolutionized by Walter Gropius, who integrated the arts and crafts institutes of the city of Weimar into one academy called *Das Staatliche Bauhaus Weimar*, or simply 'Bauhaus'. Gropius recruited some of the finest and most creative minds of the day including Paul Klee, Wassily Kandinsky, Marcel Breuer. By putting their theories into practice, the Bauhaus created innovative books, posters, catalogues, exhibitions, and typefaces. Pressure from the German government closed down the Bauhaus in 1933, but the students dispersed all over Europe and America, spreading the philosophy of the Bauhaus, which had a major effect on the teaching methods of arts and crafts in this century.

The period between 1960 and 1980 was a time of innovation and experimentation in graphic arts. Ideas and images flowed freely between fine arts and graphic arts. Rauschenberg, Warhol, Lichtenstein, and others borrowed images and techniques from the commercial world, while designers turned to fine arts for inspiration. By the mid-sixties a new energy was sweeping the world of graphics. Psychedelic art, with its bizarre or distorted images, was being used for posters, magazines, and records but it had little effect on mainstream design.

Japanese designers attempted to synthesize western techniques of collage, airbrush, and International typography styles with Japanese aesthetics including symbols and calligraphy. At its best their work reflected a sophisticated mixture of eastern serenity with diverse western energy. Perhaps best known abroad is the Japanese graphic designer of the 1960s, Yusaku Kamekura, who designed the posters for the 1964 Olympics.

Art Schools now teach their students not only the traditional disciplines of graphic

design, such as lettering and layouts, but also how to exploit the latest innovations in photography, typesetting, and printing techniques and technology. In the contemporary field of graphic design, significant work is being produced by a new generation of graphic designers. The latest innovations include the use of computers for the production of designs, which has opened new vistas. While it is on the computer screen, the design is a collection of points of light. Each point is controlled through software and input devices such as mouse, joystick, and electronic pen, allowing the image to be manipulated through countless modifications. There are numerous computer processes such as reverse, enlarge, make smaller, blur, change colours, and other variations, exciting and useful components in graphic arts. The designer can also print out the image at any stage and keep a record of the processes stored in the computer.

The connection between lettering or calligraphy and typography is fundamental. Typography is lettering adopted for a certain purpose. Lettering or calligraphy lies behind everything a typographer does. Today, since types are no longer cut in metal, the influence of drawing on typography is becoming stronger. The classification of typefaces are: 1. Baskerville, 2. Garamond, 3. Eras, 4. Melior, 5. Bookman, 6. Bodoni, 7. Gill Sans, 8. Souvenir, 9. Plantin, 10. Helvetica, 11. Univers, 12. Perpetua, 13. Times Roman, 14. Caslon Old Face, 15. Century Schoolbook, 16. Futura, 17. Rockwell, 18. Optima.



Figure 70: Typography.

The methods of composition are: 1. Hot-Metal Machine Composition; 2. Cold-Metal (strike-on) setting; 3. Film setting; and 4. Word processing systems.

Typography is an exacting art that requires many details from the typographer such as: what type of paper to use, exactly how many lines a given manuscript will make in a certain size of type, the design of the book and its sections. A similar position exists with newspapers.

ABCD abcd

Script Sans Serif

AVWM

Script Serif



Figure 71: Typography.

Typography

Typography is the art or skill of designing printed letters in order to communicate a message by means of printed words. This covers a wide area encompassing the design of books, magazines, newspapers, and advertisements; in fact anything that involves the printed word for communication to others.

The history of typography begins with the invention of writing. The Graphic Design chapter includes some information on the history of the alphabet, papermaking, and printing machines.

The first books produced were embellished with borders ornamented with woodcut designs, there were also illustrations and decorative lettering. The most famous printer of the sixteenth century was Christopher Plantin, whose press survives today as the Plantin Moretus Museum in Antwerp, Belgium, a place of pilgrimage for typographers.

By the beginning of the sixteenth century, printed books were beginning to enter the market and to be considered objects in their own right. Western calligraphy has been described by Stanley Morrison as, 'freehand in which the freedom is so nicely reconciled with order that the understanding eye is pleased to contemplate it'. There are numerous modes of penmanship or lettering drawn by hand; however, it is difficult to establish any real difference in the definitions of lettering and calligraphy. Usually in the English language they refer to the same thing.

Calligraphy

The use of lettering in conjunction with typography is of the greatest importance in every kind of modern design. It can be used to enliven book jackets, title pages, letterheads, advertisements, in fact almost anything. While creating beautiful letters is an art form, it often had nothing to do with the meaning of the word illustrated. The characteristic shapes and curves of calligraphy from any country are visually exciting; for instance, many people who cannot read Chinese or Persian are visually entranced by the beauty of the characters. Gifted scribes are often able to express a mood or emotion that is in harmony with the meaning of the word.



Figure 72: Calligraphy by Sadequain.

In the sixth century AD the tribes of Arabia were poor, disunited, often at war with each other. It was to a member of one of these tribes that the divine message was revealed.

One of the characteristics of pre-Islamic Arabs was their love of poetry, which they passed down through successive generations by means of an oral tradition. At night around the fires, great poems would be recited and fixed in young memories. The need to record and hand down every syllable of the Holy Book initiated the urge to find a vehicle fitting for the divine words. In the art of calligraphy, the Arabs have never been surpassed, though equalled by the Chinese, whose skills at calligraphy developed along very different lines.

The script first chosen was *kufic*, named after the Iraqi town of Muslim learning, Kufah. Of all the Arabic scripts it is the closest to drawing. The horizontal strokes, often elongated, endow the script with energy. In the third century of Islam (ninth century AD) the *kufic* script was developed in three directions. Persian *kufic*, Baghdad *kufic*, and western *kufic*. The *Naqshi* style was too dissimilar from the *kufic* scripts to be their

true complement. To examine the grandeur of the *Kufic* style one must look to the east, to those scripts known as *Muhaqqaq*, *Rayhani*, and *Thuluty*, which were used in creating hand-written books of rare beauty. These styles developed in parallel to the *Naqshi* script.

An extension of calligraphy was book illustration which became the starting point of miniature painting. The miniature reached its peak under the Safavids in Persia and the Mughals in India, when artists were commissioned to illustrate and embellish volumes of poetry, history, and other works.



Figure 73: Calligraphy by Shakir Ali.

11 TEXTILE DESIGN

The history of textiles is a long one. Historians cannot precisely date ancient, patterned textiles as no written records survive, but we do know that more than 5000 years ago, Egyptian mummies were wrapped in a linen fabric woven from flax. The earliest sheep's wool cloth was found in Mesopotamia, on the banks of the Euphrates, dated at about 4000 BC. One thousand years later, cotton was in use in two unconnected parts of the world, India and Peru. Silk was first cultivated and woven in China in about 2650 BC, and by 1400 BC, the production of silk in China was a flourishing concern.

Other interesting textile developments have left mementoes behind for us to research. Egyptian tomb paintings that show costumes printed with designs date back to 2000 BC. At the same time, in Peru, clay cylinders were used to print border patterns. Five hundred years later, both Peru and Mexico were using a tie-dyeing, batik technique. It is thought that batik was used in China and in India, but the art reached its peak on the Indonesian island of Java in about 1200 BC. For the next two thousand years, patterned cloth was manufactured in diverse countries and cultures of the world, Greece, Japan, Persia, Nigeria, and Europe.

From the fourteenth to the seventeenth centuries, the weaving industries in Europe, tapestry, damask, and silk embroidery reached new heights and fabric painting declined.

One of the forerunners of modern designs in textiles, William Morris (AD 1834-96) studied architecture at Oxford, where he became a friend of Burne Jones. He left architecture to study painting under the influence of Rossetti. In 1861, he founded the

firm of Morris and Co. to produce fabrics and wallpaper, furniture, tapestry, stained glass windows, and carpets. His designs were completely different from the prevailing fashions of the day. He was a considerable influence on the Art Nouveau movement which spread across Europe and America in the 1890s. William Morris designs are still greatly admired in America and Europe.

The age of synthetic chemical fibres began in France in 1929 with the perfection of a silk-substitute called rayon, but for over 7000 years the history of textiles can be traced by the development of four natural fibres, i.e. flax, from the stem of the flax plant, wool, from the wool of sheep, cotton, from the seed pod of the cotton plant, and silk, from the fine webs spun by silkworms nourished by the leaves of the mulberry tree.

In modern times, printed fabrics are an integral part of our everyday lives. Textile designers create attractive materials used in making various types of outfits for the entire family, while in the home we may have patterned curtains, furniture upholstery, wallpaper, bed covers, and numerous other items.

Contemporary textile designers demonstrate their imagination and skills in a number of ways. Their innovations are an endless, ongoing phenomenon which may refer to sources past or present. Designs may be influenced by traditional or contemporary ideas, using colours, motifs, and layouts that reflect new patterns and trends. These designs and colours then influence home decorating markets and, ultimately, world markets.

Several Fine Art movements have greatly affected textile designers at different periods,

for example, neo-classicism, art deco, art nouveau, the Bauhaus school, cubism, expressionism, ethnic trends, and folk and pop art. Several famous artists have been the source of inspiration for textile designers: Henri Matisse, Picasso, Raoul Dufy, Paul Klee, David Hockney, John Piper, Henry Moore, and Andy Warhol, to name a few.

Constituents of Textile Design

To work in the field of textile design, one has to cultivate and master the following three skills: 1. designing, 2. working with colour, 3. doing repeats. Though there are specialists in each and every one of these three aspects, a designer must be proficient in all of them.

Design

A textile design begins on paper with an idea or theme. When the idea is fully developed, the designer tries it out with various colour combinations before attempting the layout.

Colour

The colours selected for a design are of prime importance. Designers have been known to get away with a mediocre design due to a pleasing selection of colours. On the other hand, excellent designs have been ruined because of a poor choice of colour.

Repeat

A repeat is the finalized interpretation of a pattern that has been designed and painted to meet the exact requirements of the printing process. The design will show how the pattern will be printed over and over again in a

continuous flow, without discernible interruption. When the repeat is finished it is sent to the textile printing plant, where a separate screen or roller is prepared for each colour and the design is then printed on whichever fabric is chosen for that particular design. It has been suggested that the origins of chintz, the bright, printed fabric so popular in home furnishing, are found in India, where a method of printing employing as many as sixteen colours was used. It is believed to be derived from the word *tchint*, meaning 'variegated'.

There are three factors which are of vital importance for the expression of a textile designer's creativity and imagination: a synthesis of ideas, the materials, and a mastery of technique. The choice of materials determines the look which will be given to a particular design, sensible and appropriate materials will assist in giving the desired effect in an efficient way. The two categories of printed fabric designs are: apparel and home furnishing.

The two types of paint used in textile design are both water-based. Gouache and tempera are opaque and therefore can be applied one over the other without bleeding or changing. Dyes or concentrated water colours are transparent, and, if one is applied over the other, a third colour will be formed.

Several painting and sketching surfaces are available to the textile designer to work out his ideas; these may be textured, smooth, transparent, or opaque. Papers with a slick and shiny surface should be avoided as they do not absorb the paint properly. The types of paper which have been found most effective are: Bristol white, waxed rice paper, coloured papers, Plasti-vellum paper, tracing paper, transfer paper, and acetate-treated paper.

Good brushes are essential for textile design, and several types of technical pens are used. Some of these are: the Rapidograph, a pen fitted with an ink-filled cartridge; a ruling pen or mechanical pen for ruling lines; and the crow



Figure 74: Different motifs used in textile design.

quill pen point. This is the old fashioned pen, very useful for fine line drawing.

Various types of patterns are designed on topical subjects, the seasons, or a special occasion. There are also certain basic designs from which further combinations can be used as a basis for exciting variations. Some examples which may interest you include: Floral designs, Ethnic or Folk designs, Monotone (designs that use only one colour with white), Patchwork, Liberty prints (a classic English design of small, multi-coloured flowers), Chintz (a glazed or polished cotton with bright, floral patterns juxtaposed with motifs such as birds or trees, used in upholstery), Conversational (designs with realistic or stylized motifs that tell a story or contain a message), Batik, Paisley (characterized by the 'mango' shape accompanied by elaborate details; this design was derived from the motifs found on 'cashmere' or Kashmiri shawls and popularized by weavers of Paisley, Scotland), Geometric, Foulard (a small, neat design originally used for men's neckties and cravats), Art Nouveau, Art Deco, Contemporary, Botanical, Toile (Toile de Jouy means cloth from Jouy, a French town whose world famous prints were established in the eighteenth century), Scenic or Landscape, Country French (these are designs printed from woodblocks, originating in eighteenth century Provence, France), Tropical (motifs and colours inspired by tropical regions), Tapestry, Neo-Classical, Damask (elaborately patterned woven fabrics that are produced on jacquard looms; they were first produced in Damascus, Syria, in the thirteenth century), Documentary (this design is inspired by or adapted from an historical document or fabric; its source may be any culture and the challenge to the designer is to adapt the reference to a contemporary market).

The special characteristic of designing textiles is that unlike other commercial art forms, a design must be prepared so that it

can be printed again and again in a continuous flow without interrupting the pattern. As mentioned earlier, this is the 'repeat' process.

Techniques of Textile Design

Designers must master a repertoire of special techniques to accommodate changing fashion trends and to create new looks. A brief resume of some techniques is given below:

Batik

Batik is an ancient wax resisting method of printing designs on fabrics, known in modern times as a 'resist' method. Certain areas of the fabric are covered with wax before it is dipped into dye. The areas that have been waxed resist penetration by the dye, so when the wax is removed, the design emerges. The process may be repeated many times to achieve the final effect. An exciting characteristic of the batik method is that the wax dries and cracks on the cloth. When immersed in the dye, the colour penetrates through the cracks to the fabric and so produces a unique 'crackle' effect. When planning the design on paper, the textile designer has to visualize this effect on paper, so that when printed it will have the batik look. By substituting bleach for a dye one will get a white or light batik on a design.

Bleach

The bleach technique is used on designs with a dyed background. It is used as an alternative to painting the background around the motifs called blotching. The bleach removes areas of colour from a dyed ground making it possible to apply a new colour to this area, or to leave it white. This technique is particularly effective

when light or bright colours are used on darker ground areas. Bleach can be used on designs painted in dyes to obtain special effects.

Three-dimensional Flower Shading

Flowers are used frequently as textile design motifs. The designer's ability to draw and shade the flowers is of vital importance, and if he has been a student of art, he should be able to achieve this by using dye, gouache, and tempera.

Stippling

Stippling is a method in which small dots are used instead of shading motifs and backgrounds. Pen and ink, brush and paint, marker, and technical pen are some of the tools that can be used to achieve a stippling effect. Depending on the design, gouache, dye, coloured pencil, and crayon can also be used for stippled dots.

Splattering

The spatter technique is one in which the designer employs a toothbrush and spoon to create shaded colour results that resemble the effects created by an airbrush. Splattering is similar to stippling but can produce finer shades more quickly.

Sponge

The sponge technique is used to create a textured effect on flowers and other motifs by using daubing paint on the design. Different sponges can be used as needed. This technique can be used to give background effect.

Warp

A warp effect on a design emphasizes the vertical or horizontal threads that can be seen on a woven fabric. The vertical threads are called warps and the horizontal are wefts. A warp look can be simulated by painting on top of, and around, the edges of the motif. The warp technique is often used in the background to give the design a woven look.

Embroidery

A design can be painted entirely of embroidery stitches or stitches can be used on top of, and around, the edges of the motifs so that they appear to be sewn onto the background. This technique creates an applique look. Such work done in gouache or dye with a small brush, felt tip pens, or pen and ink, is very effective in achieving a patchwork, folk art, or ethnic look, for apparel and home furnishing.

Dry Brush

The dry brush technique is used to paint shaded effects with brush strokes.

India Ink-Woodblock

This technique simulates a woodblock print appearance. It is most effective on tropical, floral, jungle, or animal patterns.

Quick Photocopy

A quick way to create a design is to use multiple photocopies of motifs pasted together in a layout to form a pattern. This simple technique can save much time and labour. It

is mostly used for apparel designs and only when subtle differences of hand painting are not required. It is often very effective when combined with painted areas.

Textile Printing Methods

In the textile industry there are four primary textile printing methods or processes: rotary, copper roller, flat bed screen, and heat transfer. Hand screen printing is done entirely by hand and produces the most beautiful and expensive printed fabrics. There have been several significant developments such as using rotary screen printing in place of copper rollers for wearing apparel. There are other printing processes such as heat transfer printing, resist printing, pigment or dry printing, blotch printing, discharge or extract printing, and wet printing.

These days computers have taken over a lot of the work in the field of design and have become an accepted tool available to textile designers. In most converters (converters are companies that convert raw fabric prior to bleaching, dyeing, or printing; they usually have one or more studios where designers, repeat artists, and colourists are employed) and design studios, computers have become an integral part of the design, colour, and repeat process. They are great time savers, and with the help of experienced textile designers, can produce phenomenal results in a very short time.

12 WEAVING



Figure 75: The spinner and the *charkha*.

An alternative to textile printing, weaving provides a method of producing designs on fabric. As mentioned in the chapter on textile design, natural fibres come from a variety of sources. As well as the protein (animal source) and cellulose (plant source) fibres such as flax, cotton, wool, and silk, there are also distinctive fibres such as those from the Angora goat that produce mohair, camel hair, popular in the west for coats, vicuna from the llama family, used for rugs and coats, cashmere from Kashmir goats, and jute, a plant fibre used in making sacks and carpet backing. None of the fibres are very long in their natural state. After cleaning, the first process they undergo is *spinning*, i.e. the fibres are laid out in parallel lines (*carded*) by rolling them between two surfaces faced with points. After removing short fibres in a process known as *combing*, the fibres are rolled in machines that pull out the yarn and twist it. This action helps to keep the fibres together. Making stronger yarns entails twisting several fibres together, while putting together fibres from different sources creates

mixtures. Finally, the yarn is dyed and wound on spools or bobbins, ready to be woven. Manmade fibres can be used without the spinning process in making delicate items such as nylon stockings or net curtains, but for more substantial fabric, several threads are wound together to make a thicker yarn.

The two techniques employed in turning yarn into fabric are *weaving* and *knitting*. Traditionally, knitting is used in making hosiery and garments, while weaving creates rolls of cloth for clothing and furnishing fabrics. Modern knitting machines allow far more ambitious designs than had previously been possible. Combining wool with man-made fibres creates garments that keep their shape and are easier to clean and store.

Until the eighteenth century, only hand looms had been in use for weaving. Edward Cartwright's invention of the power loom, entailing the mechanical shifting of the shuttle across the loom, radically changed production methods.

Joseph Marie Jacquard developed a more efficient system in 1801 by controlling the loom with a series of punched cards. These allowed warp threads to be lifted and lowered



Figure 76: The pitloom weaver.



Figure 77:
Designs to suit all tastes.

in the correct order. In this way the weaving of intricate designs was mechanized. The pattern of the weave can be manipulated to produce myriad effects. Lustrous satin gets its gloss because the warp threads are interwoven with every fourth or fifth weft thread instead of every single one. Damask is made from a similar technique except that places where the warp lies on top alternate with places where the weft does. Gabardine, serge, and whipcord are made from twill weaves, while velvet, velour, corduroy, and plush are made from pile weave: the pile in such fabrics is made by cutting some of the threads after weaving so

that they stand out from the surface of the fabric. Modern looms for weaving are fully automated and electrically driven, but the basic principles of the weaving process are similar to those used in earlier looms. There are two separate yarns employed, the warp and the weft. The warp runs along the length of the cloth while the weft runs vertically across, alternately over and under the warp threads. By varying the colours of the threads or altering the pattern in which the yarns are interwoven, weaving is open to countless complexities.

13 CERAMICS

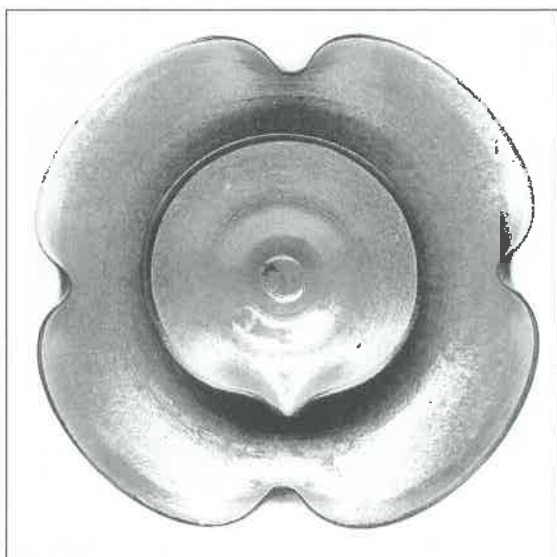


Figure 78: A bowl within a bowl, Sherazade Alam.

The earth has provided for man's needs since the world began. Clay is the only natural material which can be shaped directly by hand in its raw state. When wet, it can be fashioned into almost any shape and will retain the shape when the water contents evaporate, while when in a dry state, it is fairly solid and hard and possesses the property that it can be broken up and soaked to reshape.

Clay pots and other pottery pieces have been in use for over 8000 years, and a major source of our knowledge of the different prehistoric peoples who populated the earth has been provided by relics of clay objects. Because heat-hardened clay is resistant to decay and disintegration, numerous pieces have survived to be discovered on excavation sites throughout the world.

Ancient religious rituals used, and funeral offerings were often made in, clay pots. Through these relics, archaeologists have been

able to trace the progression of various groups and learn how they ate, lived, and dressed, and their levels of craftsmanship. The development of pottery and ceramics has been a gradual process. The earliest method involved a stone base and mat; this method was replaced by the use of a flat slab placed on spindles set on the ground. The first wheel thrown pots are believed to have been made approximately 5000 to 6000 years ago in Mesopotamia. Early examples are coarse but as time went on, a diversity of designs and decorations appeared.

The history of Chinese and Greek pottery and ceramics contains examples of considerable beauty and exquisite craftsmanship which would require a separate study. Suffice to say that they were masters of this art from early times. The word 'ceramics' encompasses a wide range of artistic achievements, from a homely bowl used for daily cooking to large-scale pieces used for architectural construction. The multiplicities of the medium are limitless, but to the beginner handling clay for the first time, turning that lump of clay into a pleasing object is the vital concern. What exactly is clay? The erosion and decomposition of the earth's surface is a continuous process. Over the millennia great igneous rocks slowly transform into minute seeds of clay. The main elements in igneous rocks are silica and alumina, the two essential elements in clay. There are various types of clay, such as primary clay, and kaolin or china clay, found in rock formations. This particular clay was discovered in 200 BC and was used to produce the earliest high-fired stoneware. By AD 600, improved kilns made it possible to exploit the whiteness of the clay by producing translucent porcelain.

Secondary clays are clays transported by water and wind. Ball clay, so called because it was carried to potters in the form of balls, is one of the finest secondary clays. Refractories (heat resisting material) include fire clay, found in the region of coal mines and good for fire bricks. Finally there is common clay, which is found almost anywhere in the world.

The preparation process needs to be handled with great care to ensure an even consistency. Silica sand or another powder may be added until the consistency is just right. The clay is then beaten and wedged to remove air pockets, and if it is to be stored, must be covered with a damp cloth or plastic cover.

A variety of shapes may be obtained on the potter's wheel in wide bowls, high bowls, urns and bottle shapes, and pots of all sizes. The skills required to make lips, spouts, handles, and lugs will only be perfected with practical exercises. It is a fascinating sight to watch the potter at the wheel throwing clay. He appears to be completely in harmony with his tools and totally relaxed in manner, but he has gained his expertise after years of experience supported by his own natural talent. Wall paintings, thousands of years old, depicting clay preparation, throwing, and firing, have been discovered in Egypt, where it is estimated that the potter's wheel was in use four thousand years ago.

The use of the wheel spread slowly, but it is not known who spread the knowledge. In the Far East, China, Japan, and Korea were using the wheel by 3500 BC, and by 1500 BC most of the countries of the Middle East were producing highly skilled wares. In Europe, knowledge of the potter's wheel was gained from potters sent by the Romans to regions throughout their empire in Europe.

Many potters prefer to work without the wheel. They combine various methods to produce the results they are seeking, often resulting in extremely innovative pieces. Plaster of paris or dehydrated gypsum, when

combined with water, forms a porous material before it sets hard. It is often used as a mould for slip casting clay and as a press mould in creating ceramics. In the method of using clay called Extrusion, the clay is passed through a die, or a pug mill or wall box, under pressure. The production of handmade objects allows the potter considerable scope in the choice of design. The pot surface is burnished to smooth and waterproof the piece. A coat of paint may be added to give it a shine. Methods of decoration include piercing, incising, fluting, faceting, and impressed designs. Other decorative processes include: roulettes, sprigging, variations of dish moulding, agateware, laminating, inlay, slab inlay, slip trailing, and sgraffito.

Colour in the body is a natural colourant in the base clay and added metal oxides of commercially prepared stains. White or pale clays are best for the use of brighter colours but large quantities of oxides are needed to produce darker shades. Staining may be done by weighing clay and colour in dry form. Most colour in clay work is provided by oxides, dioxides, carbonates of metal. The oxides can be applied to either hard, damp, or dry clay, to fired biscuit ware or to the glazes before the second firing. Lustres are fine metal coatings which have been fired in reduction atmosphere. Commercially produced lustres can be painted, sponged or airbrushed on to the surfaces. Enamel colours require special handling.



Figure 79

Majolica is sometimes called 'onglaze', because the colour is applied on an object which is unfired and unglazed. The pigment is best used finely ground with water and a little of base glaze.

Underglaze is the application of oxides and pigments to a biscuit-fired pot with a transparent or semi-opaque glaze covering. This technique was used for the renowned and exquisite Chinese pottery of the Ming period of the fifteenth century.

To the beginner, glazing pottery presents a challenge as there are so many materials with different properties to be understood. In simple terms, glaze is normally composed of three basic ingredients: *silica*, the glass forming element, a *fixing* agent, and finally *alumina*, which acts as a stabilizer to bind the glaze. A good understanding of the temperature of the melting point for glazes is a must. There are a variety of glazes such as the alkaline glazes first used by the Egyptians, Egyptian paste, low-firing glazes, high-firing glazes, lead glazes, ash glazes, reduced and oxidized glazes, raku and enamels. The glaze can be applied by pouring, painting, dipping, or spraying.

A most important skill to master in the process of ceramics is use of the kiln. The manipulation of the temperature to create the physical and chemical changes in the clay by the firing of the object will provide the ultimate test of your new-found skills.

Nowadays electric kilns are commonly in use. Modern kilns also include gas, oil, and wood burning kilns, and modern ceramic fibre kilns, but before their invention, a number of intriguing methods were employed to fire clay. The most primitive were the bonfire or open pit method. Others were known as updraft and downdraft kilns, Japanese climbing kilns (built on a slope), and the Oriental kiln, all particular methods invented by the Chinese, ancient Greeks, Romans, and Europeans.

Basic firing techniques include:

Raw Firing

This is a method in which it is possible to decorate and glaze raw clay objects so that their conversion into ceramics may be completed in a single firing. Here the heat is increased slowly till the required result is achieved.

Biscuit Firing

This is the first firing in the kiln of the raw clay after the pots are dried.

Glaze Firing

The temperature of different glazes indicates at which point the glaze will mature.

Tools required for firing include long-handled tongs, heatproof gloves, sometimes a protective mask to cover the eyes.

Clay Bodies

The following are clay bodies used in ceramics: Terracotta (red clay), white earthenware, stoneware, porcelain, bone china, raku, black clay, Egyptian paste. Clay bodies and their firing temperature:

Earthenware (Terracotta)

Red in natural state and after firing. 1000°C–1080°C (1830°F–2150°F)

Earthenware

White, pink, cream, in natural state and when fired. Other colours when stains or oxides have been added (mainly to white body). 1060°C–1180°C (1940°F–2150°F)

Stoneware

Grey in natural state, buff coloured when fired. 1200°C–1300°C (2340°F–2460°F)



Figure 80

Porcelain

White to cream when raw, white when fired.
1280°C–1300°C (2340°F–2460°F)

Bone China

White to cream when raw and when fired.
1240°C–1200°C (2260°F–2300°F)

Raku

When fired becomes clay body by mixing
grog in it. 900°C–1200°C (1650°F–2190°F)

Black Clay

Most black earthenware bodies are made by
adding 5 per cent black stains or manganese
oxide to a red clay. 110°C–1150°C (1950°F–
2000°F)

Egyptian Paste

This is a specially prepared body in which the
glaze is supplied by soluble salts of soda,
which are drawn to the surface of the ware as
it dries. 900°C–1060°C (1800°F–2030°F)

Glazes

Earthenware Glazes

Most glazes falling into the firing range of
950°C–1150°C are classified as earthenware
glazes.

Stoneware and Porcelain Glazes

Glazes for use over 1200°C are usually
classified as stoneware glazes. Most of these
glazes work well on both porcelain and
stoneware bodies but will give different
results.

Raku Glazes

Glazes for Raku melt at around 900°C to
1000°C and are usually based on the use of
fritted materials such as lead or borax which,
with small percentages of clay, give suitable
glazes. Other low-temperature materials such
as colemanite are equally useful, though such
glazes usually take much longer to melt and
mature in the Raku kiln. Raku is not often
used for making functional ware.

Salt Glaze

Salt thrown into a reduction kiln at high
temperature reacts with the surface of the clay,
depending on its iron and silica content, to
form a thin layer of glaze. Some glazes work
well in this atmosphere, reacting with the salt
to give rich effects. To give a smooth
covering, glaze is usually applied on the inside
of lidded jars and tall pots, where the salt
vapours cannot reach.

14 GLASS



Figure 81: Painted antique Chinese snuff bottle.

It is difficult to imagine our day-to-day life without the many items of glass that surround us. Though the origins of glass are lost in the mists of time, it is generally supposed to have developed from experiments conducted with glazes in Mesopotamia about 3000 BC. The earliest known glass pieces are found in the form of beads, pendants, cylinder seals, and inlays, the colours generally blue or green. Originally, glass pieces were used as substitutes for precious and semi-precious beads and stones. The objects were made by cutting the glass into the required shape and then polishing. The production of the glass pieces generated a highly successful Mesopotamian glass industry.

Glass is made from sand melted with a flux such as soda or lead oxide. The resulting mass, known as *metal*, is really a liquid which is a solid in normal temperatures.

Similar to glass, *faience* is a mixture of quartz sand and an alkaline substance covered in a vitreous glaze. Once mixed it can be moulded, cast, or even thrown on a wheel. *Faience* was commonly used in Egypt until the New Kingdom was established with the 18th Dynasty (c. 1540 BC), when the Pharaoh Tuthmosis III returned from war with Syria with Asian glass makers in his train.

During the first century BC, it was discovered that glass could be blown. The industry expanded and changed dramatically as a result. The new process was adopted in the Mediterranean region and within a hundred years, glass vessels were being produced in almost all areas of the Roman Empire.

In essence, glass blowing is a simple process, but it requires great dexterity and expertise. Usually a team of four assistants will work with a master blower or 'gaffer', as he is called. The gaffer first gathers a gob of molten glass from a pot in the furnace (where the glass is in molten form) on the end of the blowpipe (an iron pipe about 1.5 metres long). After slightly inflating the gob he manipulates it to the required shape by blowing and swinging it, rolling it on a flat surface, or shaping it with tools. The blown up piece may be reheated and repeatedly blown up till the required shape is achieved. It is then removed from the blowpipe and put on a rod with a seed of glass so that the neck and the rim can be finished and handles joined if desired. Finally it is placed in an annealing oven. Annealing is a process through which all glass vessels pass to enable the finished, hot object to cool slowly and evenly. The annealing oven reduces any internal stresses that might have built up during its manufacture and would otherwise cause it to crack once cooled. It is essential to cool the piece very gradually and evenly by leaving it in the oven throughout the day.

The most spectacular examples of luxury glass of the early Roman Empire are those made of *cameo glass*, decorative 'cased' or 'flushed' glass with two or more different coloured layers. The layered colours were then cut away to allow the design to stand out in

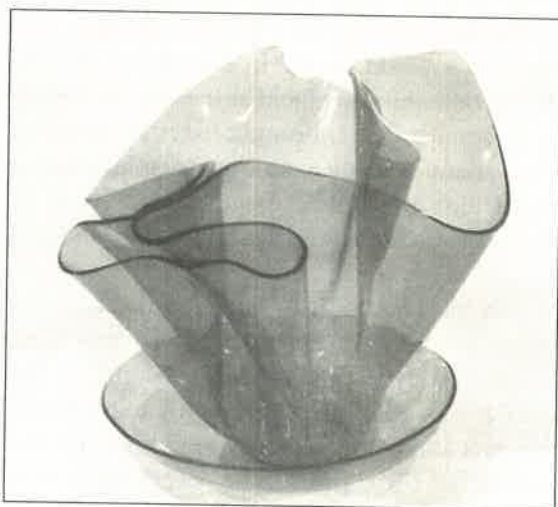


Figure 82: Glass form made with slumping technique.

relief. A well known piece created in this fashion is the famed antique known as the Portland Vase. Possibly made in Rome during the last quarter of the first century BC, the Portland Vase was made for the emperor Augustus. A dark blue cameo amphora with an opaque white overlay, it was carved with scenes from Roman mythology. Glass blowing revolutionized the industry. Blowing into a mould meant that quantities of identical bottles could be produced. A gather of glass (glass melted by heat) was blown while attached to a blowpipe into moulds made of wood or iron. Early decorative glass techniques included cutting, engraving, and the addition of gold and paint. Centuries of refinement and experiments led from the first simple glass beads, to the most beautiful clear, rock crystal pieces.

During the fifth to seventh centuries AD, glass vessels produced in Europe were pale green and bubbly, and the majority of objects made during the Dark Ages were plain. Luxury glass started being produced from the eighth century, and by the eleventh century, the most admired vessels were those with bright colours and with gold leaf attachments. Between the decline of Roman glass making

and the emergence of the Venetians as the world's leading glass makers at the end of the Middle Ages, the finest glass vessels were made in Islamic countries such as Egypt and Iran. Islamic glass makers inherited the techniques of forming and finishing from the Romans and Sassanians. They developed these techniques, rediscovered lost Roman techniques, and made one great discovery, the manufacture of lustre. Lustre painting is the technique of producing an iridescent effect on the surface of the glass by using metallic pigments that are fired in a reducing atmosphere. In the thirteenth and fourteenth centuries, glass makers in Syria and Egypt decorated drinking vessels, mosque lamps, and other objects with gold and enamel.

In the twelfth and thirteenth centuries, the Byzantine glass makers continued to make their traditional coloured cubes for mosaics, and they also produced vessels with gilded and enameled decorations. In western Europe, the most significant development was the extensive use of richly coloured stained glass windows. By the beginning of the fourteenth century, glass makers in Italy and the Upper Rhine had succeeded in producing colourless glass by carefully selecting the raw material and then decolourizing it with manganese. During the



Figure 83: Tiffany-style lampshade set in coloured cut glass pieces, Rukhsana and Saif-ul-Haque.

earlier part of the fifteenth century, glass production increased but the advancement of technology was static. A major development occurred in the second half of the century when the Venetians perfected a formula for colourless *cristallo*, a type of soda glass made with the ashes of a salt water marsh plant, *barilla*, which, with the addition of manganese oxide, produced a glass that resembles rock crystal. The Venetians established themselves as the leading producers of luxury glass, and their influence on the glass industry was long lasting. The wealth of Venice enabled it to import all manner of fine goods, including Chinese porcelain, which was imitated in glass and exported far and wide during the Renaissance period.

The eighteenth century witnessed many changes in both the decorative aspects and in metal itself. The ancient system of cutting was reintroduced, incorporating the use of gem cutters on the newly developed, stronger glass. For the first time, large sheets of glass for windows and mirrors of unflawed glass were being produced.

As the industrial knowledge spread to Germany, a new innovation, the ability to decorate glass by cutting it, allowed plate-glass makers to expand into other fields. Among the earliest of their products were Chandeliers. These were produced with reflecting mirrors in the first half of the eighteenth century.

By the nineteenth century, Britain had become a world leader in the glass industry. The great exhibition, held at the Crystal Palace in London in 1851, brought together products from many foreign countries, displayed in a metal and glass structure that was itself an example of the new technologies. By the end of the century, the impetus had moved to North America and the Continent. Art Nouveau, a completely new style, emerged, influenced by the opening up of Japan to the west and by the general antipathy felt towards the mechanical production methods of the industrial revolution. The excitement and technical developments of glass by Emile Galle, Tiffany, and others was to survive the First World War and subsequent Depression. Art Nouveau was replaced by a more simplified approach to design known as Art Deco. Across the Atlantic, the 1960s witnessed a new revolution in glass making and the rise of the studio artist, producing technically aesthetic, innovative sculptural works.

GLOSSARY

Textile

Acrylic A man-made fibre produced from 1950 onwards, followed by Dacron and Lycra fibres.

Batik A means of colouring cloth by using wax. Integrally linked to religious ritual in Java, batik was used in India and China well before 1200 BC.

Carding The process of straightening the fibres prior to spinning.

Cartwright The man who invented a power-loom in which the shuttle was moved across the warp mechanically.

Cashmere A fine wool made from goat's hair.

Cotton Developed in the Indo-Pakistan subcontinent and Peru in approximately 3000 BC. It belongs to the protein family.

Cloth printing works They were function in Europe by the eighteenth century.

Damask Damask is made from cotton and is very much in demand for high class table napkins and cloths. Damask was first produced in Damascus, Syria in the thirteenth century. They are elaborately patterned woven fabrics produced on Jacquard looms.

Designs' prints Cloth from which costumes were made decorated with orderly repeated designs in Egypt and South American countries of Peru and Mexico by 1500 BC.

Embroidery Along with weaving of tapestry, damask and silk at its height in Europe AD 1300-1600.

Fabric printing It began in European countries about AD 1100.

Flax First used in 5000 BC in Egypt to make linen-like fabrics.

Gouache and Tempera paints They are used for textile design, are water-based and opaque which means one colour can be applied over another without bleeding or changing. A third colour will form when mixed together.

Industrialized roller printing It was developed by Thomas Bell in England in 1785.

Jacquard A Frenchman who mechanized the weaving of complex fabrics by controlling the loom with a series of punched cards that allowed warp threads to be lowered or lifted in the correct sequence. Thousands of punch cards were used for elaborate fabrics.

Nylon It was developed (1930) in USA.

Patterned cloth It was printed in red, black, and powdered gold in Persia by AD 500.

Pile Pile weaves are used to produce corduroy, plush, velour, and velvet. The pile in such fabrics is created by cutting some of the threads after weaving, so that they stand out on the fabric.

Polyester It was discovered in USA, in 1941.

Rayon 1929, age of synthetic chemical fibres begins. Rayon is perfected by 1929.

Resist This method of textile printing was developed in UK in 1802.

Satin The pattern of weave can be altered to produce different effects. Satin gets its glossy appearance because the warp threads are interwoven not with every weft thread but every fourth or fifth.

Shuttle Part of the loom.

Silk First cultivated and woven in 2640 BC. Production at its height in 1400 BC.

Twill Weaves used to produce gabardine, serge, and whipcord.

Weft and Warp Separate yarns are used to make horizontal and vertical weave. The warp runs along the length of the cloth while the weft runs crosswise alternately under and over the warp threads. The weft is carried by a hollow object called the shuttle.

William Morris His designs, prints, fabrics, and wall paper influenced the Art Nouveau movement. Today Morris is considered the forerunner of modern design in textiles.

Z Twist A variation of plain weave.

Ceramics

Absorbency The rate at which a body of material (clay unfired and fired, plaster, wood, stone, etc.) will soak up water.

Ash Residue of burnt wood or vegetation used in preparation of high-fired glaze.

Alkali The flux used in certain type of glazes.

Alumina One of the three main components of glaze, the others being silica and flux.

Ball clay A fine plastic secondary clay containing organic material.

Ball mill A mechanically driven revolving drum, which grinds powders finely.

Basalt ware A high-fired, unglazed body coloured with oxides.

Bat A tile made from highly refractory material for kilns.

Bentonite Clay-like material which adds plasticity to clay.

Biscuit or bisque Clay which has been fired to sufficient hardness, changing it from dried clay to a hard porous state before glazing.

Bone china A type of porcelain china.

Burnishing Smoothing or polishing a clay or slipped surface with smooth stone.

Calcine To heat ceramic materials in order to drive away carbon dioxide gases.

Calcium Carbonate Chalk in the form of whiting, limestone.

Celadon Stoneware and porcelain glazes containing iron.

Chattering A pattern of uneven bumps on the surface of a turned pot, caused by objects present in the clay.

China clay A pure white, primary, non-plastic clay.

Damp box A metal or plastic lined box or cupboard which will retain moisture, allowing the storage of unfinished work.

Delft Tin-glazed, earthenware pottery with onglazed painted decoration. Derives its name from Delft in Holland but originates from Middle-Eastern majolica.

Down-draft kiln A kiln in which heat is forced upwards from the fire box and down through the interior of the kiln through flues at the base of kiln.

Earthenware Lower-fired pottery in which the body remains porous under the glaze.

Enamels Low-firing colours incorporating glaze which are painted onto an already glazed surface.

Fireclay A high firing refractory clay used for making bricks for furnaces and kiln shelves.

Flux Glaze materials which reduce the melting point of a glaze or glass and dictate the final gloss and colour.

Frit A process of heating, rapid cooling, and grinding of materials which are normally insoluble or toxic.

Glaze A mixture of silica, alumina, and flux applied by brushing, pouring, dipping, or spraying onto the surface of a pot to make it impervious to water and at the same time to create a decorative pleasing quality when it is fired.

Grog Ground fired clay or sand in powder form, added to clay to provide openness to texture and to reduce shrinkage.

Gum arabic A natural gum mixed with glaze or oxide to prevent smudging and to bind colour to body before firing.

Inglaze Oxides and colourants that are painted onto and then fired into a glaze to combine with it.

Kaolin Pure white clay, known as china clay.

Majolica Soft earthenware covered in a tin glaze with painted decorations.

Primary clays Those which have been formed on the site of the rock and have not washed away.

Raku Low-fired earthenware, made of grogged open clay, covered with low melting glaze and oxides.

Secondary clays Those removed from their source of origin by erosion, collecting other minerals en route.

Wax resist A method of decorating by painting wax onto a surface which will resist water-bound mixture placed over it.

HISTORY OF ART

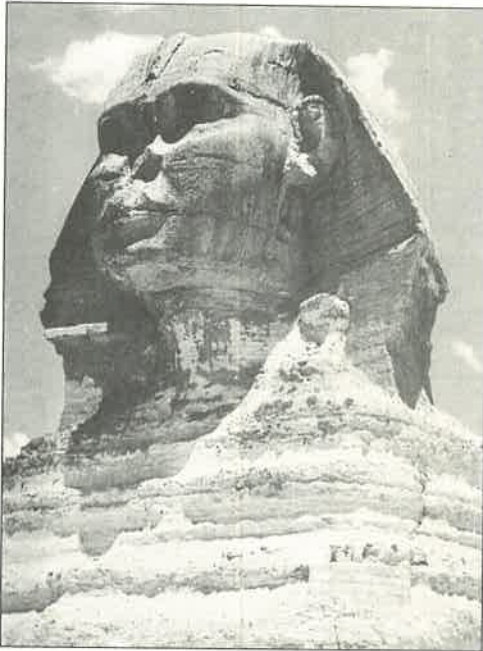


Figure 84:
The Great Sphinx
(c. 2570–44 BC).

Figure 85: Pablo Picasso, *Tête de femme aux cheveux flous*, aquatint-etching (1947).



Figure 86:
A Physician Preparing Medicine,
School of Baghdad (about 1520).

15 WESTERN ART

Old Stone (Palaeolithic) Age

The earliest evidence of tool making dates back two million years. Pre-historic man discovered that certain sticks and stones were more useful for his purposes than others. He began to connect form to function. The next step was to try making tools by chipping them into shape. Stones chipped to form working surfaces became the first primitive implements. With the passage of time, choppers and hand-axes were chipped and smoothed into multi-purpose tools. These developments were the first signs of the earliest craftsmanship. With this evidence we enter the period known as the Palaeolithic Age.

Painting the body with red ochre and sculpture were the first art forms practised by pre-historic man. In the recently discovered Chauvet cave in south eastern France are to be seen the earliest artworks known to us, paintings believed to have been done about 30,000 years ago. Fierce panthers, lions, rhinos, bears, and mammoths are portrayed with extraordinary liveliness, along with bison, bulls, horses, birds, and human handprints.

The most famous of early sculptures is a 4½ inch figure carved from limestone and found in Austria. Thought to be between 25,000 and 30,000 years old, the exaggerated contours of the body have caused it to be classified as a fertility symbol. Known as the Woman of Willendorf, the tiny figure has no defined face, and the 'head' is covered with a curved design simulating curls. (An ivory statuette of a man 17 inches high is believed to be of the same period.)

(During the Palaeolithic age, men were hunters, artists, and mystics. They developed a language for communication and a religious, magic evoking art, arising from man's need to dominate the animal kingdom. Artists engraved or painted pictures of animals on cave walls by the light of tiny lamps made from stone gourds filled with animal fat and a wick of moss. Chunks of red and yellow ochre were used for drawing. These same ochres were ground into powders. Sometimes the artist blew them onto the walls through hollow bones, or he mixed them with animal fat and used them as paints. Brushes were made of reeds and bristles, and reeds were also used to trace outlines of figures. Sharp stones were used to smooth walls, and sharpened flints used for engraving.)

The paintings in the caves of Lascaux, in the Dordogne region of France portray bison, deer, horses, and cattle, painted with profusion over walls and ceilings. Painted approximately 13,000 years after the Chauvet cave paintings, they retain the same uncanny sense of life and movement. It is interesting to note that in later cave paintings, all the fiercest animals have disappeared, perhaps due to their inability to adjust to the changes of climate and environment. (Besides the large scale cave art, Paleolithic people also produced small, hand-size drawings, and carvings, and beads in stone, horn, and bone skilfully fashioned with flint tools.)

Middle Stone Age (Mesolithic)

About 20,000 years ago the world suddenly became warmer. Glaciers began to melt,

creating lakes and rivers across the earth. There were separations of land masses, trees took root in the soil, the landscape changed. As the climate moderated, a group of people known as Cro-Magnon began to replace Neanderthal man, who had been dominant for 100,000 years.

Men left their caves to live in the open. Food sources were the wild creatures of the woods and waters which Mesolithic man hunted with bows and arrows and baited traps. They studied the migratory habits of fish and made canoes from single logs hollowed out with axes and fire. They dried surplus food for future use and learned to store seeds, nuts, fruits, and berries. The first artifacts were roughly fashioned weapons of wood and stone, which they used for hunting.

The New Stone (Neolithic) Age

Around 8000 BC, one of the most important achievements in human history began in the Near East, encompassing the countries now known as Jordan, Turkey, Iran, Iraq, Lebanon, and Syria. This was the domestication of animals and the cultivation of food grains. Palaeolithic people had lived as hunters, collecting food where they found it and always at the mercy of forces they could neither control nor understand. With the ability to ensure a continuing food supply through their own efforts, people now settled down in permanent village communities. Specialized crafts began to develop, such as pottery for storage and cooking, metal tools, weaving and dyeing for clothes. A new discipline and social order entered people's lives. Excavations have uncovered stone implements of great technical refinement and beauty as well as a vast variety of clay vessels decorated with patterns and motifs. Shaped and decorated vessels were produced in every society. The Vinca culture of Yugoslavia produced numerous fired clay

figurines. Related cultures produced pots shaped like people, animals, or even houses. Eastern Neolithic pottery was often painted with intricate geometric designs.)

The Neolithic architecture which developed on the island of Malta (3600–2500 BC) included temples built of large blocks of stone. In later temples, facades were shaped and carved with designs. Many of the walls were covered with painted plaster.

The most impressive Neolithic buildings are megalithic (large-stone) monuments. Some of the hundreds of stone circles erected in Britain, Ireland, and France contain astronomical alignments, including the mystic circle of Stonehenge.

The 'earth art' of the prehistoric people of North America, known as the Mound Builders, involved considerable effort. Varying greatly in shape and purpose, they range in date from about 2000 BC to the time of the Europeans' arrival in the late fifteenth century AD. Of particular interest are the mounds in the shape of animals presumed to be tribal totems of the peoples who produced them.

(As cultures grew and trade amongst groups of people expanded, the need to keep records arose. In Mesopotamia, now Iraq, the first practical record keeping method and the forerunner of written language developed. There evolved a system of clay tokens in the shape of various animals, plants, or objects to account for worldly goods and to use for exchange.)

The Bronze and Iron Age

Developments in agriculture and storage ensured that the Neolithic people had more leisure time and opportunity to develop their mental capacities. They learnt to combine tin and copper to produce bronze, and later, how to work with iron. In the second millennium BC, the development of metal work gave rise

to cast bronze weapons and delicately engraved jewellery.

Egypt 3100 BC

The Old Kingdom

The history of Pharonic Egypt begins around 3100 BC with the unification of Upper and Lower Egypt under a king known to history as Menes. In all thirty dynasties ruled Egypt, the first founded by Menes, the last by Alexander the Great's General Ptolemy in 323 BC.

After some four hundred hardly recorded years, Egypt emerged in 2700 BC with an organized central government, a written language, technological skills, a national style of art and architecture, and the world's first calendar of 365 days. Their script at that time was a picture writing system that utilized both pictographs and ideographs. This type of writing was known as hieroglyphic. While repairing a fort in the Nile Delta, one of Napoleon's soldiers found the famous trilingual Rosetta Stone in 1799 (now in the collection of the British Museum). Thanks to this lucky chance, scholars were able to work out the basic principles of the script, thus unfolding a recorded history of 4000 years.

A work of art that is also a historic document is a carved slate known as The Palette of Narmer (c. 3150–3121 BC). This commemorates the victory of King Menes (Narmer) over Lower Egypt. It is the oldest known image of an historic personage identified by name, carved on a votive palette of crystalline rock, twenty-five inches in height. It can now be seen at the Egyptian Museum, Cairo.

Very little has survived of the ancient palaces and cities along the Nile. Our knowledge of early Egyptian civilization has been acquired from the tombs and their

contents. Religious customs dominated life in ancient Egypt, and religion influenced art. Objects revealing the tastes of affluent Egyptians were found in the tombs—decorative pieces of jewellery and glass, pottery, and furniture, while wall paintings give us a good idea of Egyptian life. They often show scenes of fishing, hunting, reaping the crops, and food preparation.

Egyptian artists combined both frontal views and profiles of their subjects. The shoulders and eyes are portrayed as seen from the front, while the head and legs are seen from the side. Egyptian sculpted 'portraits' are life size pieces which were carved from blocks. After marking the faces with a grid, the carver drew the front, top, and side views of the statue on each side, then worked inwards until these views met. It is believed that the figures were originally painted, the eyes inlaid with shining quartz to add to the lifelike appearance. Egyptian artists produced a vast amount of sculpture and paintings. Their supreme innovation was the use of stone in architecture.

The Great Sphinx, carved from a live rock standing next to the valley temple of the pyramid of Khafre at Giza, is considered an even more impressive embodiment of divine kingship than the pyramids themselves. The king's head, rising from the body of a lion, reaches a height of sixty-five feet.

The Middle Kingdom

At the end of the 6th Dynasty, Egypt entered a troubled period that was to last almost 700 years. During this time, power lay in the hands of regional overlords who revived the old rivalry of Upper and Lower Egypt. Soon after the end of the 12th Dynasty, the weakened country was invaded by a western Asian people known as the Hyksos.



Figure 87: Woman of Willendorf (Austria), Limestone, 4 $\frac{3}{8}$ inches, c. 30,000–25,000 bc.



Figure 88: *The Virgin and Child with Saint Anne and Saint John the Baptist*, Leonardo da Vinci.

Figure 89:
The Ambassadors,
Hans Holbein the Younger.





Figure 90: *The Fighting Temeraire*, Joseph M. W. Turner.



Figure 91: *Doña Isabel de Porcel*, Francisco de Goya.

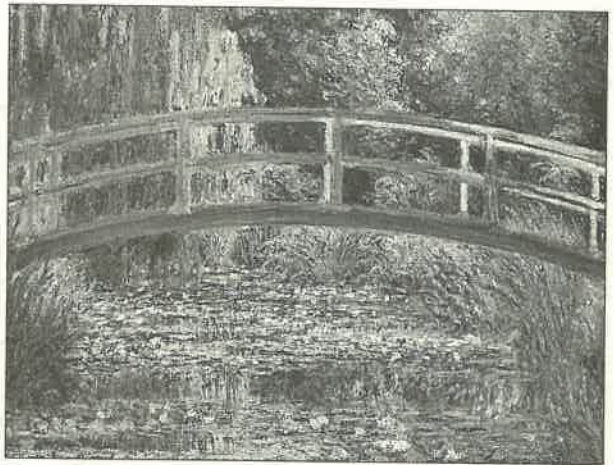


Figure 92: *The Water-lily Pond*, Claude Monet.

The New Kingdom

The period known as the New Kingdom began in 1800 BC. It was then that the rulers began to acquire the title 'Pharaoh', a word meaning great house, referring to the king's palace. History's first great woman was one of the pharaohs of the 18th Dynasty, Queen Hatshepsut, who seized the throne on the death of her husband and was instrumental in restoring Egypt after one hundred and fifty years of barbarian occupation.

Akhenaten (Amenhotep IV, c. 1348–1336 BC) was a revolutionary figure who attempted to place himself at the head of a new, monotheistic faith. His artistic tastes were equally revolutionary as he consciously fostered a new style of art and a new concept of beauty. His own portraits appear as caricatures with haggard features and over-emphasized outlines. One of the great art beauties in the world was produced during his period, the head of his wife, Nefertiti, carved from limestone and painted. The perfect face, destined to live through history as an ideal of feminine beauty, portrays the subject past her first youth. The skilful fashioning of the contours portrays a maturity that in no way detracts from the classic loveliness of the bone structure and elegant tranquillity.

The old religious traditions were restored immediately after Akhenaten's death, though traces of his artistic innovations remained. His successor, Tutankhamun, owes his fame to the fact that his is the only royal tomb to have been discovered almost intact in our times.

The Hittites, who had conquered North Central Asia Minor sometime before 1900 BC began to threaten Egyptian dominance in Syro-Palestine, and in 1286 BC Rameses II of Egypt fought a major battle against them at Kadesh and lost.

Aegean Art

North of the island of Crete there lies a scattered group of small islands, the Cyclades, and a little further on is the mainland of Greece facing the coast of Asia Minor across the Aegean sea. Archaeologists use the term 'Aegean' to refer to the civilizations that flourished in this area in the third and second millennia BC before the period of Greek civilization proper. Three of these cultures were closely inter-related though distinct from each other: the Cycladic, the Minoan from the islands of Crete, and the Helladic from the Greek mainland.

From approximately 2800 BC the people who inhabited the Cycladic islands often buried with their dead marble sculptures of a female figure. The sculptures shared a distinctive shape, a flat wedge-shaped body, columnar neck, and oval face. The arms were folded at the waist and the face was featureless except for a long, ridge-like nose. A version, dated approximately 2500 BC can be seen at the Ashmolean Museum in Oxford, UK. It is extremely elegant, with subtly rounded outlines at the abdomen and the knees. Standing thirty inches high, it is a sophisticated departure from the bulbous, heavy-bodied type of female representation of the earlier ages.

The two great Aegean civilizations which flourished in the area were the Minoan and the Mycenaean (or Helladic), which were not discovered until the nineteenth century. About 2200 BC the first palaces began to be built on the island of Crete. The later palaces of Knossos and Phaistos are the most notable. A script, as yet undeciphered but referred to as Linear 'A', was impressed on unbaked clay tablets and scratched on vases.

The Mycenaeans, who replaced the Minoans as the dominant power in the Aegean from 1450 BC, lived in cities with great palaces throughout mainland Greece. Like the Minoan

palaces, the Mycenaean palaces were full of artworks and treasures. Walls were painted and luxury items were imported from other countries. The geometrical precision and grandeur of their royal tombs amazed archaeologists. The Tomb of Agamemnon or 'Treasury of Atreus' surpassed them all. Before the end of the thirteenth century BC, the region was invaded by unidentified marauders. The civilization ended and, with it, the art of writing.

China

One of the early great civilizations grew along the Yellow River. There, bronze had been made well before the second millennium BC. Copper and tin for alloy were readily available, kilns had been developed for firing pottery, so the technical means for smelting were at hand. During the Shang (1766–1122 BC) and Chou (1028–256 BC) periods, bronze was the medium for ceremonial vessels and domestic items. Metal workers of the west or Near East fashioned their bronzes by casting in packed sand or by using the lost-wax method. Chinese artists sought vitality rather than naturalism, decorating bronze vessels with creatures neither human nor animal. They created hybrid figures assimilating claws, wings, beaks, scales, and fur.

Bronze, marble, and stone were used for sculpture, and were used during the Han dynasty in their burial rituals. Buddhism entered China by way of India and introduced naturalism in art. Porcelain was invented during the T'ang period (618–906), and by the Ming period (1368–1644) was admired throughout the world.

Persia

Cyrus the Great established the largest empire

the world has ever seen. By the end of the sixth century BC it stretched from the Oxus and Indus rivers to the Danube and beyond the Nile. It encompassed all the former Assyrian territories as well as all of Anatolia, (now Turkey), Bulgaria, much of northern Greece, Egypt, and Libya. The Achaemenid dynasty, named after Cyrus's ancestor, continued to reign over this vast area until it was conquered by Alexander the Great in 332 BC.

The finest artistic achievements of the Achaemenid dynasty were in architecture. Much use was made of tall columns, some with lion-headed capitals in stone. These were used as porticoes and to support the roofs of large halls. The palace built by Cyrus resembled the encampment of a nomad chief created in stone. Several buildings were loosely grouped together but at some distance from each other in a vast enclosure of parkland and gardens. This was surrounded by a 13-foot-thick wall and could be entered through a monumental gatehouse. Black and white limestone slabs were used to create precise, alternating patterns.

Darius, the son of Cyrus, ordered the building of a new capital, Persepolis, which was begun in 518 BC. This splendid city was an imperial symbol, a setting for ceremonies at which tributes from every part of the empire were presented to the 'Great King, King of Kings, King of Persia', as Darius and his successors were titled. Important tombs were cut into cliffs, their facades enriched with figures carved into the rock. The most imposing is the tomb of Darius at Naksh-e Rostam near Persepolis. It is crowned by a relief of a king, bow in hand, standing before a fire altar.

Darius I (c. 521–486 BC) introduced coinage as well as legal and postal systems, and had a canal dug linking the Nile to the Red Sea. During the reign of his successor, economic decline and conspiracies weakened the kingdom. Persepolis fell to Alexander the Great

in 330 BC and the last Achaemenid ruler, Darius III, was murdered in the same year.

The Ancient Classical World

Greece, Etruria, and Rome were the three great civilizations that made up the ancient classical world. It began with the Greeks and flowed through the Etruscans and the Romans to establish the foundations of European civilizations.

Greece

After the long period of poverty that followed the collapse of the Mycenaean civilization, city states emerged in many parts of the Greek speaking world at the beginning of the Archaic period, during the eighth century BC. A city state usually contained an agricultural territory and a walled town centre. The Archaic period was followed by the Classical period (c. 500–338 BC), during which the Greeks made radical experiments with political, artistic, and philosophical ideas, all of which had a lasting impact on western civilization. About 1000 BC, a Greek speaking people called the Hellenes settled on the Greek peninsula and neighbouring islands. With the expansion of population, separate city state settlements came into being, such as Athens, Corinth, and Sparta.

The Greeks were great sailors and traders who established new colonies. They never constituted one nation but shared a common language and a common culture. They gave western civilization its first great writings on philosophy, science, law, history, and literature. The epics written by Homer, the *Iliad* and the *Odyssey*, the philosophies of Socrates, Plato, and Aristotle, tragedies, comedies, and poetry were part of their legacy to the world. Greek art forms the foundation of western European artistic tradition. As no

frescoes have survived, the quality of Greek art can best be appreciated from the beautiful ceramic vases that remain. The artistic development of the vases can be divided into four periods:

1) Geometric period (1000 to 750 BC), of simple geometric designs; 2) An Oriental period (725 to 550 BC), with Middle Eastern motifs; 3) The Black period, black figures on a red surface; 4) The Red figure period (530 to 475 BC), red figures on a black surface. By studying these vases, floor mosaics, and late Roman frescoes, one gets a general idea of the lost Greek paintings. Artists had mastered anatomy and foreshortening but never understood perspective.

The oldest existing examples of Greek stone sculpture and architecture show that Egyptian influences were well assimilated. Greek sculptors created the earliest known large, stone, free-standing images of the human form. The sculptor separated the arms from the torso and the legs from each other, cutting away every bit of unwanted material. The earliest statues of youths called *kouros* (boys), were liberated in a way that endows the figures with a spirit basically different from that of the Egyptian figures. Female statues, called the *kore* (maiden), show wider variations than the *kouros*, posing a problem of how to relate the figure to the covering draperies. Classical Greek sculpture paid homage to the beauty of athletes, the combination of a healthy mind in a healthy body being the ultimate ideal. The sculptured forms of victorious athletes were portrayed with such reverence that they were sometimes mistaken for gods.

In 359 BC, a previously backward kingdom in northern Greece, Macedonia, became important when Philip II assumed the kingship and reorganized the army and the kingdom. By a combination of force and diplomacy, he achieved a position of dominance in mainland Greece. Philip was assassinated in 336 BC,

leaving his son Alexander to carry out his plan to invade Persia.

The Celts

The Celts were a feudal society with a warrior aristocracy ruling a peasant population. The nomadic Celts settled in many lands from Spain to Asia Minor, and their modern day descendants include the Irish, Scots, and Welsh of Britain. The first major settlement of Celts in Central Europe appears to date from about 850 BC, in the Iron Age.

The smith was highly regarded in Celtic society. He produced the iron swords, ploughshares, and axes vital to farming and war, and provided the warrior aristocracy with beautifully decorated helmets, shields, and jewellery. Celtic designs were abstract patterns of scrollwork and bold curves.

The Etruscans

Little is known about the origins of the Etruscans. They settled in Italy around 1300 BC, and by 700 BC commanded a number of city states stretching from the river Tiber to the river Po. Through the Etruscans, the Greek alphabet and culture spread to Rome. In fact, many accomplishments attributed to the Romans actually originated with the Etruscans, for example, paved streets, sewers, etc. From their art, one can imagine them as an exuberant, artistic, and highly civilized people. It was their custom to bury their dead in Greek urns, and for this reason most of the Greek vases preserved today were found in Italy. The Etruscans decorated their tombs with painted frescoes depicting scenes of banqueting, dancing, and hunting. Another art form unique to them was the sculpting of realistic portraits during the subject's lifetime, to be utilized after death as covers for funeral urns.

The Romans

In 500 BC the Romans rebelled against the Etruscans and drove them off their territories. They founded a Roman republic which lasted until 27 BC. It was a time of consolidation. Later the Romans went on to rule the ancient world, from the British Isles to the Middle East. With the expansion of their influence and power came Roman laws, engineering technology, arts, literature, and administrative skills.

In 27 BC, the Roman Empire was established with Augustus Caesar as sole ruler. From AD 27 to AD 200, the Roman Empire reached its greatest extent and influence. For two hundred years the empire was invincible as no enemy was strong enough to fight its power. During this period known as the *Pax Romana*, or Roman Peace, great civil engineering feats were achieved. There was a network of roads, bridges, sewers, aqueducts supplying fresh water to the cities, fortification walls, amphitheatres and stadiums for entertainment purposes, and public baths. Triumphant arches and columns were erected to commemorate victories.

Today we marvel at the massive size and bold conception of Roman ruins. Builders covered unattractive concrete surfaces with facades of brick, stone, or marble, or by smoothly layered plaster. Now the decorative facades have disappeared from most of the remains of Roman buildings, leaving the concrete structure exposed. Few Roman drawings and paintings of that time have survived, but of these such frescoes as were found in Pompeii, floor mosaics, and line engravings on metal mirrors, and containers, reveal how indebted the Roman artists were to the Greeks. The frescoes at Pompeii, painted before the eruption of Vesuvius destroyed the city in AD 79, were painted by Greek and Roman artists. They show a mastery of the human figure, composition, and modelling in light and shade. It appears that landscape was a popular



Figure 93: *The Hay Wain*, John Constable.

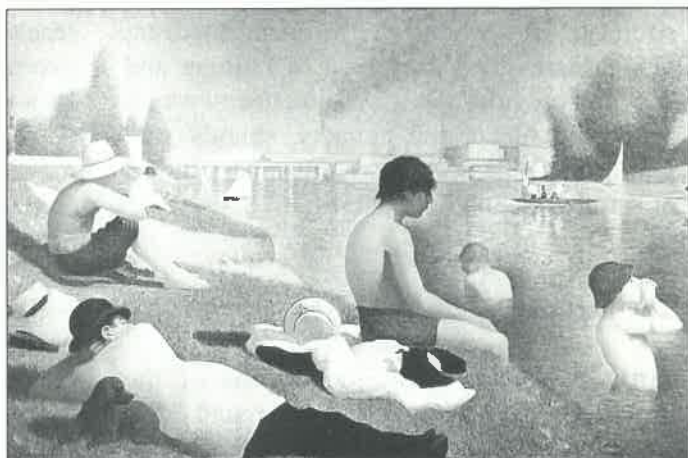


Figure 94: *The Bathers*, Georges Pierre Seurat.



Figure 95: *Mountains in Provence*, Paul Cezanne.



Figure 96: *Madonna with Child*, Michelangelo.



Figure 97: *Margareth de Geer*, Rembrandt van Rijn.



Figure 99: *Sunflowers*, Vincent van Gogh.



Figure 98: *The Graham Children*, William Hogarth.

subject painted in various styles. Some resemble the Impressionists' 'broken brush' technique. Yet the Greeks and Roman never understood perspective. A realistic tradition gives Roman portraiture its unique quality. All this changed as Christian and other influences made their presence felt. The Romans spoke Latin and adopted a phonetic alphabet from the Greeks but dropped the Greek practice of calling the letters 'Alpha', 'Beta', 'Cappa' etc. It became simply the ABC as used today.

The painted decorations of the catacombs, the labyrinth of underground tunnels outside Rome, tell us something of early Christian art. Burial rites and the safeguarding of the tombs were very important issues to the Christians, whose faith rested on the belief of eternal life in paradise after death. The painted ceilings of the catacombs portrayed domes inscribed with saintly figures, and the symbol of the faith, the cross.

The Christians were initially a persecuted group of people who formulated a language of symbols for secret communication. A change was made when Constantine the Great became emperor of Rome (324-37), and gave Christianity his special patronage. This had far-reaching effects on Christian art. An architectural setting had to be created to build churches where members of the faith could worship. Constantine devoted his time and resources to this purpose, and within a few years, impressive churches arose in Rome, and other important cities of the empire.

Constantine proved to be a strong and dynamic ruler. During his reign, he shifted the seat of imperial power to a second capital, built on the site of Byzantium, now Istanbul. It took seven years of energetic building before the transfer was officially complete. The remarkable city symbolized the new, Christian basis of the Roman state.

The art of Byzantium was above all a religious art, serious, other-worldly, and conservative. Its artists produced panel

paintings, frescoes, manuscript illuminations, ivories, enamel work, jewellery, and metalwork of high quality. Byzantine art was considered at its finest and most typical in the mosaic decoration of the churches. People depicted in the artworks were painted in a flat, remote, and visionary style.

Constantinople became the administrative centre for the Eastern division of the empire, while Rome continued to manage the West. After Constantine's death, warring factors saw the empire divided into two separate states, East and West. There were constant attacks by Huns, Goths, Vandals, and other barbarians. The Western empire finally collapsed in 476, while the Byzantine, or Eastern Empire, survived until it fell to the Ottoman Turks in 1453.

A major event during the transition from the age of antiquity to the Middle Ages, was the rise of Islam. Muslim armies conquered the Near Eastern, and African provinces from Byzantium between 642-732, and established an independent Muslim state in Spain (AD 756).

The Middle Ages

The period between the fall of the Roman Empire in AD 476 and the Early Renaissance in AD 1300 is commonly referred to as the Middle Ages. It was a period that heralded the beginning of the modern era. The age is divided into three parts: Early, or the Dark Ages, High Middle (Romanesque); and Late Middle (Gothic).

The Early Middle Ages

The art of the Early Middle Ages, or the Dark Ages, can best be appreciated in the wall mosaics of churches such as the Church of San Vitale in Ravenna, Italy, executed in AD 547.

This art had a strong early Christian/Byzantine style. It was during this period that monks and priests found themselves heir to the culture and traditions of the Romans. They kept the Latin language alive through their churches and monasteries. The monasteries became literary centres where scribes and learned monks copied religious and secular works.

The High Middle Ages

The High Middle Ages, or Romanesque period, ran from approximately AD 1000 to 1200. This was the age of the millennium, the age of faith, a time of pilgrimages and crusades. The European population began to grow, cities were established, culture and commerce flourished. It was at this time that the Universities of Bologna, Paris, and Oxford were founded. The Romanesque style, with its heavy walls, low, rounded arches, and barrel vaults, can be seen in the churches and monasteries of that time. The surviving frescoes and mosaics show the trend started by the Early Middle Ages.

The Late Middle Ages

The start of the late Middle Ages, or Gothic period, is generally taken to be around AD 1140. The Gothic period was one of outward splendour, with magnificent cathedrals and illuminated manuscripts. If the Romanesque style was earthbound, the Gothic aspired towards heaven. The Gothic cathedrals of France have soaring spires, high naves, flying buttresses, and vast expanses of stained glass windows. Gothic church interiors were filled with sculptures of saints and decorated with ornaments. Gargoyles built into the outer structure of the church were placed high up to ward off evil spirits. Sculptural elegance was the hallmark of Gothic architecture.

Renaissance

Early Renaissance (AD 1300 to 1400)

The Birth of European Painting

The ideals and institutions of the Late Middle Ages continued to dominate most of Europe, but in Italy a new, critical spirit began to find expression. The emphasis moved away from the sacred toward the individual and the natural world. The new spirit was initiated by the Humanists and it touched the visual arts also. The conventions of Byzantine art were now challenged by the more naturalistic ideals of artists such as Giotto and Duccio.

Giotto Di Bondone (1267-1337)

Giotto was a Florentine, an architect and a painter. Along with his teacher, the artist Cimabue, he is generally regarded as the founder of the central tradition of European painting. He broke away from the stereotypical forms of Italo-Byzantine art and gave his figures solidity and naturalism, creating a convincing sense of pictorial art. Giotto radically changed the course of painting by depicting religious subjects as part of the real world. He gave passion and imagination to his compositions, portraying not only the religious event depicted but also the effect on the emotions of the viewers.

The age of Giotto focuses on the beautiful gilded icons and altarpieces of the thirteenth and fourteenth centuries, the deeply religious age of early Italian art. This was the age of Duccio, the first great Sienese painter, and the Lorenzetti brothers, Pietro and Ambrogio, also from Siena, who were among the most outstanding painters of their day. Both fell victim to the plague. Pisanello was an Italian painter considered the greatest portrait medallist of his time.

This period of history was overshadowed by the devastating effects of the 'Black Death', the terrible bubonic plague which put its indelible mark on the art of the day.

Renaissance (AD 1400–1500)

The age of classical antiquity, which came to an end with the barbarian invasions that destroyed the Roman Empire, was followed by a thousand years of little achievement. The Renaissance, or rebirth, heralded a revival of all those arts and sciences that had flourished in the age of classical antiquity.

The period between the fourteenth and fifteenth centuries AD saw the flowering of the Renaissance Humanistic philosophy and learning that spread throughout Europe, replacing the medieval outlook. These developments were accepted readily by universities and places of learning. The invention of moveable type printing helped to propagate the new outlook. In spite of the turmoil of power struggles, the Humanist spirit thrived and art flourished, assisted by the patronage of wealthy families, such as the Medicis of Florence and the Sforzas of Milan, and of the Popes. Literature and poetry flourished during this period. The feudal age was over and the modern era of Europe was launched.

The fifteenth century saw great creativity in the fine arts. In Florence particularly, there was increased knowledge of anatomy, the modelling of forms with light and shade (*chiaroscuro*), and the understanding of perspective; there was a striving towards realism. All these factors are evident in the paintings of Masaccio. Though he died at the early age of twenty-seven, his work influenced other Italian artists such as Paolo Ucello, Andrea Castagno, and Piero della Francesca.

Flemish artists were as greatly admired in Italy as the leading Italian artists of the day. Their intense style of realism strongly influenced

Early Renaissance painting. The basic medium of medieval panel painting had been tempera, in which finely ground pigments were mixed with diluted egg-yolk to produce a tough, quick-drying coat of colour that did not blend smoothly. Oil, a slow-drying medium, could produce a variety of effects, from thin, translucent films (glazes) to a thick layer of creamy, heavy-bodied paint (*impasto*). Although oils were not unknown to medieval painters, the full range of effects made possible by oil was not discovered at one time by any one individual. The invention of oil painting is credited to the Netherlands painters, Jan and Hubert van Eyck.

When the first Flemish paintings reached Italy, they created a sensation. By the end of the fifteenth century, oils had replaced egg tempera for panel paintings. The new realism of the great Flemish painters spread into France and Germany. Jan van Eyck (1390–1441) worked in Holland, Northern France, and Bruges (Belgium). He was a court painter highly regarded by the Duke of Burgundy. Less is known of his elder brother Hubert, who died in 1426. It is believed that both worked on impressive large panels of religious subjects such as *The Crucifixion* and *The Last Judgement*, now in the collection of the Metropolitan Museum of Art, New York. Jan van Eyck is also renowned for portraits such as the *Portrait of Giovanni Arnolfini and his Wife*, painted in 1443, now in the collection of the National Gallery, London.

Other Flemish artists of note include Rogier van der Weyden, Hugo van der Goes, Geerten tot Sint Jans, and Hieronymus Bosch.

High Renaissance and Mannerism

This period includes the Protestant Reformation and the Roman Catholic Counter-Reformation. It was a period of religious wars and intolerance which saw the political and commercial decline of Italy. As power moved north and west, France, Spain, England, and

the Netherlands grew in influence and wealth.

The High Renaissance saw the triumph of the Humanistic spirit in three great masterpieces of art, Leonardo da Vinci's *Last Supper*, painted in 1495 for the Milan Monastery, Raphael's *School of Athens*, commissioned by Pope Julius II for the Vatican, and the dramatic intensity of the Sistine Chapel, painted by Michelangelo in 1512. In Northern Italy, the artistic centre was Venice, where the stress was on light, atmosphere, and colour. Giovanni Bellini infused his romantic, imaginative paintings with these elements. A painter of the next generation, Giorgione, is known for highlighting nature rather than figures in his unique technique. This approach can be seen in his masterpiece, *The Tempest*, now displayed at the Galleria dell'Accademia, Venice. Titian, a student of Giorgione, continued in his master's footsteps. Blessed with a long life, Titian became the dominant Venetian painter of the century. Other prominent Venetians were Correggio, Tintoretto, and Paolo Veronese.

The High Renaissance, which began around 1495, ended in 1527 with the sacking of Rome by German mercenaries. Many Italian artists, writers, and musicians fled and found refuge in France. They carried with them the spirit of the High Renaissance that eventually replaced the lingering Gothic tradition. This influence can be seen in the works of the French painters Jean and Francois Clouet and the school of Fontainebleau.

Elsewhere in Europe, the Renaissance spirit was combining with Gothic Realism to produce artists such as Peter Brueghel the Elder in the Netherlands, Hans Holbein the Younger in England, and Albrecht Durer and Lucas Cranach the Younger in Germany.

In Italy, the sacking of Rome and the Counter-Reformation had a serious effect on the visual arts. The High Renaissance sense of calm and order gave way to exaggeration, complexity, and also grace. Art historians refer to this Late Renaissance style as 'Mannerism'.

It found expression in the later works of Michelangelo and the art of Jacopo da Pontormo and others. A powerful example of Mannerism is Michelangelo's *Last Judgement*. The expression of Mannerism can also be found in the work of El Greco. By 1590, Mannerism had run its course and artists turned back to the works of the masters of the High Renaissance for inspiration. The next century was to be dominated by the Baroque style.

Age of Absolutism and Expansion— Baroque 1600–1700

The Baroque style grew out of the Counter-Reformation. It emphasized the spiritual and emotional aspects of a revived Roman Catholicism. Baroque art appealed to emotion rather than to reason and intellect. Themes were religious or from ancient mythology; saints were portrayed surrounded by clouds and cherubs, and were painted with exuberant drama. The essence of Baroque art lies in its dramatic use of movement, chiaroscuro, and vibrant colours. In Italy, the Carracci brothers paved the way for Caravaggio's highly emotional paintings such as *Boy Bitten by a Lizard*. The Flemish painter, Peter Paul Rubens, under the influence of Caravaggio and the Venetian school of painting, created a vigorous and exuberant art. Others who painted in the Baroque style were the Spaniards, Ribera and Velazquez, and the Flemish painter, Sir Anthony van Dyke, who attained great success in England.

Baroque art has many faces. In Italy it was concerned with religious themes; in France, it was classical. In the Protestant mercantile nation of Holland there was no place for religious paintings; consequently, Dutch artists turned to landscapes, interiors, portraits, and still-life. Amongst the leading artists of the age were Rembrandt, Frans Hals, and Jan Vermeer.

The Age of Enlightenment and Revolution (1700–1800)

The century saw two revolutions: The American Revolution of 1776 and the French Revolution of 1789. After the death of Louis XIV (the Sun King) in 1715, the Baroque style gave way to a lighter, more frivolous style known as 'Rococo'. In France, the Rococo style was popular during the reign of Louis XV, when fashions were strongly dictated by the king's favourites, women such as Madame de Pompadour and Madame du Barry. Among the major artists of this period were Antoine Watteau and Francois Boucher.

The Rococo style gave way to two opposing schools, the Neoclassic and the Romantic. As a reaction to the frivolities of Rococo, Neoclassicists such as Jacques-Louis David looked to ancient Greece and Rome for inspiration. The Romantics, on the other hand, drew inspiration from the Middle Ages and exotic cultures such as the Native Americans. Three early Romantic painters were Pierre Prud'hon, Louis Girodet, and Antoine-Jean Gros. In Italy, Rococo painters were mainly Venetian. Rome remained the centre for foreign artists who came to study old ruins and Renaissance art. An outstanding Roman artist inspired by the ancient ruins was Giovanni Piranesi.

Spain produced one of the greatest artists of the century, Francisco Goya. As painter to the Spanish court, he produced fine portraits. He was also accomplished in the art of engraving, creating masterpieces in such series as *The Disasters of War*, and others mocking the follies of society. England's major artist of significance was William Hogarth, painter and engraver, followed later by Joshua Reynolds, Thomas Gainsborough, Thomas Rowlandson, and William Blake. John Constable and J. M. W. Turner were the major English landscape painters of the nineteenth

century.

Three American artists who studied in England and became painters of note were John Singleton Copley, Benjamin West, and Gilbert Stuart.

The Age of Imperialism, Nationalism, and Industrialization (1800–1900)

The nineteenth century dawned with the rise of Napoleon in his bid for world power. His fall came in 1815 with his defeat by the Duke of Wellington at Waterloo. Europe then remained calm until World War I, a century later. Great Britain emerged as a world power with a vast empire. The Industrial Revolution had begun.

The centre of art shifted to Paris, where it was to remain well into the next century. In Paris, the first quarter of the century was dominated by the Neoclassic and Romantic schools of painting as reflected in the works of Jacques-Louis David and Auguste Dominique Ingres. By mid-century, a new school of painting focused on everyday life was asserting itself, led by a group who called themselves the 'Realists'. They included Gustave Courbet, Honore Daumier, Edouard Manet, and Edgar Degas. The Realists were succeeded in the 1860s by the Impressionists, who included Claude Monet, Pierre Renoir, and Camille Pissarro.

Romanticism

A movement that emerged in the late eighteenth century, Romanticism was a reaction against the aesthetic and ethical values of Classical and Neoclassical art and against the materialism of the Industrial Revolution. The movement was greatly influenced by Romantic writers who provided the movement with subject matter and a philosophy. Rousseau, Schiller, Goethe, Scott,

and Byron figured prominently. Romanticism flourished until the middle of the nineteenth century. Constable and Turner, Gericault and Delacroix were leading Romanticists.

The Pre-Raphaelite Brotherhood

The PRB (founded in England in 1848) looked back to what they regarded as the innocent naturalism of the fifteenth century for inspiration. Leading members of the group were Dante Gabriel Rossetti, John Everett Millais, Ford Maddox Brown, and William Holman Hunt. They in turn strongly influenced William Morris and Edward Burne Jones. Subjects chosen by the group were often idealized figures in a landscape, as well as pious and sentimental themes.

Realism

This movement originated in France and soon spread throughout Europe and America. A reaction against Romanticism, it flourished between 1840 and 1880. The Realists based their work on simple views of everyday life, and Romantic emotionalism was replaced by detached, objective observation.

Impressionism—Mid to Late Nineteenth Century

The Impressionists celebrated a magnificent vision of nature seen in the beauty of natural light such as dawn, daylight, or twilight. The most important artistic phenomenon of the nineteenth century, it was the first of the Modern Art movements. Impressionism broke with established academic practice in order to create a spontaneous view of the world. French painters, particularly the landscapists of the Barbizon School, were deeply influenced by

the landscape artist John Constable, who exhibited his work in Paris at the beginning of the nineteenth century. Through the use of broken brushstrokes, application of colour, and thick opaque impasto, Impressionist artwork celebrated a unique vision of nature.

The name of the movement was derived from a painting by Monet, *Impression Sunrise*, which portrays the play of light on water. The movement was named when, at an independent exhibition of their work held in Paris in 1872, a journalist derisively referred to the artists Monet, Renoir, Sisley, Pissarro, Cezanne, Degas, Manet, and Berthe Morisot as 'Impressionists'.

The Vienna Secession

On 13 April 1897, a group of artists led by Gustav Klimt broke away from the Academic Art Society, the *Kunstlerhaus*, because of its refusal to allow foreign artists to exhibit. The group created a new association called the Vienna Secession. Among them were Oskar Kokoschka and Egon Schiele. Initially, the Vienna Secessionists were influenced by Art Nouveau, before becoming interested in Expressionism. Designers and architects came under the influence of the Glasgow School of Scotland, which led to an involvement with increasingly geometric designs. As with the English Arts and Crafts Movement, one of the goals of the Vienna Secession was the unification of applied and fine arts.

The Coming of the Machine Age

The radical changes that took place in science, mathematics, engineering, and psychology during the last decade of the century laid the foundation for the machine age. The diesel and turbine engines, automobile, box camera, radio, light bulb, and electric motor were all

invented before 1900. Three art movements that emerged after 1884 were: Post-Impressionism, Symbolism, and Art Nouveau. Post-Impressionism encompassed a number of styles and could be adapted to express diverse viewpoints. Symbolism took its name from a literary movement. It was more a global view than a style of painting. Symbolists were free to employ any style they chose, including Post-Impressionism. On the other hand, Art Nouveau was strongly linked to the Arts and Crafts movement. It was both a style and a definite viewpoint. All three movements were affected by the social and economic changes brought about by the Industrial Revolution.

***Fin de siècle* (End of the Century) (1880–1900)**

The end of the century gave its name to a style in art and design that was ornate and decadent. These elements were characteristic of the graphic work of Aubrey Beardsley, the illustrator whose stylized black and white drawings were associated with Art Nouveau. The next generation of painters were referred to as the Post-Impressionists, a movement which had as its chief aim a return to a more formal conception of art stressing the importance of the subject. The practitioners included Paul Cezanne, Paul Gauguin, Georges Seurat, and Vincent van Gogh.

At the close of the century, a group emerged who called themselves the '*Nabis*', or prophets. Among them was Pierre Bonnard; closely associated was the great poster artist and painter, Henri de Toulouse-Lautrec.

Art Nouveau

Although Art Nouveau started at the end of the nineteenth century, it reached its peak in the first decade of the twentieth century. Primarily

pertaining to an architectural, decorative, and graphic arts movement, Art Nouveau's flowing lines, foliage patterns, and sensuous shapes are evident in the typeface, page layouts, and poster designs of the period. It was influenced by Japanese prints and the paintings of Gauguin and Munch.

Peace, War, and Revolution (1900–1920)

The twentieth century started well, the world was at peace, but this was not to last. In 1914, World War I broke out. After four years of bitter fighting and countless deaths, the war ended in an armistice in November 1918. That year saw many innovations in popular art forms. The early part of the century was a time of experimentation and daring which expanded the limits of art forms including painting, sculpture, architecture, theatre, music, literature, dance, and film. The motion picture industry shifted to Hollywood from New York. The new era brought a spirit of revolution. Avant-garde artists experimented with form, colour, and content to create a new vocabulary that was to have a major impact on graphic arts.

The notable architects and designers of the period include Antonio Gaudi and Henri van de Velde. Perhaps the best example of early twentieth century graphics were the posters of Alphonse Mucha and Toulouse-Lautrec.

Twentieth Century Painting

Between 1901 and 1906 several exhibitions of paintings by Cezanne, Van Gogh, and Gauguin were held in Paris and Germany. For the first time, a wide cross-section of the public had the opportunity to view the works of these painters. The young painters who grew up in the morbid mood of the 1890s

were deeply impressed by what they saw. Several of these artists developed a completely new style, combining the violent colouration of Van Gogh and the bold distortions of Gauguin. They directed these elements freely for pictorial and expressive effects.

Fauvism (1905-1909)

Excited and influenced by the paintings of Cezanne, Van Gogh, and Gauguin, several young artists got together in 1905 to mount an exhibition in Paris that appeared to blaze with pure, contrasting colours. Paintings by Matisse, Marquet, Derain, Vlaminck, and Rouault expressed great passion and joy. One critic disparagingly dubbed the artists collectively as 'Les Fauves' (wild beasts), a title that gave its name to the short-lived movement. Fauvism, in which artists employed intensified colours with simplifying forms to heighten emotional expression, was the first important French painting movement of the new century. Henri Matisse was the leading artist of the movement, soon joined by Georges Braque, Rouault, Henri Manguin, and other artists.

Expressionism

Expressionism was a form of art in which artists aspired to search out and express their innermost feelings by developing pictorial forms, rather than take inspiration from external elements. They rejected the naturalism of Impressionism and employed a simplified style, distorting line and colour to deliver an intense, emotional impact. Expressionism can be said to have sprung from Vincent van Gogh's use of drastically simplified line and very strong colour. This movement had affinities with Fauvism in France and was adopted by Toulouse-Lautrec.

Expressionism spread to German and Nordic artists such as Munch. Because of the emphasis on outline and subject matter, Expressionism has played a vital role in the development of graphic art.

German Expressionism

Fauvism, which lasted four years, influenced the German Expressionist movement that arose at the same time. The movement began with DIE BRUCKE (The Bridge), propagated by a group of like-minded painters who lived in Dresden at the beginning of the twentieth century. The early work of the group reflects the simplified, lyrical lines of Matisse, and also the influences of Van Gogh, Gauguin, and Edvard Munch, living at that time in Berlin. The greatest Brücke artist was Emil Nolde, who was already working in an Expressionistic style when invited to join the movement in 1906.

Der Blaue Reiter (The Blue Rider) (1911)

A Russian artist living in Munich, Wassily Kandinsky, was the leading member of the group of Munich artists known as Der Blaue Reiter. It was a loosely formed alliance named after one of Kandinsky's early paintings. Kandinsky began to discard representation in 1910, and in a few years abandoned it altogether.

Max Beckman, Kathe Kollwitz, and George Grosz are representative of many German artists who were profoundly anguished by the experience of World War I and the state of civilization. Beckman expressed his despair in a style of aggressive satire. Kollwitz worked almost exclusively in prints and black and white lithograph posters. Grosz vented his anger through biting satirical caricature.

The Ash-Can School (1908)

Eight young American artists formed a group called 'The Eight' in defiance of the National Academy of Design in New York, which discouraged progressive work. Robert Henri, William Glackens, George Luks, Everett Shinn, John Sloan, Arthur B. Davis, Ernest Lawson, and Maurice Prendergast organized an independent exhibition in the Macbeth Gallery, New York. This was the 'coming out' of the Ash-Can School. Its devotees were realist in outlook, focusing on everyday subjects of urban life around them. The movement was significant for its break with the academic values of the conservative art establishment.

Abstraction

The term 'abstraction' is usually taken to mean the process of breaking down observed reality into geometric shapes. Literally, 'abstraction' means 'to draw away from, to separate'. Whether the artist is conscious of it or not, abstraction goes into the creation of any work of art, since even the most realistic portrayal can never be an entirely faithful replica.

Cubism

Cubism is generally held to have begun with Pablo Picasso's painting *Demoiselles d'Avignon* (1907). Inspired by the later paintings of Cézanne and the tribal sculpture of Africa, Picasso abandoned the melancholy lyricism of his 'Blue Period' for a more vigorous style, constructing pictorial space through the use of angular planes and surfaces. The following year, in 1908, the critic Louis Vauxcelles coined the name 'Cubism' while reviewing the paintings of Braque, who constructed form as a series of interlinking planes.

Analytic Cubism

The Cubists—Picasso, Braque, Gris, Villon, de La Fresnaye and others—held as a guiding principle 'the rule of controlled feeling'. They aspired to put construction first, keeping the emotions in check. Their differences with the Fauves were intellectual. Cubism aimed to redefine realism, to show the solid reality of objects, not merely their appearance. It favoured a multi-viewpoint exploration showing objects in a shallow picture space from many different angles, through overlapping and interlocking planes. The contrasts of colours and textures evident in earlier experiments with Cubism were reduced to a minimum. The Cubists limited their palettes to neutral shades: greys, black, brown, and sombre green. Great emphasis was placed on structure; other elements such as colour, curved line, subject, and atmosphere were rejected.

Synthetic Cubism

By 1910, Cubism was well established as an alternative to Fauvism. Picasso and Braque collaborated so closely at this time that their work from this particular period is hard to distinguish. Together they initiated the next phase of Cubism, usually called Synthetic Cubism. Because it puts forms back together, it is also known as Collage Cubism. By 1911, Picasso and Braque were composing still-lives almost entirely of cut and pasted scraps of paper, newsprint, string, and other ready found objects, with a few lines added to complete the design. Thus the collage elements became part of the image while retaining their original identity. This development was seen as an attempt to elevate day-to-day living and ordinary, everyday objects into the realm of art through the use of paint. Synthetic Cubism is a landmark in the history of painting; it offered a fundamentally new concept of space. Picasso and Braque, by the use of shading,

increased the apparent thickness of the collage elements, and their distance from each other.

Eventually, the two pioneers discovered that they could achieve this new pictorial space without the use of pasted materials. They began to paint as if they were making collages. The start of World War I in 1914 put an end to their collaboration and disrupted the further development of Synthetic Cubism, which was to reach new heights a decade later.

Futurism

Futurism was founded in Milan, Italy in 1909, as a parallel movement to Cubism. Its followers aimed to break away from Italy's classical past and glorify modernism. The movement spread across Italy and Western Europe as a rebellion, political and social, against everything 'out of date'. Futurists were fascinated by modern machines, transport, and communications. One of the main features of Futurist artists was their desire to capture movement and speed. They portrayed multiple images of an object in slightly different positions, thus creating an impression of movement. They made use of a variety of optical illusions inspired by photography and the cinema. Forms were dispersed in a variety of points, lines, and colours in order to show not reality, but reality transformed by motion. The Futurists based their manifestos on anarchy and the glorification of war, but the movement did not survive World War I. Its leading exponents, Boccioni, Carra, Russolo, and Severini, were killed in the War, but their philosophy was passed on to artists in other countries, notably Russia.

Vorticism

A form of Cubism invented in England in 1914 by Wyndham Lewis, Vorticism was

inspired by a remark made by the Italian Futurist, Umberto Boccioni, who declared that, 'all creative art emanates from an emotional vortex.' Like Futurism, Vorticism employed a highly dynamic, angular style that aspired to capture activity and movement in both painting and sculpture. Though Vorticism did not survive the war years, it was significant as the first movement towards abstraction in England.

Constructivism (1913-21)

An abstract art movement founded in Russia in 1913, Constructivism took its inspiration from modern technology, with its exponents incorporating a variety of industrial materials into their work. This concept particularly influenced sculpture, which was fabricated out of component parts using industrial materials and techniques. The same principles were applied in painting, using a two-dimensional format. In Moscow, Vladimir Tatlin created abstract hanging and relief constructions that assimilated wire, glass, and sheet metal, amongst other things. Tatlin later turned to architectural and engineering schemes. For political reasons, the movement could not survive in Russia beyond 1921, when its practitioners turned to stage and furniture design and typography. Antoine Pevsner, a leading exponent of the style, went to Paris in 1923, and Naum Gabo worked in Germany until 1932. Constructivist ideas have continued to influence architecture and abstract sculpture employing non-traditional materials.

Suprematism

This was a movement arising out of Constructivism. Invented in 1913 by Malevich, it was an austere form of Cubism, a pure, geometrical, abstract art. Its followers

produced the barest and most generalized form of abstract art. Subjects were no more than disembodied symbols.

The Bauhaus School

It was founded at Weimar by the architect Walter Gropius in 1919. It became the centre of modern design in Germany by the 1920s. Its aims were to bring art and design into the realm of daily life. Gropius believed that artists and architects should be considered craftsmen and that their work should be practical and affordable. Bauhaus students included artists, architects, potters, weavers, sculptors, and designers who studied in various workshops.

The characteristic Bauhaus style was simple, geometrical, and refined. During a visit to Germany, Rabindranath Tagore saw an exhibition of work by Bauhaus artists including Klee, Kandinsky, Albers, and Moholy-Nagy, and persuaded them to show their work in Calcutta in 1922.

The school was closed by the Nazis in 1933, but the practitioners continued to teach their philosophy around the world.

De Stijl (1917)

Theo van Doesburg and Piet Mondrian founded a magazine, *De Stijl*, and an art movement in Holland in 1917. Believing that art should aspire to harmony and order, they advocated an art that was uncluttered and geometrical, using mainly square forms, straight lines, and pure primary colours. The movement's aims were deeply philosophical, based on the idea that art should reflect the mystery and order of the universe. It had a marked influence on Gropius and others of the Bauhaus movement, and on commercial art, poster design, packaging and printing. After van Doesburg's death in 1931, the

movement came to an end, but its influence on architecture and the applied arts in Europe was widespread.

Dada (1915-22)

Believed to have been initiated by the poet Tristan Tzara, the Dada movement was a nihilistic precursor of Surrealism with a following of artists and writers based in Switzerland who were refugees from countries occupied by Germany during World War I.

Deliberately anti-art, anti-sense, and anti-politics, it spread from Zurich to Paris, Cologne, and New York. Intended to shock, a famous example of Dada is the reproduction of the Mona Lisa with moustache and beard by Duchamp. Ready-made objects were offered as 'art', such as a bicycle wheel or a urinal signed by Duchamp as R. Mutt, which he tried unsuccessfully to exhibit in New York. Arp's collages of coloured paper put together at random and Picabia's drawings of bits of machinery helped prepare the way for the advent of Surrealism in the 1920s.

Between the Two World Wars (1920-1939)

As peace came to Europe, it brought economic recession, with Germany the hardest hit. The beginnings of a partial recovery ended abruptly with the Wall Street crash of 1929, which led to a worldwide recession.

Die Neue Sachlichkeit

Also called the New Objectivity, it took its name from an exhibition of paintings held in Mannheim, Germany, in 1925. There was an extreme objectivity in the approach to subjects that resulted in sober portraits with a

'jaundiced' view of life. Subjects had a haunted, desperate look that showed them alienated by the anonymity of modern urban life. In some of Max Beckmann's works there are overtones of Expressionism.

Surrealism

A movement that originated in France, Surrealism has been described as a way to resolve the contradictory conditions of dreams and reality. Its first manifesto was published in 1924; the first exhibition was held in Paris in 1925. It has been explained as a combination of collage, Constructivist aspects of Cubism, and the nihilism of Dada. Aspiring to freedom from the accepted means of expression, artists painted absurd scenes, ranging from dreamlike to nightmarish, in precise detail.

Artists de' Chirico, Tanguy, Dali, Magritte, Delvaux, Ernst, Gorky, and Miro searched for unexpected encounters and juxtapositions. These aspects can also be seen in Man Ray's photographs and Picasso's paintings and sculpture from the late 1920s.

American Art in the 1920s

The most important movement was Precisionism, in which urban and industrial scenes were shown in a precise, mechanical manner. Prominent artists of the time included Charles Demuth, Charles Sheeler, and Georgia O'Keefe.

During the 1930s, a group known as the 'Regionalists' turned to American subjects for inspiration. The best known among them were T. H. Benton, G. Wood, and J. S. Curry.

Edward Hopper, an independent artist of the period, painted an American way of life that evoked nostalgia and loneliness. Stuart Davis produced Cubist-inspired work depicting America's vigour and vitality.

Abstract Expressionism (1940-1960)

After World War II (1939-45), a new style of painting emerged that gained widespread popularity over the next fifteen years. Initiated by artists living in New York, Abstract Expressionism, or Abstract Impressionism, has been explained as a combination of Abstract Art and Expressionism bordering on automatic painting. By creating involuntary shapes and allowing paint to trickle over the canvas, the artist aspired to free his subconscious to express itself. Leading exponents of the movement included Jackson Pollock, Rothko, Frankenthaler, Kline, and de Kooning. Action painting was a significant development in American art, having a powerful impact on European art which, in those post-war years, had nothing to show of comparable force. One French artist's style was so startling and original that he is considered an art movement by himself. Jean Dubuffet found inspiration in the art of children and the insane. He questioned established values, finding the distinction between 'normal' and 'abnormal' no more acceptable than the established ideas of 'ugliness' and 'beauty'.

Another outstanding painter who was linked with the Expressionist tradition was Francis Bacon, the English artist. His ability to transmute sheer anguish into visual form was unequalled among twentieth century painters.

Age of Youth, Change, and Space (1960-1980)

By the early 1960s, Abstract Expressionism had lost much of its energy. A new generation of artists began to explore fresh directions, giving rise to numerous movements.

Pop Art

Pop art emerged in America and in England in the late 1950s, taking its inspiration from the imagery of consumer society and popular culture. Comic strips, advertising, and mass-produced objects all play their part in this movement, in which photomontage, collage, and assemblage are also common elements. Painting techniques often assimilate hard-edged, photographic-like methods, stressing the qualities of the subject, while in sculpture, meticulous attention is paid to detail.

Using a serigraphy (silk-screen printing) technique, Andy Warhol made multiple images of popular figures and consumer items such as soup cans. He was recognized as a leader of New York Pop along with Roy Lichtenstein and Tom Wesselman. One of its well known exponents, Richard Hamilton, explained the movement as: 'popular, transient, expendable, low-cost, mass-produced, young, witty, gimmicky, glamorous and Big Business!'

Op Art

Op Art, short for Optical Art, was a trend that gathered force in the mid-1950s. Pop artists created non-representational images that appeared to shimmer and quiver with action. Although the work itself was static, the use of form and colour created optical illusions that conveyed the illusion of movement. Outstanding examples of Op Art have been produced by Victor Vasarely, Bridget Riley, and Josef Albers.

Minimalism

Minimalism developed primarily in the USA in the 1960s and 1970s, partly as a reaction against the gestural painting of the Abstract Expressionists. As the name suggests, it is art

pared down to its essentials, free of surface decoration; it is abstract, objective, and anonymous. Minimalists looked to the unemotional aspects of industrial production as a means of expression. Thus, artists like Carl Andre and Donald Judd often used mass-produced bricks or foundry-produced steel cubes in their work. In Minimalist painting and drawing, gestural painting is eschewed for a monochromatic approach often drawn on linear grids. Besides Andre and Judd, minimalists include Frank Stella, LeWitt, Flavin, Mangold, and Serra.

Kinetic Art

Kinetics is the study of the relationship between moving bodies. Kinetic art is based on the notion that light and movement can create a work of art. The idea was first presented in the 1920s but reached new heights in the '50s and '60s. Gyrating objects, composed of moving pieces of glass, metal, or other materials, were combined with changing lights and colours to create interesting patterns of light and shade as they moved. Kinetic art may also describe three-dimensional mobiles and constructions that can be operated by a motor, such as Jean Tinguely's sculpture, or simpler constructions such as Alexander Calder's wind-driven pieces. The term may also be used to describe works of art that use light effects to create a feeling of movement, such as in Op Art. Marcel Duchamp, Victor Vasarely, and Pol Bury are amongst the artists who have experimented with Kinetic Art.

Hard Edge

Hard-Edge Painting was a reaction to the gestural and painterly work produced by Abstract Expressionists. Artists developed a

geometric, rectilinear style that deferred to the flatness of the canvas. Represented with a sharp, 'hard' edge, the mechanical application of colour stressed the detached qualities of the canvas and the artist's determination to avoid subjective references. In the same way, a machine-like application of paint was employed by its practitioners, who included Kenneth Noland, Ellsworth Kelly, and Al Held.

Colour Field

Colour Field Painting was yet another method that rejected the gestural brushstroke and drip technique of the Abstract Expressionists. Colour Field painting favoured a technique that covered the canvas with monochromatic colour of varying intensity. The effect aimed for was a non-tactile painting that became identical with the surface of the canvas. A method that began in the late 1940s, it avoided any sense of recession into depth. The favoured medium became acrylic paint thinned with water. Helen Frankenthaler, Ad Reinhardt, Mark Rothko, Kenneth Noland, and Barnett Newman are among its leading exponents.

Conceptual Art

Conceptual Art is a term used to cover a wide variety of manifestations. It became a major international phenomenon in the 1960s. Giving importance to the 'concept' of an artwork rather than to the practitioner's technical skill, films and videos, texts, maps, photographs, and performances offer diverse ideas or 'concepts' that may be drawn from a wide range of subjects. Concepts may be displayed in a gallery or designed for a chosen space. The 'Land' art of Richard Long and the wrappings of Christo encompass the environment as an integral element of the artist's work. Pakistan's first major Conceptual Artist, Rasheed Arain,

lives and works in England. Richard Long, Joseph Beuys, Christo, and Nauman are numbered among the distinguished practitioners of Conceptual Art.

Feminist Art

Modern feminist artists question the position of women in society and attack assumptions such as the supposed superiority of fine art over crafts. Through the efforts of feminist art historians over the last two decades, the work of women artists, past and present, has been recognized as increasingly important in art history.

Women have been active in art for centuries, but it is only in recent times that artists such as Rosa Bonheur, who, along with Landseer, was the most famous animal painter of the nineteenth century, Impressionists Berthe Morisot and Mary Cassatt, twentieth century artists Kathe Kollwitz, Helen Frankenthaler, and sculptor Barbara Hepworth, have received a measure of recognition.

Computer Art and Graphics

Artists now use computers as instruments for the production of art. While it is on the computer screen, the artwork is a collection of points of light. Each point is controlled through software and input devices such as mouse, joystick, and electronic pen. Thus the image is open to countless modifications. Various computer processes such as reverse, enlarge, make smaller, blur, change colours, turn into line art, and other variations, are exciting and useful components in graphic arts. The image may be printed out at any stage, and its various stages stored in the computer or on diskettes.

Assemblage

'Assemblage', also known as 'junk art', refers to three-dimensional constructions that are made of non-traditional materials. Early Assemblages were made by Dadaists, such as Duchamp's ready-made objects, and Picasso's *Bull's Head*, constructed from the handlebars and saddle of a bicycle. The movement attracted wide attention in the early 1960s, following an exhibition called *The Art of Assemblage*, at the Museum of Modern Art, New York, in 1971.

Happenings

Multi-media events in the 1960s were part of the Pop phenomenon. A Happening was neither an art exhibit nor a theatrical event, it was an experiment in perception, and as such became linked to conceptual art. Happenings had no special venue, taking place in parking lots or on the street. The materials used in Happenings had no association with fine art. Commonplace objects such as tyres were used, as were articles of clothing, fire, and water. Joseph Beuys believed that artists could channel energy from ordinary objects and give them new meaning.

Postmodernism

Postmodernism may be considered as symptomatic of our age, as we move from the machine age to the age of information technology. Since 1980, art has been called Postmodern, a term that links an extremely varied assortment of visual arts. While traditional forms of painting and sculpture continue, non-traditional art forms, such as installations and photography, have come to the forefront. The chief phenomenon of Postmodernism is 'Appropriation', which looks back to earlier art by analysing previous styles and adopting specific motifs or images. Without the boundaries of any particular style, Postmodernism is free not only to explore earlier imagery, but also to change the meaning by placing it in a new context.

Another important characteristic of Postmodernism is the combining of art forms so that the lines drawn between painting, sculpture, and photography often overlap.

16 ART IN THE INDO-PAK SUBCONTINENT

The art of Pakistan has been influenced by a heritage of rich diversity. Though the country is young in years, the land has a history that reaches back to earliest times. Here was cradled one of the first great civilizations of the world, the Indus Valley Civilization, circa 2300 BC.

Since ancient times, the subcontinent has been subjected to invasions through the mountain passes of the North West Frontier. The land's original inhabitants were driven south by Aryan hordes fighting under the banner of their warlord Indra. The Aryans brought the Sanskrit language and their Vedic lore to the subcontinent. A thousand years later, Punjab and Sindh became part of the Persian Empire, which fell to Alexander the Great.

The mountain passes were also used for peaceful purposes, enabling merchants to travel with pack-laden animals. Trade by sea flourished, and men and merchandise travelled to and from Egypt and the Far East. The Mauryas dominated the earliest period of Indian art, Ashoka (c. 273–32 BC) being the greatest ruler of the Mauryan dynasty. Through his efforts, Buddhism spread throughout Asia. Later, the Hindus were dominant; then came the Mughals, who consolidated the hold of Islam in the subcontinent and established rich cultural traditions in their rule of 200 years. Finally came the British, first as traders, then as colonists. They remained for over one hundred years.

The Indus Valley Civilization

In 1856, a few miles from the river Ravi, which runs in what is today the Punjab area of Pakistan, labourers laying a railway track came across a heap of fire-baked bricks.

Digging out the bricks, they uncovered a number of small stone tablets engraved with strange images and markings. This was the first indication of the discovery of one of the world's earliest civilizations.

It was not until 1921 that excavations in the Harappa area (named after a nearby village) began in earnest. The following year an even greater discovery took place when an archaeologist exploring a Buddhist stupa in Sindh decided to excavate beneath it. An incredible city was laid bare. Thousands of skeletons were scattered across the site; it was named 'Mohenjodaro', the mound of the dead. Situated 220 miles from the modern city of Karachi, Mohenjodaro is now a major tourist attraction.

Separated by four hundred miles, Harappa and Mohenjodaro were the chief cities of an urban civilization that stretched from the Himalayan foothills to Rajasthan and included almost one hundred known sites. According to archaeologists, the Indus Valley Civilization dating back to 2300 BC flourished for almost a thousand years. At its peak, it dominated an area of 500,000 square miles.

Three of the world's earliest known civilizations grew up around the Tigris-Euphrates, the Nile, and the Indus rivers. The rivers opened the way for trading and brought outside influences to the people of the Indus valley.

Mohenjodaro and Harappa were designed by exceptional planners: wide roads, an efficient drainage system, and buildings constructed of blocks of kiln-baked brick were dominated by a commanding hill on which was placed a large-sized public bath, perhaps used in a purification ritual.

Excavations produced hundreds of seals made of steatite (soap-stone), a find that established a clear link between the Indus civilization and Mesopotamia and Sumer, where similar objects had been found. Considered by scholars to be perhaps the earliest art pieces of the subcontinent, the seals range in size from three-quarters of an inch to one-and-a-half inches. They were first cut with a saw, then shaped with a sharp tool and polished with an abrasive material. To achieve the final whiteness, they were coated with an alkali and treated with heat. Some of the seals were inscribed with a pictographic script (which remains undeciphered); animal designs and plant motifs were carved on others, as well as symbols such as circles, crosses, and swastikas. Variations on the Indus Valley seals have reappeared in the subcontinent through the ages. The pipal tree depicted on the seals is still revered as sacred. A three-headed figure seated in a yogic position is thought to be a forerunner of the Hindu deity Shiva.

Hundreds of crudely wrought clay figurines thought to be female deities representing fertility and prosperity were also found; these were perhaps utilized in household rituals. Delicately modelled animals, skilfully detailed with tender care, were even more elaborate.

Clay was used for many purposes: to make children's toys, game dice, and pottery. The remains of large storage jars, bowls, and goblets can now be seen in museums throughout the subcontinent. Made on the wheel, the clay objects were often hand-painted with geometric designs or overlapping circles and animal, plant, and fish motifs.

Besides clay, artisans used a variety of metals and semi-precious stones to fashion objects. The Indus Valley excavations have yielded decorative articles which were used to adorn the wearer from head to toe. Hair combs of bone or ivory, camel-bone needles thought to have been used for embroidery,

bead necklaces, belts, anklets, bracelets, and polished metal circles presumably used as mirrors, were all accoutrements of the inhabitants of the great twin cities.

From Mohenjodaro emerged the earliest major metal artworks of the subcontinent: an exquisite bronze figurine of a girl, thought to be standing in a dancer's pose. About four inches high, the figure is decorated with a necklace and with bracelets which completely cover her left arm. Her facial features link her to the hill tribes of Balochistan.

Another major discovery was a steatite bust of a magnificent being believed to have been a king-priest of this well-ordered society. His hair is parted in the centre and drawn back. His eyes, partially closed as though in meditation, were originally inlaid with shell. His beard is neatly ridged, and his left shoulder is covered with a garment decorated with a raised trefoil design suggestive of embroidery or applique work. The trefoil design is known to have had spiritual connotations in other ancient cultures.

From the excavations, archaeologists have pieced together a comprehensive understanding of the people of the Indus Valley. They had a system of weights and measures, played games, were prosperous traders and enlightened city planners, and also cared for children and animals. Their artisans and craftsmen were highly developed aesthetically, as were the sculptors of the region. However, Sir Mortimer Wheeler and other archaeologists suspected that even older ruins lay hidden beneath the ruins of the Indus Valley Civilization.

It is believed that environmental changes, such as the Indus changing course, caused a cultural decline which weakened the civilization. Then came an invasion from the north (c. 1500 BC). Aryan nomadic hordes spread toward the Middle East. From Iran they invaded Balochistan and then Sindh. A massacre took place and the survivors were

driven south. Artisans took their skills farther afield and so traces of the earlier cultures survived. The Aryans with their chariots, bronze weapons, and banners dedicated to Indra, hurler of thunderbolts, moved on to the Punjab and laid waste to Harappa. The early Indus civilization was devastated and abandoned. Reclaimed by nature, it lay forgotten by man for thousands of years.

In recent times, artists in Pakistan have looked to the Indus Valley culture as a wellspring of inspiration. Painters and printmakers have striven to analyse the known facts and interpret the unrevealed in their own idiom.

The Aryans

The Aryans' sacred lore, the Vedas (divine knowledge), was an oral tradition which was memorized and passed down from master to student for hundreds of years. Scholars believe that the Vedas were first compiled and written in 1500 BC. The Rig Veda is the oldest religious text in the world. Written in Sanskrit, the text commemorates the forces of nature, symbolized by a pantheon of deities. Two great epic works, the Mahabharata and the Ramayana, have provided a rich source of material for artists of the subcontinent to draw upon through the centuries. With time, the Vedic religion developed into Brahmanism, and the Vedic practice of placating the deities by ritual sacrifice was supplanted by the Brahmanic principles of asceticism and atonement and the discipline of yoga.

The Beginning of Buddhism

One of the world's great religions emerged in the sixth century BC with the advent of Buddhism. An historical figure, Prince Siddhartha, was born in the Himalayan

kingdom of Kapilavastu. At the age of twenty-nine, he renounced his royal heritage to seek spiritual enlightenment. For six years, Siddhartha pursued austerity and self denial as practised by the Brahmins. Still dissatisfied, he then determined to sit in contemplation until he attained awareness. For forty-nine days, Siddhartha meditated beneath the boughs of a bodhi tree at Bodh Gaya near Benares. Then he arose to become known to the world as Gautama or Buddha, the Enlightened One. The rest of Gautama's life was spent in itinerant preaching and teaching. Fundamental to the Buddhist religion is the belief in reincarnation, the endless cycle of life which ends with Nirvana.

Almost all sculpture in India can be interpreted as religious. Images and icons were created as an aid to contemplative discipline, not as objects of worship. Monumental temple sculptures and friezes were intended to familiarize the public with religious lore. The efforts of sculptors to depict the various stages of the many existences of the Buddha have resulted in artworks of major importance.

In the same era as Buddhism, a holy man named Mahavira founded the Jain religion. Basic tenets of the new creed included non-violence and the sanctity of all life forms, as well as transmigration. A large following of wealthy merchants embraced Jainism and, to earn spiritual grace, they commissioned sculptors to create devotional pieces. The work of the Jain sculptors was so delicate that it was said that they used abrasive cords rather than tools to shape their marble images and filigreed designs.

The greatest of the Mauryan emperors was Ashoka, who ruled the subcontinent for forty years (c. 273-32 BC). In the eighth year of his reign, he embraced Buddhism and, through his missionaries, spread the religion throughout Asia. Influenced by Persian traditions, Ashoka built magnificent rock-carved monasteries and temples as well as

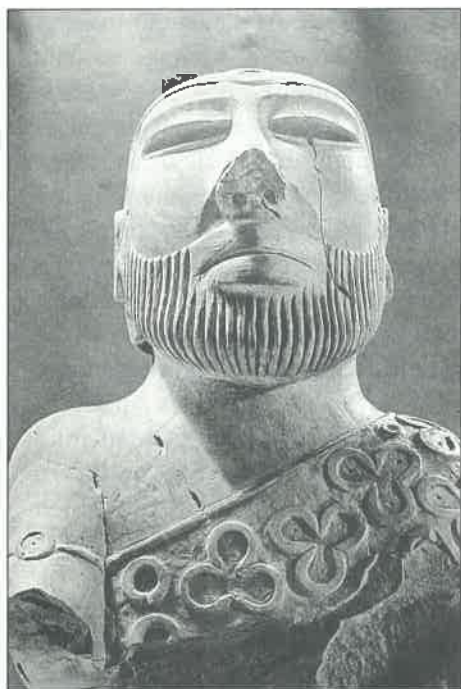


Figure 100: Priest-King of Mohenjodaro, stone carving c. 2300 BC.



Figure 102: Stone-carved column marking important Buddhist site, c. Emperor Ashoka 260-230 BC.

Figure 101: *Girl in a Dance Pose*, bronze figurine from Mohenjodaro, c. 2300-1750 BC.



Figure 103: *Fasting Buddha*, Gandhara Art, c. 2nd century AD.

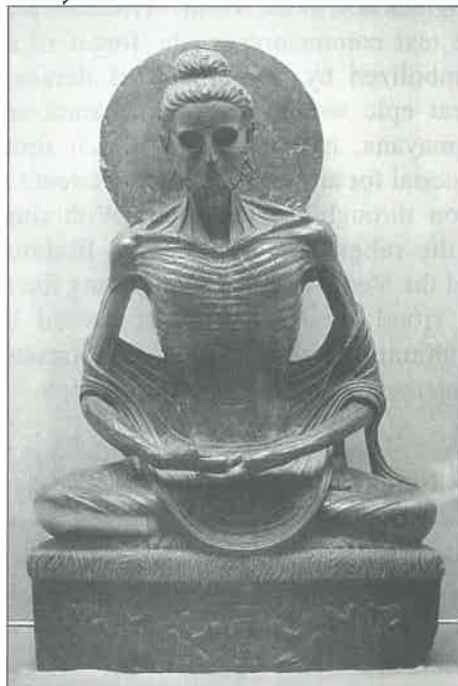


Figure 104: An attendant holds a hunting dog, detail of fresco at Ajanta, c. 5th–6th century.



Figure 105: *Babur in the Garden*, from a manuscript compiled by order of the Emperor Akbar.

Figure 106: Mughal builders.

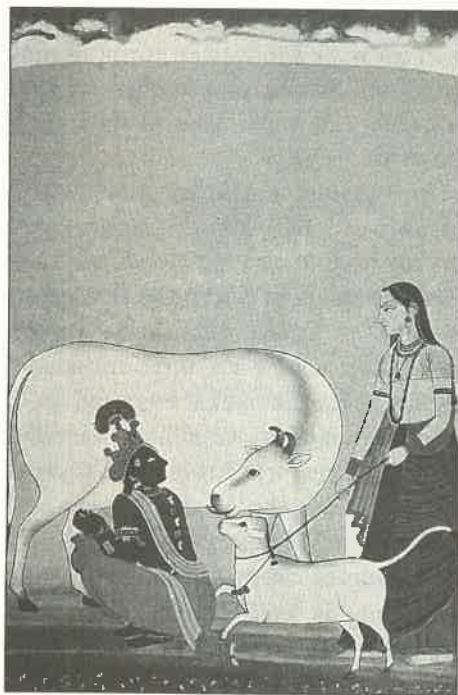


Figure 107: *Krishna Milking*, Basohli painting c. 1750.

shelters for itinerant monks and pilgrims. These rock structures are today the oldest surviving architectural structures of their kind in the subcontinent. Hoping to build monuments that would last for all time, Ashoka discarded the tradition of using wood for carving and established stone as the medium for sculpture. The emperor is credited with erecting tall, carved columns throughout the subcontinent to mark important Buddhist sites. They were inscribed with the Dharma (divine law). He also ordered the building of eighty-four thousand stupas, solid, usually spherical domes built over a revered relic, each decorated with carved borders depicting Buddhist lore and with the testament of the Dharma carved in rock. The most complete surviving stupa is the sandstone one found at Sanchi considered to be one of the most beautiful monuments in India. The enormous demand for sculptors and masons was met by recruiting skilled artisans from foreign countries. During Ashoka's time, the Buddha was never portrayed in human form. Symbols such as a lotus flower, empty chair, riderless horse, or footprint were used to indicate the presence of the Master.

After the passing of Ashoka, Buddhism lost momentum in the subcontinent. Many sculptors reverted to carving wood, and Hindu art gained ascendancy. But in the first century AD, Buddhism again received imperial patronage when a new art form initiated by the Kushan ruler Kanishka emerged in the north-west province of Gandhara. Gandhara was part of the great trade route that traversed Asia from China to the Mediterranean coast. Conversant with Western customs, Kanishka imprinted themes from Greek and Roman mythology on his gold coinage and used a standard of weights adopted from Roman currency. He had a standing image of the Buddha stamped on a coin, the first time that the Buddha was represented in human form.

Gandhara art related to the study of the Buddha: single figures, standing and seated, were depicted in various poses of meditation. Images featured Buddha in previous incarnations, robed and bejewelled as befitting a great prince. Carved friezes portrayed every aspect of the Buddha's life history: his birth, marriage, departure from the palace, search for the right path, and attainment of enlightenment. Many magnificent examples of Gandhara art now grace museums all over the world.

The Buddhist monastery of Takht-i-Bahi (second–fifth century AD), situated on a major trade route linking the north west to the Swat Valley and western India, was one of the greatest monasteries in the Gandhara region.

A strong Western influence is apparent in the sculptures of Gandhara. The image of the Buddha has Greek features and, often, draped garments similar to those in classic Roman sculpture. Forms were carved from the bluish-grey stone of the region known as chloridized schist. The art form reached its zenith in the second century AD and then began to decline. During the Gupta period (c. AD 320–500) Buddha's hair was portrayed in small flat curls, his robe without folds. At the same time, Shiva began to be depicted with four arms.

Stucco gradually replaced stone and continued to be used until around the fifth century AD, when the White Huns invaded with sword and fire and laid waste the Gandhara region.

Temple Art and Architecture

Patronage of the arts in India was traditionally centred on the courts and the great temple establishments which flourished under royal endowment. It was the temples which most often survived political upheavals and provided continuity of patronage for the artists and craftsmen in their service. The founding

of temples and their enrichment were seen as worthy acts for virtuous rulers. Temples became centres of study and the application of skills in art and architecture, manuals of the arts (*sastras*) were compiled and a remarkable degree of continuity ensued. In northern India these temple treasure houses of traditional arts often fell victim to invaders. However, the temples of southern India survived and serve as the great repositories of Hindu culture and values.

The awe-inspiring artworks found in the magnificent rock-hewn temples of Elephanta and Elura stand as a tribute to the skill and artistry of their creators. Dating from about the sixth to the eighth century AD they are examples of the finest sculpture in the history of the subcontinent.

Elephanta is an island a few miles off Bombay where a great temple to Shiva was carved from rock. Though mutilated by the Portuguese in the sixteenth century, one image survived intact: the 18-foot-high image of Shiva in all his aspects: the creator, the destroyer, the keeper of the cosmos.

Elura is a place of pilgrimage for Buddhists, Jains, and Brahmans. Along the dark volcanic mass of rock, temples stretch for two kilometres. A monolithic interpretation of Shiva's Himalayan hermitage, Kailasanatha is the masterpiece of the Rashtrakuta dynasty (7th–5th century BC). According to Brahmanic lore, the supreme deity, Shiva, sits in perpetual meditation amid the ice-capped peaks of the Himalayas and controls the balance of the universe.

The exterior of the Kailasanatha temple was given a facing of white marble to simulate the icy Himalayan retreat. Inside the temple, sculpted images portray legends of the Ramayana. Kailasanatha is considered a supreme achievement in the discipline of sculpture. The artist's ability to create subtle gradations of relief and the dramatic use of light and shade are unsurpassed.

The earliest known metal sculpture found on the subcontinent is the lovely bronze figurine of a girl from Mohenjodaro. Centuries later, temple icons were created using a 'lost-wax' method of casting. Major deities were created of solid metal, often silver or gold. Temple sculptors were obliged to conform to strict conventions laid down in an ancient manual, the *Silpa-Sastras*. Poses and measurements were explained in great detail, but allowance was still made for artistic individuality. Devotional pieces were always created in the grounds of the temple to the sound of religious chanting, so that the finished object was consecrated to the temple.

One of the most famous metal sculptures in art history is the Nataraja, Lord of the Dance. A Chola bronze dated between the tenth and twelfth centuries AD, it depicts Shiva, the Divine Yogi, as a personification of the cosmic force that creates balance in, and eventually destroys, the universe. Embellished with numerous symbolic motifs, and with his flying locks of hair representing the holy rivers, the deity crushes the demon dwarf (materialism) beneath his foot. Many versions of this form, in varying sizes, can be seen in museums all over the world.

E. B. Havell, a great champion of Indian art, who was for many years principal of the Calcutta School of Art, refers in his book *Indian Sculpture and Painting* to an article in *Ars Asiatica*, Vol. III, in which the great French sculptor Auguste Rodin, a friend of Rabindranath Tagore, expressed his feelings about the Nataraja bronze. In Havell's words, 'Auguste Rodin has written an impassioned appreciation of this splendid bronze from a craftsman's point of view, protesting against the narrow prejudice which has labelled this as barbaric art'.

From earliest times, ivory was used as a decorative and sculptural medium. Carved ivory handles and plaques were part of the panoply of palaces and wealthy

establishments. Examples of Buddhist imagery in ivory from the late Gupta period are believed to have come from Kashmir, close to the mountainous monasteries of Tibet.

Qutb-ud-din Aibak, raised the first major stone mosque in India, in 1192, to commemorate the victory of the Afghan forces of Muhammed of Ghor, over the Rajput army of Prithvi Raj.

The Quwwat ul-Islam Mosque, is enclosed on three sides by stone columns taken from Jain and Hindu temples. The rectangular courtyard measures 210 by 150 feet and is dominated by the great Qutab Minar which originally rose to a height of 238 ft. The design was based on Afghan prototypes.

The Jamia Mosque, Delhi (AD 1628), took 5000 workmen six years to build. It was the focus of the commercial and social life of the city. It appears much larger from outside than it actually is. This is because of the false dome, an innovation introduced to India by the Persians.

Since Muslims were few in India it was customary to hire Hindus and Jains to work on architectural constructions. Thus Indian innovations entered Islamic architectural forms.

Early Paintings: Murals and Miniatures

In ancient India, painting was an integral element of festivals and feast days. Towns and villages were colourfully decorated with painted illustrations from the ancient epics of the gods, the Ramayana and the Mahabharata (thought to have been completed in the 2nd century BC), rendered on the front of dwellings or on scrolls and banners fixed on bamboo screens. Each ruler's palace had its own gallery of mural paintings, a tradition that continued through the centuries. The galleries were usually spacious quadrangles surrounding gardens and pavilions, and

sometimes gracing the women's quarters. There are many references to these galleries in ancient literature. To create lasting murals, the artists used a method similar to the fresco buono technique of Italy. They mixed colours with limewater and applied the mixture to a damp plaster surface. When dry, the painting was an intrinsic part of the wall.

The oldest and most important surviving examples of painting in the subcontinent can be found in the Ajanta caves, in the state of Hyderabad, Deccan. Hewn out of the rocks in the bend of a river, the thirty caves date from the first to the sixth century AD. It is believed that Buddhist monks inhabited the caves for centuries, and certain areas were reserved as shelters for travellers. Wealthy followers of the Buddhist faith paid for the Ajanta murals as a means of initiating novices or pilgrims into the life of the Buddha, as well as to ensure their own enlightenment. The paintings illustrated the stories of the Jataka, which described the Master's previous incarnations.

Although many of the paintings have disintegrated, enough remain to convince viewers of the remarkable skills of the artists involved. It is postulated that a group of artists worked together, the most experienced creating the compositions, while assistants worked under their guidance. Visitors have marvelled at the fluid realism of the varied scenes. Spiritual aspects of the Buddha's existence are contrasted with the exotic sensuality of the life he rejected. Many have admired the portraiture skills shown in the murals. Each individual has a unique characterization. The expressive hands and eyes of the women curve in harmony with their supple bodies. The murals tell a story that runs the length of the walls. On the ceilings, smaller panels portray numerous animals and plants, traditionally favoured subjects of artists from the subcontinent. By the seventh century AD, Buddhism in the subcontinent had declined. The Ajanta caves

were abandoned and eventually forgotten. Overgrown with shrubbery, they remained concealed for over a thousand years. They were discovered by chance in 1817, when a group of soldiers hunting tigers stumbled upon the entrance to one of the caves.

The earliest (c. ninth century) album or miniature paintings to have survived were executed on long, narrow palm leaves measuring about twenty-one inches in length. Intended for the education of Buddhist novices to the order, the leaves were written in Pali and often decorated with miniature paintings no more than three inches high. Scholars claim a similarity in mood and linear treatment between the large murals of the Ajanta caves and the miniatures of the albums. The folios were strung on cord and protected by covers of painted wood.

Jain albums, produced between the twelfth and fourteenth centuries, were similar in format, though the style of painting differed. Fewer colours were used and figures, usually shown in profile or three-quarter face, showed both eyes as though from a frontal facial angle, as in later cubist portraits. Paper came to the subcontinent from Persia in the twelfth century, but it was not commonly used until the fifteenth century.

The Subcontinent and International Trade

The subcontinent played an important role in the international trade of the ancient world, a role that became pivotal as the trade routes shifted from land to sea as documented by archaeological evidence and contemporary accounts. India's early international trade was essentially in luxury goods, including spices, aromatics, fine textiles, ivory, and gems. The prosperous Indian trade was dominated by Arab merchants who linked India into a complex trading system which stretched from Cairo to southern China.

Indian merchants, particularly from Gujarat, assumed a growing role in this trade during the second millennium. Textiles, especially painted and printed cottons, grew in importance as exchange commodities for the spices and aromatics of maritime South-east Asia. It was this highly profitable trade which first attracted the Portuguese, followed by other European merchants and adventurers to India, signalling the beginning of a new era.

The Coming of Islam

The first Muslim conquest in the history of the subcontinent took place in Sindh in AD 712. The 17-year-old Arab general Mohammad bin Qasim successfully laid siege to the flourishing port town known as Deebal (later called Bhambore), 40 miles from present-day Karachi. With that conquest, Islam first became established in the region. Under Arab rule, Deebal became an international centre of trade. Excavations of the site have revealed valuable ivory, metal, glass, shell, and bone objects. At the time of the Arab invasion, the craft of pottery had long been a tradition in Sindh; the Arabs encouraged the practice and added variations of their own.

In the tenth century AD, Turks, Persians, and Afghans entered the subcontinent by way of the northern passes. In accordance with the tenets of Islam, the iconoclastic Muslims assimilated geometric patterns into their aesthetic expression and architectural designs. Later, exquisite, hand woven silk carpets incorporated these patterns into carpets that became appreciated as treasures throughout the world.

Pre-Mughal India—The Islamic Tradition

Islamic kingdoms emerged in the subcontinent

as early as the eleventh century in the wake of the military campaigns conducted by the Afghan Mahmood of Ghazni. Lahore became the city from which much Islamic culture was introduced to the rest of India. Delhi was taken in AD 1192, and a Muslim sultanate was established there in AD 1210. This and succeeding sultanates ensured the spread of Islam from Sindh in the west to Bengal in the east. By AD 1335, most of the subcontinent, with the exception of the fiercely independent Rajput states, and Madurai in the extreme south, was under some degree of centralized rule from the Delhi Sultanate.

This fragile confederation proved ungovernable and quickly disintegrated into a series of independent states. The courts of these Muslim rulers generated a distinctive style in the arts. Elements of the local Hindu-Jain tradition, as practised by the local craftsmen whom the new rulers were obliged to employ, were teamed with aspects of imported Islamic culture, strongly influenced by the courtly style prevailing in Persia. The resulting Sultanate style, preserved in painting and architecture, was a blend which reflected Iranian style through the prism of Indian traditions.

Islamic Pottery and China

From as early as the ninth century, Chinese ceramics were widely traded to the Middle East. Of a quality previously unknown in the Islamic world, they were regarded as luxury goods. It was but natural that the local potters wanted to copy them. Not possessing the high-firing clays needed to make porcelain, they had to resort to copies in other materials. The first used was an ordinary yellow clay which they covered with an opaque white glaze to simulate the white-bodied porcelain. In the twelfth century, they developed quartz paste 'frit' ware which gave a white body but was

not as hard as porcelain. The Muslim potters were not content for long simply to copy the Chinese originals. They soon began to add colour and Islamic style patterns.

The Deccan Sultanates

The Sultanates emerged from the Muslim Bahamani dynasty which had been founded in 1347. During the fifteenth and sixteenth centuries, this broke up into five independent states centred on Bidar, Berar, Bijapur, Ahmadnagar, and Golconda. The architecture and a few surviving paintings from the late sixteenth century show that they retained the strongly Persian culture of the Bahamanis, though the influence of local traditions became increasingly pronounced, creating recognizably distinctive styles.

The court artists for example borrowed freely from the Persian conventions as well as using Hindu themes. The remarkable early seventeenth century cotton paintings of Golconda reflect an ancient Hindu craft but included motifs that satisfied a sophisticated Muslim luxury market in India and abroad, while also appealing to European traders.

Bidri, a metalworking technique, takes its name from the Deccani city of Bidar, where it is thought to have originated. Objects are cast from a high-zinc alloy and inlaid with silver, or brass and silver, before being covered with a mud paste containing potassium nitrate and ammonium chloride. When the paste is removed, the alloy dramatically changes colour from dull grey to a rich black, leaving the inlay unchanged. The craft still survives in the modern state of Andhra Pradesh.

The Development of Calligraphy

Islam forbids the use of icons or representations of figurative forms. Muslim artists thus sought

to express themselves aesthetically in a non-figurative art that would fulfil both religious and creative demands. Calligraphy was a perfect vehicle for these needs. The flowing Arabic alphabet easily translated into the exquisite linear rhythms of numerous styles of script. Curves, loops, circles, and lines made patterns of infinite variety. Devout Muslims strove to create suitable settings for the verses of the Holy Quran. Pages were edged with the finest of borders, and the graceful script was written in black and gold with the periods as tiny dots of red.

Calligraphy was not restricted to paper or vellum; it became an integral part of architectural design. Inscriptions carved in various kinds of stone or stucco embellished facades, walls, and monuments throughout the Islamic world. Later, during the Mughal period, different coloured stones were inlaid to form calligraphic passages from the Quran, particularly on mosques, mausoleums, and other major monuments.

The earliest styles of calligraphy used were the elegant, angular *kufic* script and the flowing, cursive *naksh*. In the eighth century, many other methods came into use, *thulth*, *muhaqqaq*, *rahan*, *tauqi*, *riqa*, *taliq*, and *bahar* continued to be popular. A style that combined *naksh* and *taliq* evolved in Persia in the fourteenth century. Named *nastaliq*, its graceful strokes with rounded curves created a superlative medium which has remained the most admired style of script in Asia to this day. In the subcontinent, few specimens of the calligraphy of the pre-Mughal period have survived except for those carved in stone.

The Mughal dynasty gave great impetus to the arts. During the sixteenth and seventeenth centuries, due to the patronage of Akbar, Jahangir, and Shah Jahan, the art of calligraphy reached supreme heights.

The Mughals

The great Mughal dynasty that began when Zaheer-ud-din Babur defeated the armies of the Afghan Lodhis at the battle of Panipat in 1526 initiated a new chapter in the history of the subcontinent. The Mughals created beautiful gardens, introducing new species of flowers, fruit, and trees from Central Asia and Persia. They built magnificent palaces, mausoleums, and mosques, and gave the subcontinent a unifying language, Urdu. The Mughal dynastic name was given to a school of art that has influenced aesthetic developments up to recent times. For a brief, prosperous period and for the first time, the subcontinent was united and religious tolerance was practised.

Mughal Textiles

Textiles played an important role at the Mughal court and were used not only for apparel but also as hangings and furnishings in the palaces and royal tents and as highly prized ceremonial gifts.

The Emperor Akbar took a personal interest in textiles, and imperial workshops were set up during his reign for the production of luxury fabrics such as Kashmiri shawls, woven silks, and carpets. Under Jahangir and Shah Jahan, velvets, silk brocades, embroideries, and painted cottons all added to the rich display at the imperial and regional courts, and many are depicted in the miniature paintings of the time. Fine textiles in the Mughal style continued to be produced in centres such as Ahmedabad and Varanasi up to the end of the nineteenth century. Fine goat hair was used instead of sheep's wool for many of the finest Mughal carpets. Combined with a silk foundation, it enabled weavers to produce some of the most densely knotted carpets known.

Babur (1526–30)

Babur was born of the dual lineages of the Timurids and Genghis Khan. Brave and battle-hardened from an early age, he was also highly intelligent and well educated. A man of considerable aesthetic taste, he loved to create around him a beautiful environment. He left a lively book of memoirs written in Turkish, which was translated into Persian during the reign of Akbar. His references to the poets and artists known to him include his perceptive opinions of their work. Babur was a skilled calligrapher who devised his own style of calligraphy, the *baburi* form, in which he wrote prose and poetry in Turki and in Persian.

Settling in Agra, near present-day New Delhi, Babur described in detail the birds, animals, and plants he saw there. He perceived the art of India as 'without the form of symmetry that separates the craftsman from the artist'. Babur found the cities shoddy, as though they had been hastily erected. He employed six hundred and eighty masons to build structures in Agra alone. He took note of Agra's harsh climate, and comparing the barren terrain with the lush fruit orchards of Kabul, at once set to work to plan a formal garden. It was laid out in the Persian style, a square enclosure divided by waterways and paths into four sections. There were terraces and pavilions, pools and fountains, and beautiful avenues to walk in. In time the Mughals successfully introduced roses, narcissi, figs, melons, and grapes to the subcontinent, and everywhere they planted tamarind trees.

Humayun (1530–56)

When Babur died in 1530, his son Humayun inherited the throne, but he was beset by wars and the treachery of his brothers. Driven out of Delhi in 1540 by Sher Shah Suri, the

Afghan ruler of Bihar, Humayun fled to Sindh where, in 1542, his son Akbar was born in Umerkot. Sending the infant with a retinue to Kabul, where his hostile and rebellious brothers would be obliged by Timurid tradition to safeguard the child, Humayun took refuge with the Persian ruler, Shah Tahmasp, and there began his life-long interest in painting.

It was during the reign of Shah Tahmasp, the second king of the Safavid dynasty, that a most beautiful *Shahnama* was commissioned, with two hundred and fifty-eight illustrations. In the mid-sixteenth century, Shah Tahmasp lost interest in album paintings, allowing his artists to seek other patrons. Some were drawn to Ottoman Turkey, others accompanied the emperor Humayun on his return to the subcontinent.

Shah Tahmasp put an army of fourteen thousand men at Humayun's disposal, and he set out to reclaim his kingdom. He returned to Kandahar and Kabul, rejoining his son in 1545. Humayun's brothers were forced to concede to his superior strength, and he remained in Afghanistan until the death of Sher Shah Suri in 1555.

The noted miniaturists Mir Sayyid Ali and Khawaja Abdus Samad returned to Delhi with the emperor and there formed the nucleus of an imperial studio of painting which created a number of masterpieces. The role of the Persian artists in the evolution of Mughal painting was very significant. Local artists were employed to work with the Persian masters, and skilled painters from northern India merged their own methods with the Persian style. Artists worked together to create a single painting. First the paper was burnished, then a fine outline was made. This was covered with a layer of white, on which the master artist again drew an outline. The surface was then ready to be worked on. Using the medium of gouache, each artist painted one section. One artist specialized in the

background, another in the figures, and a third in the faces of the subjects. Paints were ground by hand. Blue was made from lapis lazuli, red from iron oxide, yellow from a sulphide of arsenic, gold from gold leaf. Each colour was mixed with gum. Brushes were made from the fine hairs of a squirrel's tail.

The illumination of manuscripts was of central interest to the Mughals, and in India they were able to recruit highly skilled painters who were trained in the decoration of palm-leaf and paper manuscripts. The painting heritage of the Hindu and Jain communities was directly linked with earlier mural traditions which had flourished in the first millennium, particularly under Buddhist patronage. Hindu and Jain painting was in turn influenced by Sultanate paintings which evolved at the Muslim courts of northern India and the Deccan. However, in eastern India and the south, the Hindu artistic tradition remained largely untouched by these influences.

Miniature or album paintings were not intended to be hung on walls. They were carefully stored away, to be taken out, examined, and discussed on occasion. They illustrated stories and volumes inscribed by skilled calligraphers. Sometimes the paintings covered part of a page, sometimes the full page. It was the ruler who decided which incident of a story should be chosen for illustration.

Akbar (1556–1605)

The fourteen year old prince Akbar inherited the throne in 1556, but for four years suffered the regency of his uncle Behram Khan. Upon reaching his eighteenth year, Akbar chose his moment and declared himself emperor. A golden era began. A man of great acumen and wide-ranging intelligence, Akbar studied numerous subjects every day. He could neither read nor write, so books in several languages

were read to him. In this way he became one of the most learned men of his time. His biographers and the history books offer no logical explanation for Akbar's illiteracy. Mention is made of his early youth, spent in exile, where he had no time for study. This explanation is far from satisfactory. We know that Akbar took drawing lessons from the Persian masters in Kabul and that he was an extraordinary, brilliant man. Dyslexia seems to offer the best explanation for the emperor's disability. Whatever the reason, it resulted in scores of marvellously illustrated volumes, for during Akbar's rule, calligraphy on paper reached its zenith. Abul Fazl described Arabic calligraphy as 'spiritual geometry flowing from the pen of invention'. Calligraphy on monuments was at that time still in the developmental stage; it achieved true eminence under Akbar's immediate successors.

During the reign of Akbar, the Mughal style of painting became firmly entrenched. Manuscript production was prolific and established a sophisticated new style that combined elements from Persia and India with occasional influences from Europe. An atelier for making paper by hand was opened in Sialkot; cotton, bamboo, and fibre were used to create paper for the imperial studios. Akbar's royal patronage launched many an artist's career. Court artists illustrated histories of dynasties and texts which were translated into Persian for the emperor.

Akbar's most important early illustrated manuscript was the *Hamzanama*. Fascinated by the stories of the travels of Amir Hamza, Akbar ordered his scribes and artists to create a record of Hamza's adventures, half-legend, half-fantasy.

Here the cool tonalities and traditional Persian compositions gave way to a vibrant palette dominated by reds and oranges. There were scenes of vigorous figures and dynamic action. These heralded the beginning of a naturalistic rendering of people, animals, and



Figure 108:
Clay fertility symbols,
thought to be domestic dieties.
Mohenjodaro c. 2500 BC.



Figure 109: Company School of Painting, c. 1815–
1820. Company painting was often adapted by a
local artist to western taste.



Figure 110:
The Poet's Vision, Abdul Rahman Chughtai
(courtesy Nasir Shamsie).



Figure 111: *Cotton Pickers*, Zubeida Agha, 1947 (courtesy artist).



Figure 112:
The New Bengal School of Art,
The Father, Abanindranath Tagore.



Figure 113: *Landscape with Three Trees and Rock*, Ustad Allahbux (courtesy Wahab Jaffer).

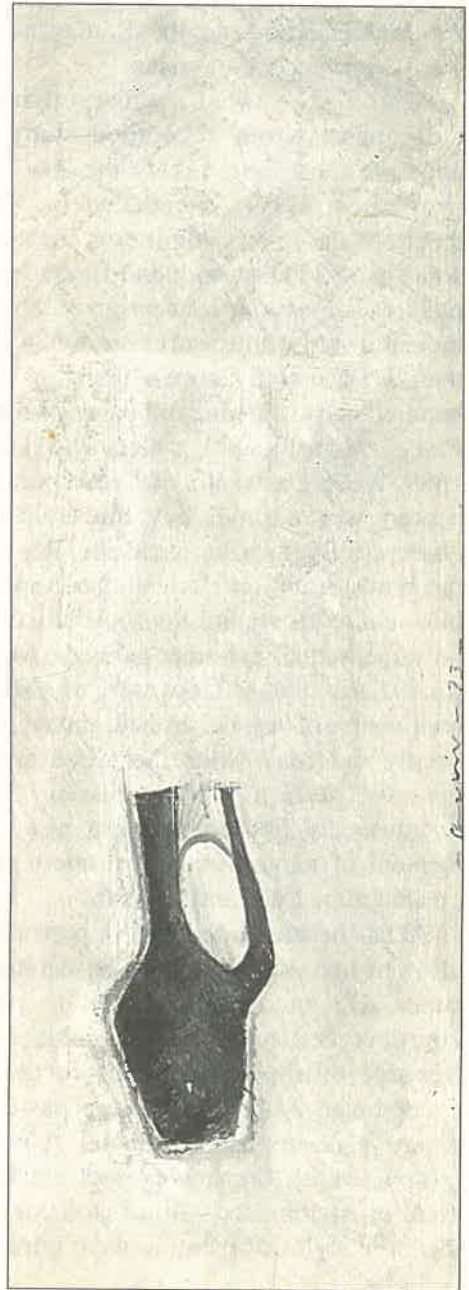


Figure 114:
Chianti Jug and Space,
Shakir Ali
(courtesy Shakir Ali Museum).

landscape. In all, fourteen volumes were written, each with a hundred illustrations. The work took fifteen years to complete.

Other, now world-famous, volumes that were produced at this time included the *Shah Nameh* (Book of Kings); *Tarikh-i-Alfi* (History of the World), written in several volumes; a history of the Timurids; and the Sanskrit epics, the Mahabharata and the Ramayana, which were translated into Persian.

Abul Fazl, Akbar's closest friend and biographer, wrote a detailed study of the emperor's life and times, the *Ain-i-Akbari* (Mirror of Akbar), completed in 1590. He mentions the ruler's admiration for the Indian court painters Daswanth and Basawan: 'Their pictures surpass our conception of things. Few indeed in the whole world are found equal to them.' Daswanth painted many of the one hundred and sixty-nine full pages of the *Razm-Nameh Mahabharata*, which was finished in 1589. When Daswanth, the son of a palanquin bearer, was a small boy, the emperor had observed him drawing on walls. Recognizing the boy's embryonic talent, the emperor had him sent to his studio. Soon, Abul Fazl wrote, he surpassed all the other painters. Akbar was particularly fond of Daswanth, who shared his own vision of mysticism and fantasy. He was deeply saddened when the gifted artist took his own life in a fit of depression. Some art connoisseurs have detected a new, serious element of naturalism in the court paintings created after Daswanth's death.

Akbar became interested in portraiture and allowed his own portrait to be painted many times. He encouraged artists to paint his courtiers and many of his noble subjects. Several of the court painters developed exceptional skills, which were passed on to future generations. Provincial schools, the patronized by the nobles and the rulers of smaller states, also flourished, and many different styles of painting were introduced.

Akbar was much more than a patron of, and authority on, art. He encouraged his artists to study perspective from the European engravings and illustrations presented to him by Jesuit priests. He also had an appreciation of Chinese art and found much to admire in the paintings of artists from Central Asia, as well as those of Persian and Indian artists. He sought to incorporate numerous influences into a new, synthesized art. Mughal paintings ranged from a picture painted by a team of artists to the work of a single artist.

Later, Akbar dreamed of uniting the entire subcontinent in a universal religion that encompassed the virtues of each faith. Far-sighted, compassionate, unprejudiced, and generous to all, Akbar was probably the finest ruler ever known to the subcontinent. Even now, five centuries later, his ideas are too liberal to be generally accepted.

To commemorate the birth of his son Saleem, prophesied by the holy man Sheikh Saleem Chishti, Akbar built the city of Fatehpur-Sikri, twenty-three miles from Agra, and filled it with palaces, mosques, schools, baths, and a mint. Here gathered the most talented artists of the age: calligraphers, artists, musicians, and intellectuals. One of the emperor's dear friends was the fabled singer Tansen who, it was said, could cause oil lamps to ignite and crystal to shatter with the sheer power of his voice. Though it was barely lived in, Fatehpur-Sikri is now a favourite tourist spot. It exhibits a glorious amalgam of Muslim, Rajput, and Hindu architecture, juxtaposing hanging balconies, latticed windows, pavilions, and the lotus motif of ancient India with elegant Islamic arches and domes. The tomb of the holy man Chishti was built within these red sandstone structures.

Akbar made dynastic alliances with several of the powerful Rajput families, taking wives from Jaipur and Mewar. At Fatehpur-Sikri, he provided each queen with a palace built in the architectural style appropriate to her faith.

Akbar's religious tolerance was a key reason for his reign being so fruitful and popular. He abolished taxes that had been levied on non-Muslims and gave many important posts and high positions to his Hindu subjects.

During the last twenty years of his reign, Akbar made Lahore his place of residence and built the magnificent Lahore Fort. More than one thousand workshops in Lahore produced Kashmiri shawls. At the emperor's bidding, carpet weavers from Persia settled in Lahore and Agra. They produced beautiful carpets patterned in the geometric style of Persia, which were in great demand. Nomadic by tradition, the court travelled extensively and often. Tented villages were set up each evening to house part of the court retinue. It is recorded that the floor of the Hall of Private Audience, just one of the emperor's 'tents', was covered by more than a thousand carpets.

Akbar's long and glorious reign came to an end in 1605; his son Saleem, who took the name Jahangir (Ruler of the World), inherited a united and flourishing empire.

Jahangir (1605-27)

Jahangir was thirty-seven when he became emperor. His mother was a Rajput princess, and he was the first of the Mughal rulers to look upon India as his homeland. A connoisseur of art, Jahangir prided himself on being able to recognize the work of each individual court artist. There were several developments in Mughal painting during his reign. Jahangir loved the beauty of nature and kept a detailed record of the flora and fauna he encountered. Under his discriminating patronage, artists such as Abu'l Hasan were celebrated for their technical skills and perceptive portraits.

A keen *shikari* (hunter), Jahangir was often accompanied on tiger hunts by his queen, Nur Jahan, reputed to be the most beautiful and powerful woman of her generation. He was also

a self-confessed addict of wine and opium.

Jahangir continued the tradition established by Babur, and for almost two decades wrote a comprehensive journal in his own hand. His text was often illustrated by paintings of the plants, birds, and animals he described. The Portuguese presented a turkey cock to the emperor; the bird had never been seen before in India, and it was a source of much interest. Jahangir had his renowned artist Mansur paint it; the painting is now in the Nehru Gallery of the Victoria and Albert Museum in London. Mansur was a master of nature painting and is credited with creating more than a hundred paintings in this genre.

Jahangir was not as interested in books as his predecessors; he preferred portraiture and a painted record of court events. Paintings of *durbars* and gatherings, as well as individual portraits, give us an illuminating insight into the lifestyle of the court. From Western religious art, Jahangir adopted the halo, and for the first time a Mughal ruler was seen surrounded by a great golden nimbus.

From his illustrious father, Jahangir inherited a strain of mysticism and sought the company of *sufis* and *sadhus*. They are often the subject of paintings of the era, seen discoursing with the emperor and his nobles. Hunting big game was another favourite theme. In these works, the artists created an atmosphere of suspense and drama, echoing the adventurous taste of Akbar.

Under Jahangir and Shah Jahan, the studio moved away from illustrating books to producing single studies of historical events, portraits of birds, animals, or flowers. These were then placed in beautifully decorated albums, alternating with examples of fine calligraphy. Most of the albums were broken up when they left the royal libraries and now survive only as isolated pages.

Jahangir shared his father's taste for western art. Sir Thomas Roe, the first official British ambassador, presented the emperor with

several paintings by British artists, which were carefully studied by Jahangir and his artists. Sir Thomas soon became aware of the power wielded by the emperor's beloved wife and duly reported the matter to the future Charles I of England.

Nur Jahan was indeed a force to be reckoned with. Her wise and noble father was the emperor's viceroy and largely responsible for the efficient and prosperous administration of the kingdom. Nur Jahan's brother Asif Khan also held a key post, and his daughter, who became known to history as Mumtaz Mahal, was married to the emperor's son. Nur Jahan plotted constantly to keep power in her hands. Her only child, a daughter born of her first marriage, was wedded to another of the emperor's sons, a weakling named Shehriar, and the queen confidently expected to enjoy total control under his reign. On her father's death, Nur Jahan was inconsolable. She had originally planned to build him a tomb of silver; then, opting for a more lasting material, she erected a tomb of marble at Agra. Embellished with pietra-dura work, the tomb's curving patterns, inlaid with beautiful gems, created delicate floral designs and calligraphy.

One of the best-loved monuments erected by Jahangir was the *Hiran Minar* (Deer Tower), built to commemorate a favourite pet deer. It stands about fifty miles outside Lahore, in Pakistan, and is now a popular picnic spot. Encircled by an artificial lake covering thousands of square feet, the five-storied building overlooks the surrounding landscape, once Jahangir's favourite hunting ground.

After Jahangir's death from asthma at the age of 59, Nur Jahan's power waned. The throne passed to Shah Jahan, the husband of her niece Mumtaz Mahal, who had his brother Shehriar executed. It is said that for the remaining eighteen years of her life, Nur Jahan wore only white (mourning) garments and refused to discuss matters of state. She occupied herself in the construction of her

husband's tomb in Lahore. It was set in a garden, with pools and pathways of red brick leading to it. A low, rectangular building flanked by four tall minarets, it is a fine example of uncluttered elegance. Close by, Nur Jahan built a smaller tomb for herself. On it is inscribed the epitaph she wrote for herself:

Upon my grave when I shall die
No lamp shall burn or jasmine lie
No candle with unsteady flame
Serve as reminder of my fame
No bulbul chanting overhead
Shall tell the world that I am dead.

(Translated by John Bowen)

Shah Jahan (1627–58)

Shah Jahan is best remembered for the remarkable architectural achievements of his reign. Following the death of Jahangir, Shah Jahan became ruler by the sheer force of his power and ability. To ensure peace, he ordered the execution of every one of his kinsmen with a claim to the throne. He moved his capital from Agra to Delhi and made that city famous far and wide. The Jumna River irrigated a large park of great beauty, which possessed all of the elements so beloved of the Mughals, avenues of trees, great stretches of grass, flowers, pavilions, waterways, fountains, and pathways. The emperor had a 400-mile-long road built linking Delhi, Agra, and Lahore. In each of these major cities, he built magnificent marble palaces. During the reign of Shah Jahan, the floral motif so favoured in Mughal architecture became more conspicuous. One panel alone is said to have contained a flower consisting of one hundred gems.

The emperor kept his precious miniatures and pages of calligraphy in ornate albums. Often the calligraphy was sumptuously bordered and decorated with geometric or floral designs. Matchless examples of carved

jade were fashioned at his bidding. A white nephrite jade cup, from which he drank his wine, is now in the Nehru Gallery, Victoria and Albert Museum, London.

Shah Jahan had several jewelled thrones created, including the legendary Peacock Throne, a triumph of the jeweller's art. Rich enamel and inlay work was the setting for some of the most precious gemstones in the imperial collection. Under Shah Jahan, artistic activities of every kind flourished.

Many foreigners travelled to the subcontinent in the 1600s seeking trade, employment, or adventure. From them come several accounts of life in India at that time. Shah Jahan was by all accounts a handsome man. His trimmed beard was emulated by his courtiers and nobles. He patronized musicians and poets as well as the artists who painted court events. One of his favourite pastimes was watching elephants fight, and these matches were often depicted in paintings. He was also a keen hunter, and the hunt continued to be a favourite subject. In many examples, the animals, figures, and foliage are brilliantly executed.

The emperor reduced the number of artists in the imperial studios, retaining only the best. The superfluous painters entered the service of nobles, who had numerous portraits of themselves painted, as was the fashion of the time. Shah Jahan continued to incorporate the nimbus in his portraits. Splendid scenes of the *darbar* show the ruler seated on the Peacock Throne irradiated with a golden glow. Surrounded by pomp and courtiers, the ruler was supreme. Some works contained more than forty individual portraits in miniature.

Delhi was famed as a splendid city with a dazzling court, renowned for literature and music as well as painting. Under Shah Jahan, painting reached new heights of refinement. Times were prosperous and peaceful, and men's thoughts turned to romance. Legendary lovers, whose stories were narrated in songs

and poems, also became the subject of paintings. Laila and Majnu, and Rupmati and Baz Bahadar, forever riding into the night, became favourite themes for artists and the court. Popular subjects were lovers seated together on balconies in the moonlight or a wistful, solitary princess standing under a tree. This was a romantic symbol of hopeless love, since princesses were restricted to dynastic marriages. Other paintings depicted beautiful ladies in flimsy, draped garments enjoying games and music with their handmaidens in attendance. Often a beauty awaits a lover; occasionally he too appears in the painting. There is considerable use of symbolism: heavy skies and lightning represent passion; flowers and birds betoken moods of hope or despair.

Shah Jahan was desolated by the death of his beloved wife, Mumtaz Mahal. He determined to build her a mausoleum such as the world had never seen. The work began in 1631 and was completed at the cost of millions of rupees sixteen years later—a perfect marble monument which defies description: the Taj Mahal at Agra.

Shah Jahan wanted his eldest son, Dara Shikoh, to succeed him. The prince, endowed with many of the liberal qualities of the Mughals, was Shah Jahan's favourite. An album of paintings once belonging to Dara Shikoh is now with the India Office Library attached to the British Museum in London. Commissioned and selected by the prince, the paintings in the album bear witness to his rare aesthetic judgement.

Of the emperor's four sons, however, it was his third, Aurangzeb, who prevailed. Known for his piety, Aurangzeb succeeded in convincing his brothers that he lacked all worldly ambition while brilliantly scheming to serve his own ends. Ultimately, he had his father imprisoned in the Agra Fort, within sight of the Taj Mahal. He fought and defeated Dara Shikoh, had all of his brothers executed, and seized the throne. It is said that his father

never again heard Aurangzeb's name without cursing him.

Aurangzeb (1658–1707)

Aurangzeb assumed charge of a powerful empire. His father lived a further eight years imprisoned in the Agra Fort and died a forgotten man. The early years of Aurangzeb's reign were comparatively peaceful. Then, attracted by the riches of the empire, covetous Afghan rulers joined forces with the Persian king to wage war on the subcontinent, but they were defeated by the armies of the Mughal ruler.

Aurangzeb completely changed the ambience of the court. He was contemptuous of poets and poetry, and withdrew patronage from the imperial studio. Many of his nobles continued to sponsor artists in secret, and numerous painters moved to the courts of distant kingdoms. Court rituals that had been adapted from non-Muslim customs—weighing the emperor against gold and precious gems, for example, or greeting the subjects daily from the balconies—were discontinued. The emperor banned music and the use of alcohol and opium at the court. He stopped the tradition of recording the history of the emperor's reign, though his was written in secret by a man from Delhi named Khafi Khan.

For his pleasures, Aurangzeb turned to hunting and to his harem, which he continued to enlarge. He was greatly interested in weaponry, and commissioned skilled craftsmen to fashion swords and daggers of exquisite artistry. Curved hilts made of ivory, crystal, and precious metals were often adorned with carved animal heads. Scabbards were delicately traced with patterns of silver and gold. A deeply pious man, Aurangzeb was also an accomplished calligrapher. He wrote out copies of the Holy Quran and distributed them as an act of charity. As an exercise in

humility, he sewed caps, which were also handed out to the needy.

The religious tolerance practised by Aurangzeb's forbears came to an end. Heavy taxes imposed on non-Muslims, which had been abolished by Akbar, were reinstated. Outraged, the powerful Rajput rulers formed alliances and Jats, Sheikhs, and Maharathas combined forces to achieve power. Even the emperor's sons took up arms against him.

The last two decades of Aurangzeb's life were spent far from his capital. He lived in sumptuous, tented camps, fighting to regain control of the Deccan. The administration of the capital and the provinces was left to governors, who proved unable to exercise just rule. Discontent and rebellion were dealt with ruthlessly. In many distant states, nobles seized power and began to assume privileges that had hitherto been the prerogative of the emperor.

At the age of eighty-eight, in the fifth decade of his reign, Aurangzeb died in the city of Ahmednagar in the Deccan. He left instructions that no grand monument should be raised over his grave and that his burial should be paid for from the sale of the humble caps of his own making.

Aurangzeb was a complicated, contradictory man. Although he despised the arts, he was a generous patron of science and learning. In many ways he differed greatly from his predecessors. Portraits of Aurangzeb in old age show a white-bearded ancient, always carrying the Holy Quran in his hand. It is unknown whether the portraits were approved by him or commissioned by others.

Aurangzeb's sons fought a bitter war for the throne, and the eldest, Shah Alam, proved victorious. He assumed the title of Bahadur Shah I, but his empire was beset by warring factions, and the Mughal dynasty never regained its former splendour.

Rajput Paintings

Throughout Rajasthan and the Punjab hills, kingdoms of various sizes were ruled by noble Rajput families. Fearless warriors, they had a unique and strict code of honour which was legendary throughout the subcontinent. One of the most powerful leaders of the Rajput clans was the ruler of Amber (Jaipur), who became Akbar's most trusted general. Cultural exchanges between these friendly courts increased with time to the mutual benefit of all concerned.

The paintings of the Rajput states initially owed nothing to Mughal traditions. The Rajputs were devout Hindus; their art was rooted in Hindu customs and folk art. Though each court had its own style and studio of artists, there were several common elements: a bold, uncluttered linear quality; strong, vibrant colouration; and such subjects as deities, court events, hunting scenes, and romantic incidents from ancient legends of human and divine love. They also shared an idiom of colour, with each hue symbolizing a different mood or emotion.

During the reign of Aurangzeb, and again in the eighteenth century when the Persian ruler Nadir Shah ravaged Delhi, painters from the Mughal capital took refuge in more distant states. They carried with them their own skills and artistic refinements. Many of the Rajput and Pahari (mountainous) states produced works of great consequence which can be found in major collections all over the world. Distinctive schools of painting developed. Courts such as those of Mewar and Bundi changed the subject of their paintings in the eighteenth century, from Hindu religious and literary subjects to portraiture and scenes of courtly life. Paintings from the state of Bikaner show a strong Mughal influence, while Kotah produced paintings depicting *shikar* and a wild terrain.

In the seventeenth century, Basohli, in the Punjab hills, became the centre of an important school of art. Basohli paintings are often distinguished by the addition of shining beetle wing-cases, to simulate precious gems and the raised dots of white paint depicting pearls which the artists used to adorn their works.

Also during the seventeenth century, in Ahmednagar in central India, a new style of painting was employed to illustrate verses that accompanied *ragas* and *ragini*, musical compositions written to be played at particular times of the day. This style of painting travelled to Rajasthan, notably Mewar, where the Ragamala (Garland of Melodies) School of Painting attained new heights.

In the eighteenth century, in centres such as Guler and Kangra, romantic paintings illustrating the legends of Krishna proliferated. However, the peace in the Punjab hill states was soon to be destroyed by wars with the Gurkhas of Nepal and by annexation, first by the Sikhs and then by the British. The smaller states did not survive; the larger states changed drastically. Rulers became collectors of foreign-made objects and paintings.

During the Sikh period (early to mid-nineteenth century), Ranjit Singh united the Sikhs for the first time. He assumed the title of Maharaja and ruled the Punjab from Lahore. He maintained friendly relations with the British and employed the services of foreigners at his court. Ranjit Singh's court painter was an Austrian, August Theodore Schofft, who, during his year's residence in Lahore, portrayed many of the court events in his lively paintings. A Sikh school of painting evolved, influenced by the work of artists in the nearby Punjab Hill States. Their subjects were the Maharajas and their families or scenes of the Punjab. After the death of Ranjit Singh, the struggle for power and the Anglo-Sikh wars ended with the British annexation of the Punjab in the mid-nineteenth century.

The Regional Court—Lucknow and Murshidabad

Lucknow, seat of the Nawabs Wazir of Oudh, was amongst the most luxurious and ostentatious of the later provincial courts, offering artists and craftsmen the lavish patronage they could no longer expect from the Mughal emperor. Shuja ud-Daula, who reigned from 1753 to 1775, was its greatest ruler. From the 1770s Oudh was subject to a degree of control by the East India Company. Though the culture was predominantly Iranian in character, later Nawabs adopted western manners and artifacts. They surrounded themselves with the trappings of European royalty.

The court of the Nawabs of Bengal at Murshidabad became a centre of artistic patronage under the able ruler Alivardi Khan in the mid-eighteenth century. This gave rise to a distinctive school of provincial Mughal painting and fostered the development of crafts influenced by Mughal rather than Bengali decorative traditions.

The British Raj

As British power and influence spread throughout the major cities of the subcontinent, European artists began to cast an eye eastward for patronage. Oil painting was introduced to the subcontinent in the eighteenth century by portrait painter Tilly Kettle. He was the first of several well-known portrait painters who enjoyed the patronage of Indian nobles as well as the foreign community.

William Daniells and his nephew Thomas were adventurous and resourceful as well as talented; they arrived in India in 1786 and spent the next eight years travelling throughout the country. Often they traversed countryside never before visited by Europeans.

When they returned to England in 1794, they arrived with hundreds of drawings, sketches, and watercolour paintings of landscapes, Mughal architecture, and Hindu and Buddhist temples. From this work they produced engravings and prints. A series of several volumes titled 'Oriental Scenery' was published, making a great impression on the British public and significantly influencing English architecture for some years. Among the great admirers of Oriental architecture was the Prince Regent, who assimilated Indian motifs into the Brighton Pavilion, built by John Nash between 1815–23. Throughout their lives, the Daniells, both of whom became members of the Royal Academy, drew upon their Indian experiences. Their work was instrumental in introducing the landscape of the subcontinent to Europe.

As a result of this exposure to European art, the Nawabs and the Rajas started to transfer their favour from existing court artists to European painters, filling their palaces with foreign-made objects and commissioning portraits in oils.

From soon after its establishment in the subcontinent, the East India Company regularly commissioned works of art, mostly portraits, landscapes, and architecture. During the early eighteenth century, sculptured figures and busts commemorated prominent personalities. The nineteenth century saw numerous statues of the Queen-Empress Victoria placed throughout the subcontinent, but these artistic developments hardly benefitted local artists.

The change in trends and a lack of patronage forced local artists into the open market. Obligated to adapt to the demands of the times, Indian artists began to assimilate European methods, learning perspective, chiaroscuro, and western naturalism. The British began to patronize local painters, commissioning them to make paintings of their houses, scenic surroundings, and various

aspects of the traditions and castes of the subcontinent. Indian artists had free access to festivals and ceremonies forbidden to outsiders. Thus, a hybrid genre of 'Company painting' evolved. It was named for the East India Company, which had supplanted the Nawabs as patrons. Many of the keenest collectors of 'Company painting' were senior Company officials, military officers, government functionaries, and their wives.

The focus in the art market shifted when Company painters surpassed European painters in popularity. Company painters were valued for the precision of their work and their attention to detail. The artist's creativity was subordinated to his ability as a copyist. Though often charming and skilfully presented, Company paintings were stylized and somewhat stereotypical.

Indian artists became adept at the realistic draughtsmanship and accurate presentation necessary for botanical and architectural paintings, much in demand by British patrons. Calcutta and Delhi were flourishing centres of Company art. In Delhi, artists reproduced Mughal architecture and monuments. They did a thriving business producing sets of portraits based on imagined likenesses of the Mughal emperors and their consorts. Miniature paintings on ivory, introduced by John Smart, were popular. Artists painted portraits on tiny tablets of ivory which were worn as cameos or used as decorative inlay on carved boxes.

The British never settled permanently in India. Individuals stationed in India expected to return home on completion of their term of service. Few were concerned with the aesthetic philosophy of the traditional art of the subcontinent. There were exceptions: men and women who had the ability to appreciate the various schools of miniature painting. Important collections, accumulated by connoisseurs in the eighteenth century, are now with the Victoria and Albert Museum, India House, and the British Museum; Indian

works of art also complement many private collections in Britain.

Many powerful factions in Britain were concerned with the plight of artisans and artists in the subcontinent. This resulted in the British government undertaking an ambitious plan to create art schools in Madras, Bombay, and Calcutta in the 1850s and Lahore in 1875. These institutes emphasized crafts and trained technical draughtsmen and printers in response to a growing demand for prints and illustrations. The schools aspired to impart a taste for the historical paintings the Victorians considered high art, as well as for the sentimental portraits and landscapes painted by British artists.

In the second half of the nineteenth century, the development of photography and the achievements of the trained lithographers, engravers, and draughtsmen produced by the art schools eclipsed the work of the Company painters. Photography was introduced to the subcontinent in the 1840s and by 1890 was an established profession practised by both foreigners and Indians. In 1856, the East India Company hired photographers instead of draughtsmen. Indian artists, many of them descended from Mughal court painters, were forced to look to other professions to earn their bread. Some found work designing for European firms.

By the end of the nineteenth century, salon art was well established. An art gallery was launched in Calcutta under official patronage. Art societies, so popular with Victorian society, flourished.

The most popular artist of his era, Raja Ravi Varma (1848-1906), was a member of the royal court of Travencore. He taught himself to paint in oils, though his knowledge of western painting was gleaned mostly from prints and illustrations. He achieved considerable success as a portraitist and was the forerunner of a group of Indian painters who began to paint Indian subjects in a

western academic style. His paintings depicted scenes from Hindu mythology, the Ramayana, the Mahabharata, and the epic works of Kalidasa. Such was his popularity with the British and with Indian nobles that he aspired to reach a wider audience in the hope of influencing popular taste. In 1892, he set up an oleograph press in Bombay and began to market his prints throughout the country. His work began to go out of fashion in the early part of the twentieth century with the rise of the Orientalist Movement—the New Bengal School. Within a decade of his death, Raja Ravi Varma's popularity was at an end.

In Bengal, a nationalist movement initiated by the Tagore family grew rapidly and was to create a bitter division among diverse schools of thought.

The New Bengal Movement

At the turn of the century, a leading literary figure of Bengal, Rabindranath Tagore, stimulated a growing nationalistic cultural awareness. In 1880, he introduced the genre of short-story writing and modernized the Bengali language, using a simple, unpretentious style of writing.

He despised the prevailing academic system of the subcontinent, and established a school of his own in the countryside. Here under the trees, students would work unburdened by exams. The school, Kala Bhavan Santiniketan (Abode of Peace), which opened in 1901, was followed two decades later by a university that emphasized art and culture in the curriculum. Many distinguished artists emerged from this institute.

In 1913, Rabindranath was awarded the Nobel Prize for Literature for his poem 'Gitanjali'. He began to paint seriously late in life. During the last seventeen years of his long life, he was deeply involved in painting,

creating fantastic birds and animals and, later, monumental figures and expressive faces. He called his urge to paint 'the last affair'. Painting in an uninhibited, contemporary style, Rabindranath achieved considerable success, exhibiting his work in Europe. It was at his instigation that the Bauhaus artists from Weimar, including Paul Klee and Vasily Kandinsky, exhibited their work in Calcutta in 1922.

The discovery of erstwhile forgotten chapters of history gave art a new direction. The chance discovery of the Ajanta caves in 1817, and the seals of the Indus Valley Civilization in 1921, caused artists to reassess their roots. A new art form emerged from the Calcutta School of Art inspired by the traditions of fresco and album paintings, assimilating a Japanese wash technique. The movement was led by Ernest Binfield Havell and Rabindranath's nephew Abanindranath Tagore, and initially was supported by Gaganendranath Tagore. It gave birth to the Neo-Bengal School of Art, the devotees of which were known as the 'Orientalists'.

Havell, who from 1886 to 1906 was the principal of the Calcutta School of Art and keeper of the Calcutta Government Art Gallery, played a significant role in establishing the New Bengal Movement. Deeply critical of British policies on art, Havell was dedicated to the task of reorganizing art education along Indian lines. He wrote numerous books on Indian painting, sculpture, and archaeology, and spoke out fearlessly against the establishment. A breakdown in health necessitated Havell's abrupt departure from India, but he continued his work from England, striving to bring about a re-evaluation of the art of the subcontinent. In 1910, Havell became a founding member of the India Society.

Abanindranath Tagore, an artist of distinction, was a member of the faculty of the Calcutta Art School under Havell. After his friend's departure, Abanindranath became

the principal of the school. Attracted by the art movement in India, European and Japanese artists came to study with Abanindranath. The New Bengal School of painting produced visuals of suffused colour and hazy outlines by washing off successive layers of watercolour paint from paper surfaces. The paintings were generally small in scale and romantic in mood. Rejecting the naturalism of western methods, the artists sought to draw inspiration from an inner vision rather than externals. The movement had the backing of pan-Asianists, theosophists led by Annie Besant, and numerous followers worldwide. The movement spread throughout the subcontinent as Calcutta-trained teachers joined the staffs of existing schools. The most outstanding teacher and artist from among the Orientalists was Nandalal Bose, who became the principal of Santiniketan. His exquisite paintings can be found illustrating books of poems and classical myths.

The Orientalists first exhibited their work in Europe in 1914. Artists adhering to the Naturalist School—Herman Majumdar for example, known for his sensual 'wet sari' figure paintings, and the impeccable draughtsman Atul Bose—organized rival art publications in which they could circulate reproductions of their work. The most challenging and most bitter opposition to the movement came from the Sir Jamsetji Jeejibhoy (known as the Sir J.J.) School of Art, Bombay, headed by Solomon Gladstone. Gladstone established a course of mural painting based on large-scale figure studies and succeeded in winning for his students the commission for the decoration of one of Lutyens' New Delhi buildings. Anxious to demonstrate impartiality, the British government then awarded the commission to decorate the newly opened Oriental Society building in London to the Orientalists.

Rabindranath Tagore was not convinced of the validity of either of these movements. He

felt there should be no limits to art and that east and west could learn from each other. Rabindranath was the forerunner of an aesthetic upheaval. It came in the form of a slim young woman, the remarkable artist Amrita Sher-Gill.

Amrita Sher-Gill, born in 1913, returned to India from the Paris Ecole Nationale des Beaux Arts in 1934. It was a time of exciting contemporary art movements in the west. Urged by her French teachers to stay on in Paris, where she had achieved considerable success, Sher-Gill answered, 'Europe belongs to Cezanne and Gauguin and many painters; India belongs only to me.' Sher-Gill's paintings of the hill tribes and people of the rural areas speak eloquently of her feelings for her native soil and personify the art philosophy of Rabindranath Tagore.

Sher-Gill died tragically early, a mere 27 years old, in Lahore in 1941. A posthumous exhibition of her work was held at Faletti's Hotel. Although she used contemporary western techniques, Sher-Gill was essentially an artist of the subcontinent. She brought a modern idiom to the great cultural traditions of the past.

Jamini Roy found his own path to modernity through the freedom and simplicity of the folk art of Bengal villages. In the 1940s, Maqbool Fida Hussain, Francis Newton Souza and S. H. Raza formed the Progressive Artists' Society in Bombay. All became artists of international repute. M. F. Hussain remained in India while Raza settled in Paris and, for ten years during the 1950s, Souza was the most featured artist on the London art scene.

Modern Art in Pakistan

The partition of the Indo-Pakistan subcontinent, and the emergence of Pakistan on 14 August 1947, gave rise to an unprecedented cross-migration of people from

one country to the other. There was also considerable wealth in the form of art and ancient sculptures transferred in the process. It was a time of upheaval, resettlement, and establishment, not conducive to aesthetic and cultural activity.

Known as the 'Father of art in Pakistan', Abdul Rahman Chughtai (1899-1975) was born in Lahore. His involvement with the Mayo School of Art spanned several years, first as a student, then as a teacher. Sent by the Mayo to study photo-etching methods in Calcutta, in 1916, A. R. Chughtai met the leading exponents of the New Bengal School of Art but was never one of their group. It was Chughtai's intention to form a Punjab Group of artists.

On a visit to Europe in 1932, Chughtai studied techniques of printmaking at the Central Institute of Art, London. By 1947, the artist had already accomplished an important body of work and was widely known in art circles throughout the subcontinent. He painted in his own style, unmoved by changing trends around him.

Thoroughly conversant with all aspects of etching and engraving, Chughtai left a large body of work: etchings, engravings, drawings, and superb watercolours. Many are housed in the Chughtai Museum, Lahore. Other works are exhibited in the Museum of Modern Art, New Delhi, and included in important private collections.

Ustad Allahbux (1895-1978), was apprenticed to a sign writer at the age of five, and in his teens painted scenic backdrops for drama groups. This experience endowed his work with an element of fantasy. He acquired the patronage of Rajas and princes, who commissioned paintings depicting the Hindu pantheon of deities. After 1947, Ustad Allahbux won acclaim once more for his paintings of the colourful traditions and festivals of the Punjab.

In Pakistan, an infra-structure had to be built up from the grass-roots in every major city of the country except Lahore. In the historic city of the Mughal rulers, the Mayo School of Arts and Crafts was established in 1875. A Fine Arts department was established at the Punjab University in 1940 by Anna Molka Ahmed, who worked hard to establish an art curriculum. She enlisted the assistance of the distinguished artist and teacher, Khalid Iqbal.

Zainul Abedin (1914-76) began as a painter portraying dreamy, idyllic scenes of the countryside of Bengal in the Orientalist manner. The Bengal famine of 1943, which claimed three million lives, radically altered his outlook and revolutionized his work. Crowding into the city of Calcutta, seeking scraps of food to keep themselves alive, came skeletal, starving hordes from the rural areas who died in thousands on the streets. The young artist, helpless and shaken to his innermost being, made his way home every night to express his frustration with furiously powerful sketches on paper, board, or anything that came to hand. The first of the Bengal Famine series was with terrible irony titled *Madonna and Child*. It showed the emaciated dead body of a woman with a starving infant at her breast.

Zubeida Agha (1922-97) began to paint in the 1940s tutored by B. C. Sanyal and Mario Perlinger, who taught her to paint ideas rather than forms. Her first exhibition of paintings, held in Karachi in 1949, was the first solo exhibition of abstract paintings to be shown in Pakistan. It caused a media controversy which raged for two months. Following the exhibition, she joined the Ecole des Beaux Arts, Paris, returning to Pakistan in 1953.

A Lahore Group was formed in the 1950s which included Moyene Najmi, Abdul Jalal Shemza, Miriam Habib, S. Ali Imam, Ahmed Parvez, Shaikh Safdar, and Qutub Sheikh. They showed their work together in exhibitions and studied modern art philosophy and movements.

Committed to the analytical intent of Cubism and its geometric connections, Shakir Ali (1916-75), when he joined the faculty of the Mayo School of Art in 1952, opened up new vistas for younger artists, and an exciting art era began. Well schooled in both eastern and western art philosophies, he attracted a lively group of aspiring artists around him.

The Mayo School of Arts and Crafts became the National College of Art in 1961, with Shakir Ali becoming the first Pakistani principal. Heading the department of miniature art were Haji Mohammed Sharif (1889-1978) from 1945-66, followed by Sheikh Shujaullah (1912-80). After Sheikh Shujaullah, his student Bashir Ahmed took over the department of miniature painting, where he initiated a revitalization of the classic art.

In Lahore, Zubeida Agha, Zainul Abedin, and Shakir Ali pioneered a modern art movement in the 1950s, while in Karachi, artists from all corners of the subcontinent gathered.

Fyzee Rahamin (1880-1964), the distinguished portraitist, who worked with John Singer Sargent in Europe, set up his own gallery, 'Aiwan-i-Raffat', at his residence on Burns Road. Ajmal Hussain, Hussain Mubarak, S. H. Askari, and Nagi were among the first to settle in Karachi; other artists followed. Young painters, eager to explore contemporary ideas,³ met regularly at Nagi's studio in Saddar.

Closest to an art movement in Pakistan has been the painterly use of Arabic calligraphy. Among the calligraph-artists outstanding in this field are Shemza, Hanif Ramay, Shakir Ali, Sadequain, Ahmed Khan, Gulgee, Asghari Mian Irani, Jamil Naqsh, and Zahoor ul Akhlaq.

During the 1950s, Sadequain and Gulgee emerged on the art scene and began to make their presence felt. Sadequain, whose Cacti series broke new ground in art, was awarded a prize for his work of this period at the Paris Biennale, France, in 1960.

Art Councils were established in major cities of the country; the facilities for performing arts, and art classes with venues to exhibit paintings, encouraged aspiring artists.

Artists searched for an idiom and a subject. Bengali artists painted sensuous landscapes, boats, and stylized village scenes. In 1960, Jamil Naqsh began to experiment, using women and pigeons as his subject.

As the awareness of contemporary art methods grew, Cubism became a major influence and many artists experimented with the division of space.

In Karachi, the first art school was established in 1965, the Karachi School of Art. That same year, the first commercial art gallery was initiated by Bashir Mirza. Ahmed Parvez (1926-79) returned to Pakistan from a decade in Europe. He was one of the most remarkable artists the country has produced.

During the 1970s, calligraphy and calligraph-art were at their zenith. Numerous artists worked in this style; the trend continued for a decade. Artists such as A. R. Nagori, Iqbal Hussain, Colin David and others continued to paint in their own individual ethos regardless of exhibitions.

A market for art began in Karachi. New collectors were encouraged by S. Ali Imam from the Indus Gallery, and by the interest of the media. Soon art galleries were opened in major towns of Pakistan.

A Fine Arts department was established at the Sindh University, Jamshoro in 1970. Universities in Quetta and Peshawar followed suit a decade later.

In the mid-80s, there was a revival of interest in the discipline of printmaking which took place in art schools throughout the country. It began from the National College of Art, Lahore, where the dormant printmaking department was restructured and equipped.

The decade of the 90s saw a decline in the popularity of calligraphy as a subject of fine

art. Several promising graduates emerged from art schools, the most outstanding being Shazia Sikander, whose extraordinary work in the genre of miniature painting earned her international acclaim.

The strongest individual influence on art has been that of Sadequain (1930–87), whose painterly use of calligraphy in the late 1970s and 1980s helped to change the direction of art for a decade. In an effort to take his art to the people, Sadequain executed monumental scaled murals in public places throughout Pakistan.

The contribution of women to the field of art in Pakistan has proved vitally important. Individual artists have played their part in establishing a strong, distinctive artistic growth. Key figures include Anna Molka Ahmed for her work in the field of art education, Zubeida Agha, pioneer of modern art, and Laila Shahzada, the first to find inspiration in the enigma of the Indus Valley civilization.

In an unprecedented gesture, in 1999, Jamil Naqsh donated 1000 paintings to a museum in Karachi that carries his name. Initiated by a trust, the modest museum is the first step towards a full-fledged Museum of Art that will house Naqsh's oeuvre. Thus, through the efforts of individuals and the talent of the creative cadre, art has been firmly established in Pakistan.

Gulgee is another artist concerned with housing his works and in this context has built a vast gallery where his work, and that of his son Amin, will be permanently on display.

Extreme individualism and diverse influences generated a plethora of styles from abstraction to visual metaphor. As yet, no distinctive art movement has evolved in Pakistan. There is a Punjab Landscape School of Painting, initiated by Khalid Iqbal. In Karachi, a school of 'on-spot' watercolour landscape painting sprang from the Karachi School of Art, and was fostered by Abdul Hai.

Artists in Pakistan are aware of international art developments; many are widely travelled. Exhibitions of artworks by Pakistani artists have been shown in several foreign countries, and there have been representations at international seminars and art events.

Though the exposure may be regarded as slight, yet it has influenced a re-evaluation of the definition of art and aesthetics. A seemingly global inclination to shape art into a commodity vulnerable to changing trends has led local artists to examine their roots, while keeping abreast of post-modern developments.

LANDMARKS IN THE ANCIENT WORLD

2,000,000 BC Earliest known toolmaking.

30,000–25,000 BC The Venus or Woman of Willendorf was carved (Naturhistorisches Museum, Vienna).

28,000 BC Earliest known cave paintings.

25,000–20,000 BC Remarkably well detailed animals of baked clay were being made in Germany. Others made of bone and ivory may have been worn as amulets, such as the carved ivory mammoth found in the Vogelherd Cave, Germany.

16,000–14,000 BC Lascaux paintings. Large caverns in the Lascaux caves in France were painted with great bulls, 16 ft long.

10,000 BC Invention of the bow and arrow.

4000 BC Emergence of the world's first civilization—that of the Sumerians, in Mesopotamia.

3500 BC Invention of the wheel and the plough—Mesopotamia; Invention of the sail—Egypt.

3000–3500 BC Head from Urak: A life-size (8 inch) white marble face of a woman discovered in Iraq is carved with extraordinary sensitivity and delicacy. Incisions on the forehead, thought to represent eyebrows, were originally filled with lapis lazuli. The eyes are thought to have been fashioned from shell and stone, the head covered with gold or copper hair. Holes drilled into the back are thought to have been intended for attaching the mask to a wooden cult figure. (Now in the National Museum of Iraq, Baghdad.)

3200 BC The Palette of Narmer: Lower and Upper Egypt were unified about this time by Narmer, the first king of the First dynasty. His likeness and actions were carved on a votive palette of carved schist (a crystalline rock) (Egyptian Museum, Cairo).

3000 BC Development of Cuneiform script in Mesopotamia; Cycladic figures were being carved (now in the Athens Museum).

2685 BC Harp from Ur: A harp discovered in a royal burial place in Ur, Mesopotamia, has a soundbox terminating in a realistically fashioned

head of a bull, made of lapis lazuli and wood with gold leaf. The panel beneath is delicately inlaid with shell to represent four fantasies involving animals impersonating humans (in the University Museum, Philadelphia).

2650 BC The Great Sphinx carved of stone, and the Pyramid of Khafre.

2580 BC Rahotep and Nofret: Amazingly life-like statues of the royal couple Rahotep and Nofret, sitting on thrones, were carved in limestone and painted. Made to be installed in a burial place, the statues were, as was the general custom, intended to be viewed from a frontal angle only.

2300–2200 BC Stele of Naramain: Grandson of Sargon, the Akkadian conqueror of Sumer, Naramain fought the Persian frontier tribes. Carved to celebrate a victory is a stele in which Naramain appears twice the size of his soldiers. Indicating a mountainous country is the climbing posture of the soldiers, and the trees and a conical hill. This is the first indication of landscape in the history of art (Victory Stele of Naramain, 80 inches high, now in the Louvre, Paris).

2100 BC Head of Gudea: When Akkadian rule collapsed in 2100 BC, only one city survived, Lagash (modern Telloh, Iraq) where literature and the visual arts flourished in an oasis of peace under the guardianship of the ruler Gudea. A head of Gudea 9 1/2 inches high made of a hard stone, diorite, shows a clean-shaven, sensitive face (Museum of Fine Arts, Boston).

2100–2000 BC Stonehenge.

2000–2400 BC The Head of the Priest-King of Mohenjodaro is dated from this time.

2000 BC Linear script developed in Crete.

1760 BC Stele of Hammurabi: Hammurabi, who made Babylon his capital city and ruled Mesopotamia from 1792–750 BC, is of great historical importance as the author of the oldest surviving code of laws. The code was inscribed on a stele under a relief of Hammurabi standing before the enthroned sun god at the summit of a holy

mountain or ziggurat (Stele of Hammurabi, 88 inches high. Louvre, Paris).

1600–1400 BC Palace at Knossos, Crete: Cretan civilization was centred on the palace. In the large halls there were plastered walls painted red, yellow, or blue, as well as figurative paintings and stucco reliefs.

1570 BC Beginning of New Kingdom of Egypt.

1500 BC Vaphio Cups: Two beautifully made little gold cups, three and a half inches high, were found in a grave at Vaphio near Sparta. A three-dimensional feeling of movement through space is displayed on reliefs worked on the cups, showing bull-catching scenes (National Archaeological Museum, Athens).

1500 BC Linear 'B' script was developed in Crete and Greece for palace accountants. Inventories of goods were inscribed on clay tablets in the later of two scripts, Linear 'B'. The language was a primitive form of Greek.

1480 BC Funerary Temple of Queen Hatshepsut: Hatshepsut's temple was built in a unique, dramatic style that was never repeated. A series of raised terraces were accessed by a ramp flanked by painted sphinxes. Walls were decorated with scenes from the Great Queen's life and 200 statues of Hatshepsut graced the courts and halls.

1417–1379 BC Temple of Amun-Re, Luxor: Amun-Re was proclaimed Egypt's national deity. Two temples were built in his honour, one at Karnak on the east bank of the Nile, and the second, two miles distant in Luxor. The two immensely wealthy temples were linked by an avenue of sphinxes. Much of the Luxor temple is still intact today.

1375 BC Head of Akhenaten: Akhenaten brought about a radical development in art-portraits and sculpture far more expressive than the bland masks which had gone before and would follow. The Pharaoh abandoned polytheism (worship of many gods) and introduced monotheism (worship of one god). The new religion focused on the sun as a symbol of heat, light, and life. Akhenaten composed a hymn to Aten—the name of the god—which is the first truly monotheistic composition in the literature of the world. Its theme is the love of god for all his creation (Staatliche Museum, Berlin).

1360 BC Nefertiti: One of the most famous of all Egyptian works of art is the head of Nefertiti, wife

of Akhenaten. It is ideally beautiful yet naturalistic. The carving is a masterpiece of sculptured form, head and headdress perfectly poised on the slender column of the neck (Staatliche Museum, Berlin).

1340 BC Mummy case of Tutankhamun: In the New Kingdom of Egypt, a great change in the style of architecture occurred. Pyramids were abandoned. To safeguard against thieves, the pharaohs were now buried in rock-cut tombs hidden away in the Valley of Kings. In spite of all efforts, Tutankhamun's was the only tomb to survive intact. During his short reign, Tutankhamun was persuaded to revert to the ancient religion of polytheism. A reaction set in and its effect on the visual arts can be seen in Tutankhamun's mummy case mask: not a trace of the subtle and sensitive naturalism introduced in Akhenaten's reign remains. The impassive, impersonal image of divine royalty has been reinstated (Cairo Museum).

1300 BC Treasury of Atreus: The Mycenaean or Helladic civilization built grandiose tombs of a geometrical precision. They consisted of a passage built into the side of the hill terminating in a chamber shaped like a beehive. Considered the finest of all is the 'Treasury of Atreus', or the 'Tomb of Agamemnon'. It is approached along a passage lined with rectangular, dark grey stone blocks. The entrance was enhanced with downward tapering, green limestone columns, carved with designs. Each of the massive blocks was carefully shaped according to precise calculations, in order to withstand the pressure from those blocks above and on either side. 47 1/2 feet in diameter and 43 feet in height, it is the largest unsupported space built anywhere in the world, until the Pantheon in Rome about a millennium and a half later.

1300 BC Statuettes from Xochipala, Mexico: Near Xochipala, some sixty miles inland from the Pacific coast in the modern Mexican province of Guerrero were found a number of clay statuettes dating from about 1300 BC. These are modelled with a skill and sensitivity to the three-dimensional form that suggests a well established tradition. Expressive and lively, these pieces are the earliest works of art that can be associated with the Olmecs, a group of people occupying the coastal area of Mexico before 1200 BC. The Olmecs had a strong, formative influence on the civilizations of early America.

1300–1100 BC Chinese Bronze wine vessel: The bronze vessels made for rituals of ancestor worship had a social and religious significance. First a model was made in clay and carved as if of stone. Negative impressions were taken by pressing slabs of clay onto the model. After further designs were incised on them, the piece moulds were fired, then assembled to form a mould into which molten alloy was poured.

It appears that there were about thirty types of vessels, ranging in size from six inches to four feet. Each had a specific purpose in ritual sacrifices of food and wine to ancestors. The relief decorations reveal an astonishing ability to create imaginative forms. Chinese artists sought vitality rather than naturalism, creating hybrid figures with wings, claws, fur, and beaks.

1257 BC Abu Simbel, Egypt: Rameses II (1304–1237 BC) had a vast temple carved out of rock at Abu Simbel dedicated to Amun, the god of Thebes, Re-Horakhte, the sun god of Heliopolis, Ptah, the god of Memphis, and himself. The central entrance is flanked by four enormous seated statues of Rameses sixty-five feet in height. Smaller, but still over life-sized statues of his family stand between Rameses's feet.

1027 BC Beginning of Zhou dynasty in China

900 BC Zhou Dynasty Bronze Tiger: The ninth century BC bronze tiger, approximately 10 x 29 1/2 inches displayed in the Freer Gallery of the Smithsonian Institute, Washington DC, is one of a pair intended as supports. The bronze is covered with a decorative surface patterning covering the body while a hole in the back indicates a socket for a joining structure.

800–700 BC Etruscan civilization begins.

575 BC Ishtar Gate from Babylon: Restored to some of its former glory, the glazed brick Ishtar Gate now stands in the Staatliche Museum, Berlin. It was once part of the royal palace of Babylon, which consisted of numerous relatively small rooms ranged around five courtyards. There, it is thought, the Hanging Gardens built by Nebuchadnezzar once existed. The walls of the throne room and of the processional way leading to the Ishtar Gate were decorated with animals in raised and moulded glazed brick. They form the most impressive example of Neo-Babylonian art.

Lions, long necked dragons sacred to the city god Marduk, horses, bulls sacred to the weather god Adad, in all 575, cover the exterior of the ceremonial gateway.

500 BC Persepolis, Persia: In 517 BC Darius I, grandson of Cyrus the Great, ordered the building of a new city—Persepolis. Completed by his successors seventy years later, Persepolis was an imperial setting for ceremonies. Tributes from all corners of the Empire were offered to the 'Great King, King of Kings, King of Persia', as Darius and his successors were titled.

400 BC Olmec head: The Olmecs inhabited the coastal provinces of Mexico, Veracruz, and Tabasco, from before c.1200 BC. Most of the surviving works of art of the area are of stone. Sixteen colossal stone heads up to twelve feet high have been found at various Olmec ceremonial centres. They are depicted wearing identical hemispherical helmets low down on their brows and having similar features, such as flattened noses and thick lips.

400 BC Nok Terracotta Head, Africa: Near the village of Nok, in Nigeria, a terracotta figure was discovered after which the 'Nok' culture has been named. In recent years, 150 boldly modelled, skilfully fired terracotta sculptures have come to light. Some are naturalistic representations of animals, some human figures, and some large, almost life-size heads. The almost ten-inch-high head displayed in the National Museum of Lagos may have been part of a full-sized statue. It has the stylized appearance of sculpture of the era: flattened nose, pierced nostrils, and eyes with segmental lower lids and pierced pupils.

196 BC The Rosetta Stone: A stone slab carved with hieroglyphics (Egyptian pictographs) and two other written scripts, the trilingual Rosetta stone was discovered near Rosetta in Egypt by one of Napoleon's officers in 1799. The scripts revealed that a highly advanced civilization had existed in Egypt two thousand years before the beginning of Hellenistic civilization (British Museum).

180 BC The Nike of Samathrace: Popularly known as the 'Winged Victory', it is believed that the statue, named after the island of its discovery, was created to commemorate a great naval victory in 190 BC. Accredited to the sculptor Pythokritos, it

is considered the greatest work of Hellenistic sculpture. The animated drapery, with the spread wings, gives the figure the appearance of being moulded by a great rush of wind (the sculpture can be seen at the Louvre Museum, Paris).

161-80 BC Bronze Equestrian Monument: The monument, showing the mounted emperor Marcus Aurelius, is the sole surviving imperial equestrian monument of its kind. It is one of the few Roman statues that remained on public view throughout the Middle Ages. Situated on the Piazza del Campidoglio, Rome, the statue shows the powerful horse as a symbol of martial spirit, and the emperor without weapons as a bringer of peace.

AN ABBREVIATED DICTIONARY

Abacus (ab'a. kus) The uppermost portion of the capital of a column, usually a thin slab.

Abstract In painting and sculpture, emphasizing a derived, essential character having little visual reference to objects in nature.

Academy A place of study, derived from the name of the grove where Plato held his philosophical seminars. Giorgio Vasari founded the first academy of fine arts, properly speaking, with his Accademia di Disegno in Florence in 1563.

Acroterium or acroterion (ak'roh-teeri-um) In Classical buildings, a figure or ornament usually at the apex of the pediment.

Addorsed Set back-to-back, especially as in heraldic design.

Adobe (a. do'bee) The clay used to make a kind of sun-dried brick of the same name; a building made of such brick.

Aesthetic The distinctive vocabulary and theory of a given style.

Agora (ag'o.ra) An open square or space used for public meetings or business in ancient Greek cities.

Alabaster A variety of gypsum or calcite of dense, fine texture, usually white, but also red, yellow, grey, and sometimes banded.

Alla prima (a'la pree'ma) A painting technique in which pigments are laid on in one application, with little or no drawing or underpainting.

Altarpiece A panel, painted or sculptured, situated above and behind an altar.

Anamorphic image An image that must be viewed by some special means (such as a mirror) to be recognized.

Apadana (ap.a.dan'a) The great audience hall in ancient Persian palaces.

Apse A recess, usually singular and semicircular, in the wall of a Roman basilica or at the east end of a Christian church.

Arabesque Literally, 'Arabian-like'. A flowing, intricate pattern derived from stylized organic motifs, usually floral, often arranged in symmetrical palmette designs; generally, an Islamic decorative motif.

Arcade A series of arches supported by piers or columns.

Arch A curved structural member that spans an opening and is generally composed of wedge-shaped blocks (voussoirs) that transmit the downward pressure laterally. A diaphragm arch is a transverse, well-bearing arch that divides a vault or a ceiling into compartments, providing a kind of firebreak.

Architectonic Having structural or architectural qualities, usually as elements of a non-architectural object.

Architrave (ark'i. trayv) The lintel or lowest division of the entablature; sometimes called the epistle.

Archivolt (ark'i. volt) One of a series of concentric mouldings on a Romanesque or a Gothic arch.

Arcuated (ar'kew. ate. id) Of arch-column construction.

Armature In sculpture, a skeleton-like framework to support material being modelled.

Atrium (ay'tree-um) The court of a Roman house that is near the entrance and partly open to the sky. Also, the open, colonnaded court in front of and attached to a Christian basilica.

Avant-garde (a.vahn.gard') Artists whose work is in (or work that reflects) the latest stylistic direction.

Axis An imaginary line or lines about which a work, a group of works, or a part of a work is visually or structurally organized, often symmetrically.

Basilica (ba.sil'i.ka) In Roman architecture, a public building for assemblies (especially tribunals) that is rectangular in plan with an entrance on a long side. In Christian architecture, an early church somewhat resembling the Roman basilica, usually entered from one end and with an apse at the other, creating an axial plan.

Batter To slope inward, often almost imperceptibly, or such an inward slope of a wall.

Beehive tomb A beehive-shaped type of

subterranean tomb constructed as a corbeled vault and found on pre-Archaic Greek sites.

Benizuri-e (ben'i.zur'i-ee) A two-colour method of Japanese printing in pink and green that produces strong colour vibration.

Black-figure technique In early Greek pottery, the silhouetting of dark figures against a light background of natural, reddish clay.

Blind arcade (wall arcade) An arcade having no actual openings, applied as decoration to a wall surface.

Bodhisattva (bo.dee.sot'va) In Buddhism, a being who is a potential Buddha.

Broken colour A painting technique using short, thick strokes laid over a ground colour to create rich textures and vibrant effects of light.

Buddha The supreme enlightened being of Buddhism, an embodiment of divine wisdom and virtue. Buddhist (adj.)

Burin (byoor'in); A pointed steel tool for engraving or incising.

Buttress An exterior masonry structure that opposes the lateral thrust of an arch or a vault. A pier buttress is a solid mass of masonry; a flying buttress consists typically of an inclined member carried on an arch or a series of arches and a solid buttress to which it transmits lateral thrust.

Calligraphy Handwriting or penmanship, especially elegant or 'beautiful' writing as a decorative art.

Camera obscura An ancestor of the modern camera in which a tiny pinhole, acting as a lens, projects an image on a screen, the wall of a room, or the ground-glass wall of a box; used by seventeenth- and eighteenth-century artists as an aid in compositional arrangement.

Caravaggisti (kara-va-gee'stee) Artists influenced by Caravaggio's dramatically contrasting dark-light effects; painters of 'night' pictures in the 'dark manner' (tenebrismo).

Carrier The material support for a painting (wood, canvas, wall, etc.).

Cartoon In painting, a full-size drawing from which a painting is made. Cartoons were usually worked out in complete detail; the design was then transferred to the working surface by coating the back with chalk and going over the lines with a stylus, or by pricking the lines and 'pouncing' charcoal dust through the resulting holes.

Cartouche (kar.toosh') A scroll-like design or medallion, purely decorative or containing an inscription or heraldic device. In ancient Egypt, an oval device containing such elements as hieroglyphic names of Egyptian kings.

Ceramics The art of making objects such as pottery out of clay; also, the objects themselves.

Chaitya (chight' yuh) An Indian shrine, especially a Buddhist assembly hall having a votive stupa at one end.

Chalice A cup or goblet, especially that used in the sacraments of the Christian Church.

Chevet (sheh. vay'); The eastern end of a Gothic church, including choir, ambulatory, and radiating chapels.

Chevron A zigzag or V-shaped motif of decoration.

Chiaroscuro (kee.ar'o.skoor'o); In painting or drawing, the treatment and use of light and dark, especially the gradations of light that produce the effect of modelling.

Cire perdue (seer pair-dew') The lost-wax process. A bronze-casting method in which a figure is modelled in wax and covered with clay; the whole is fired, melting away the wax and hardening the clay, which then becomes a mould for molten metal.

Cloister A court, usually with covered walks or ambulatories along its sides.

Closed form A form, especially in painting, with a contour that is not broken or blurred.

Coffer A sunken panel in a soffit, a vault, or a ceiling, often ornamental.

Collage (kul.lahzh'); A composition made by pasting together on a flat surface various materials such as newspaper, wallpaper, printed text and illustrations, photographs, and cloth. See also montage.

Colour field painting A style of painting characterized by radical simplicity (disciplined line) and purity of shape and colour.

Column A vertical, weight-carrying architectural member, circular in cross-section and consisting of a base (sometimes omitted), a shaft, and a capital.

Complementary colours Those pairs of colours, such as red and green, that together embrace the entire spectrum. The complement of one of the three primary colours is a mixture of the other

two. In pigments, they produce a neutral grey when mixed in the right proportions.

Connoisseur (kon.nuh.ser') An expert on works of art and the individual styles of artists.

Contour A visible border of a mass in space; a line that creates the illusion of mass and volume in space.

Cool colour Blue, green, or violet. Psychologically, cool colours are calming, unemphatic, depressive; optically, they generally appear to recede. See also warm colour.

Cro-Magnon (kro.mag' non) Of or pertaining to the homo sapiens whose remains, dating from the Aurignacian period, were found in the Cro-Magnon caves in Dordogne, France.

Cuneiform (kyoo.nee'ih form) Literally, 'wedge-shaped'. A system of writing used in ancient Mesopotamia, the characters of which were wedge-shaped.

Daguerreotype (dah. gair'oh. type) A photograph made by an early method on a plate of chemically treated metal or glass; developed by Louis J. M. Daguerre.

Diptych (dip'tik) A two-panelled altarpiece; also, an ancient Roman and Early Christian two-hinged writing tablet, or two ivory memorial panels.

Dolmen (dohl'men) Several large stones (megaliths) capped with a covering slab, erected in prehistoric times.

Dome A hemispheric vault; theoretically, an arch rotated on its vertical axis.

Dromos The passage to a beehive tomb.

Drum The circular wall that supports a dome; also, one of the cylindrical stones of which a non-monolithic shaft of a column is made.

Dry point An engraving in which the design, instead of being cut into the plate with a burin, is scratched into the surface with a hard steel 'pencil'. The process is quicker and more spontaneous than standard engraving and lends itself to the creation of painterly effects. Its disadvantage is the fact that the plate wears out very quickly. See also engraving, etching, intaglio.

Duecento (doo-ay-chain'toh) The thirteenth century in Italian art.

Earth colours Pigments, such as yellow ochre and amber, that are obtained by mining; usually compounds of metals.

Elevation In drawing and architecture, a geometric projection of a building on a plane perpendicular to the horizon, a vertical projection.

Embrasure A splayed opening in a wall that enfames a doorway or a window.

Enamel A vitreous, coloured paste that solidifies when fired.

Encaustic An ancient method of painting with coloured, molten wax in which the wax is fused with the surface by the application of hot irons.

Engobe (en-gohb') A slip of finely sifted clay used by Greek potters; applied to a pot, it would form a black glaze in firing.

Engraving The process of incising a design in hard material, often a metal plate (usually copper); also, the print or impression made from such a plate. See also dry point, etching, intaglio.

Entablature The part of a building above the capitals of columns and below the roof or the upper storey.

Etching A kind of engraving in which the design is incised in a layer of wax or varnish on a copper plate. The parts of the plate left exposed are then etched (slightly eaten away) by the acid in which the plate is immersed after incising. Etching is one of the most facile of the graphic arts and the one most capable of subtleties of line and tone. See also dry point, engraving, intaglio.

Facade Usually, the front of a building; also, the other sides when they are emphasized architecturally.

Faience (feye. ahnce') Pottery (except porcelain) glazed with compounds of tin; also, any glazed earthenware.

Fetish An object believed to possess magical powers, especially one capable of bringing to fruition its owner's plans; sometimes regarded as the abode of a supernatural power or spirit.

Fibula A decorative pin, usually used to fasten garments.

Figure-ground The visual unity, yet separability, of a form and its background.

Fillgree A delicate, lace-like, intertwined, ornamental work or design.

Fin de siècle (fan.duh.see'akl) Characteristic of the progressive ideas and customs of the last years of the nineteenth century.

Flamboyant Flame-like, flaming; applied to aspects of Late Gothic style, especially architectural tracery.

Flute or fluting Vertical channelling, roughly semicircular in cross-section and used principally on columns and pilasters.

Form In its widest sense, total structure; a synthesis of all the elements of that structure and of the manner in which they are united to create its distinctive character. The form of a work is what enables us to apprehend it. See also closed form.

Forum The public square or marketplace of an ancient Roman city.

Fresco Painting on plaster, either dry (dry fresco or fresco secco) or wet (wet or true fresco). In the latter method, the pigments are mixed with water and become chemically bound to the plaster. Also, a painting executed in either method.

Gargoyle In architecture, a waterspout (usually carved), often in the form of a grotesque.

Genre (zhahn' reh) A style or category of art; also, a kind of painting realistically depicting scenes from everyday life.

Gesso (jess'oh) Plaster mixed with a binding material and used for reliefs and as a ground for painting.

Glaze A vitreous coating applied to pottery to seal the surface and as decoration; it may be coloured, transparent, or opaque, and glossy or matte. In oil painting, a thin, transparent, or semi-transparent layer put over a colour to alter it slightly.

Gouache (goo. ahsh') Watercolour rendered opaque by the addition of a filler, such as gum. It has more body and dries more slowly than the transparent watercolour and lends itself to bright colour effects and meticulous detail. Also, a picture painted in this medium.

Graphic arts Visual arts that are linear in character, such as drawing and engraving; also, generally, visual arts that involve impression (printing and print making).

Graver A cutting tool used by engravers and sculptors.

Greek cross A cross in which all the arms are the same length.

Grisaille (greez. eye') A monochrome painting done mainly in neutral greys to simulate sculpture.

Grotesque In art, a kind of ornament used in antiquity—and sometimes called (imprecisely) arabesque—consisting of representations of medallions, sphinxes, foliage, and imaginary creatures.

Ground A coating applied to a canvas or some other surface to prepare that surface for painting; also, background.

Hatching A technique used in drawing, engraving, etc., in which fine lines are cut or drawn close together to achieve an effect of shading.

Hieroglyphic (high-roh-glif'ic) A system of writing using symbols or pictures; also, one of the symbols.

Icon A portrait or image; especially in the Greek church, a panel with a painting of sacred personages that are objects of veneration. In the visual arts, a painting, a piece of sculpture, or even a building regarded as an object of veneration.

Idealization The representation of things according to a preconception of ideal form or type; a kind of aesthetic distortion to produce idealized forms. See also realism.

Illumination Decoration with drawings (usually in gold, silver, and bright colours), especially the initial letters of a manuscript.

Impasto (im.pah'stoh) A style of painting in which the pigment is applied thickly or in heavy lumps, as in many of Rembrandt's paintings.

Impluvium A depression in the floor of a Roman atrium to collect rainwater.

Impost block A stone with the shape of a truncated, inverted pyramid, placed between a capital and the arch that springs from it.

Incising Cutting into a surface with a sharp instrument; also, a method of decoration, especially on metal and pottery.

In situ; (si'too) In place; in original position.

Intaglio (in. tal' yoh) A category of graphic technique in which the design is incised, so that the impression made is in relief. Used especially on gems, seals, and dies for coins, but also in the kinds of printing or printmaking in which the ink-bearing surface is depressed. Also, an object so decorated. See also dry point, engraving, etching.

Kiln A large stove or oven in which pottery is fired.

Lacquer A resinous spirit varnish, such as shellac, often coloured.

Lantern In architecture, a small, often decorative-structure with openings for lighting that crowns a dome turret or roof.

Lapis lazuli (la' pis la'zyoo. lye) A rich, ultramarine, semiprecious stone used for carving and as a source of pigment.

Lierne (lee. érn) A short rib that runs from one main rib of a vault to another.

Line The mark made by a moving point and having psychological impact according to its direction and weight. In art, a line defines space and may create a silhouette or define a contour creating the illusion of mass and volume.

Lintel A beam of any material used to span an opening.

Lithography In graphic arts, a printmaking process in which the printing surface is a polished stone on which the design is drawn with a greasy material. Greasy ink, applied to the moistened stone, is repelled by all surfaces except the lines of the drawing. The process permits linear and tonal values of great range and subtlety.

Local colour In painting, the actual colour of an object.

Lustre A thin glaze (usually metallic) sometimes used on pottery to produce a rich, often iridescent colour. Used particularly in Persian pottery and in majolica.

Magazine A room or building designed for storage.

Majolica (ma. jo'lik. ab) A kind of Italian Renaissance pottery coated with a whitish tin-compound enamel, brilliantly painted and often lustred.

Makimono (mah'kee. moh'noh) A Japanese horizontal scroll.

Maniera greca (man.yera'greka) A formal Byzantine style that dominated Italian painting in the twelfth and thirteenth centuries; characterized by shallow space and linear flatness.

Mass The effect and degree of bulk, density, and weight of matter in space. As opposed to plane and area (volume), mass is three-dimensional.

Mastaba (mah'sta.bah) A bench-shaped ancient Egyptian tomb.

Matte (mat) In painting, pottery, and photography, a dull finish.

Medium The substance or agency in which an artist works; also, in painting, the vehicle (usually liquid) that carries the pigment.

Megalith Literally, 'great stone'; a large, roughly hewn stone used in the construction of monumental, prehistoric structures; megalithic (adj.).

Miniature A small picture illustrating a manuscript; also, any small portrait, often on ivory or porcelain.

Modelling The shaping of three-dimensional forms in a soft material, such as clay; also, the gradations of light and shade reflected from the surfaces of matter in space, or the illusion of such gradations produced by alterations of value in a drawing or a painting.

Module (mod'yool) A basic unit of which the dimensions of the major parts of a work are multiples. The principle is used in sculpture and other art forms, but it is most often employed in architecture, where the module may be the dimensions of an important part of a building, such as a column, or simply some commonly accepted unit of measurement (the centimetre or the inch, or, as with Le Corbusier, the average dimensions of the human figure).

Monochrome A painting in one colour; also, the technique of making such a painting.

Monolith A column that is all in one piece (not built up); a large, single block or piece of stone used in megalithic structures.

Montage (mohn'tahzh); A composition made by fitting together pictures or parts of pictures; also, motion-picture effects produced by superimposing images or showing them in rapid sequence. See also collage.

Monumental In art criticism, any work of art of unpretentious grandeur and simplicity, regardless of its size.

Mosaic Patterns or pictures made by embedding small pieces of stone or glass (tesserae) in cement on surfaces such as walls and floors; also, the technique of making such works.

Moulding In architecture, a continuous, narrow surface (projecting or recessed, plain or ornamented) designed to break up a surface, to accent, or to decorate.

Mural A wall painting; a fresco is a type of mural medium and technique.

Naturalism The doctrine that art should adhere as closely as possible to the appearance of the natural world. Naturalism, with varying degrees of fidelity to appearance, recurs in the history of Western art.

Nave The part of a church between the chief entrance and the choir, demarcated from aisles by piers or columns.

Necking A groove at the bottom of the Greek Doric capital between the echinus and the flutes that masks the junction of capital and shaft.

Necropolis (neh. krop' o. lis) A large burial area; literally, a city of the dead.

Objet d'art (objay-dar') A relatively small object (figurine, vase, etc.) of artistic value.

Oeuvre; (uh'vreh) The whole of an artist's output; literally, the artist's 'work'.

Palette (pal'it) A thin board with a thumb hole at one end on which an artist lays and mixes colours; any surface so used. Also, the colours or kinds of colours characteristically used by an artist.

Papyrus (pah.pye'rus) A plant native to Egypt and adjacent lands used to make a paper-like writing material; also, the material or any writing on it.

Plan The horizontal arrangement of the parts of a building, or a drawing or a diagram showing such an arrangement as a horizontal section. In **axial plan**, the parts of a building are organized longitudinally, or along a given axis; in a **central plan**, the parts radiate from a central point.

Plasticity In art, the three-dimensionality of an object; plastic (adj.).

Plein-air painting (plen.air) The representation of the observed effects of outdoor light and atmosphere practised by some late nineteenth-century Impressionists.

Plinth The lowest member of a base; also, a block serving as a base for a statue.

Pointillism The method of painting of some French Impressionists in which a white ground is covered with tiny dots of colour which, when viewed at a distance, blend together to produce a luminous effect.

Polychrome Done in several colours.

Porcelain Translucent, impervious, resonant pottery made of a base of kaolin, a fine white clay; sometimes any pottery that is translucent, whether or not it is made of kaolin.

Primary colours The hues red, yellow, and blue. From these three colours, with the addition of white, it is theoretically possible to mix the full colour spectrum. The primary colours cannot be produced by mixing other colours together.

Programme The architect's formulation of a design problem with respect to considerations of site, function, materials, and aims of the client; also, in painting and sculpture, the conceptual basis of a work.

Ramayana A Sanskrit epic telling of Rama, an incarnation of the Hindu god Vishnu.

Rayonnant The 'radiant' style in thirteenth-century architecture that is associated with the royal Paris court of Louis IX.

Realism The representation of things according to nature (without idealization).

Red-figure technique In later Greek pottery, the silhouetting of red figures against a black background; the reverse of the black-figure technique.

Sarcophagus (sar. kof' a. gus) A stone coffin.

Sculpture in the round Freestanding figures, carved or modelled in three dimensions.

Secondary colours The colours (green, orange, and purple) that result from mixture of pairs of primary colours.

Section In architecture, a diagram or representation of a part of a structure or building along an imaginary plane that passes through it vertically.

Severe style An early, pre-Classical, transitional style of mid-fifth-century Greek statuary that is formal but not rigid in pose and emphasizes the principle of weight distribution; a liberation from the Archaic limitations of frontal rigidity found in Egyptian portrait statues.

Sfumato (sfoo. ma'toh) A smoke-like haziness that subtly softens outlines in painting, particularly applied to the painting of Leonardo and Correggio.

Sgraffito (zgra. fee'toh); Decoration produced by scratching through a surface layer of plaster, glazing, etc., to reveal a different coloured ground; also, pottery or other ware so decorated.

Silver point A drawing technique involving the use of a silver-tipped 'pencil' on a paper with a white matte coating; also, the delicate drawings so made.

Still life A painting representing inanimate objects, such as flowers, fruit, or household articles.

Stucco Fine plaster or cement used as a coating for walls or for decoration.

Stupa (stoo'puh) A large, mound-shaped Buddhist shrine.

Style A manner of treatment or execution of works of art that is characteristic of a civilization, a people, or an individual; also, a special and superior quality in a work of art.

Stylus A needle-like tool used in engraving and incising.

Symmetry Aesthetic balance that is usually achieved by disposing forms about a real or an imaginary axis so that those on one side more or less correspond with those on the other. The correspondence may be in forms of shape, colour, texture, etc.

Trompe l'oeil (trohmp loy') A form of illusionistic painting that attempts to represent an object as if it exists in three dimensions at the surface of the painting; literally, 'eye-fooling'.

Value; The amount of light reflected by a hue; the greater the amount of light, the higher the value.

Vanishing point In linear perspective, that point on the horizon toward which parallel lines appear to converge and at which they seem to vanish.

Warm colour Red, orange, or yellow. Psychologically, warm colours tend to be exciting, emphatic, and affirmative; optically, they generally seem to advance or to project. See also cool colour.

Wash In water colour painting especially, a thin, transparent film of colour.

Watercolour A painting technique using pigment (usually prepared with gum) mixed with water and applied to an absorbent surface; also, the medium itself. The painting is transparent, with the white of the paper furnishing the lights. See also gouache.

Woodcut A wooden block on the surface of which those parts not intended to print are cut away to a slight depth, leaving the design raised; also, the printed impression made with such a block.

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About the Author

The well-known art critic Marjorie Husain has been a prominent figure in Pakistan's art circles for over two decades. Promoting local art and culture both in the country and abroad, she has arranged art exhibitions of Pakistani artists in foreign countries, written a history of art in the subcontinent for the Pacific Asia Museum, Pasadena, USA, and given numerous lectures both in Pakistan and abroad.

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