The Decorative Imperative

Harriet Jaffie

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THE DECORATIVE IMPERATIVE

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THE DECORATIVE IMPERATIVE

STATEMENT OF INTENT

Man possesses a deep psychological need to adorn himself and his environment. Those who disagree with this idea and go to extremes to refute it include religious orders of various denominations and certain art movements.

Historically, man has found the means by which to decorate his walls. The reasons for that decoration may vary with after-the-fact interpretations but nonetheless he did not leave the walls bare. In a lecture at the Men's College of London, December 10, 1881, William Morris said:

Ornamentation of a surface by work that is not imitative or historical . . . whatever material relief it may have is given to it for the sake of beauty and richness, and not for the sake of imitation or to tell a fact directly; all real art is ornamental . . . . Why should ornamental art exist? . . . Mankind has determined to have it regardless of cost or trouble though some believe it to be superfluous to life . . . . Suppose himself to be in a room in which he will have to pass a good part of his life, the said room being quite bare of ornament, and to be there that he may consider what he can do to make the bare walls pleasant and helpful to him; . . . the walls . . . because . . . the widest use of pattern/designing is the clothing of the walls . . . . There are those who would prefer to leave the bare walls alone. There are also those who when asked what books would furnish their rooms would answer 'none.' Both sets of these people would
be in an unhealthy mind. It is with healthy people art has dealings. The best art is pictured representations of men's imaginings; imaginings are always beautiful, but often stirring to men's passions, and aspirations and not sorrowful or terrible.

One hundred years after Morris, Barbara Gladstone, a prominent Manhattan gallery owner, says that man's need for realism and decoration must be expressed; he cannot live alone in starkness (of the International Style).²

Throughout civilization, in every culture and socio-economic stratum man has chosen "beauty," "decoration" and "adornment" to uplift his spirit in an otherwise boring, ugly, mundane existence. Gladstone supports this statement when she proclaims, ". . . Design and sensuous decoration can in fact be high art."³

According to Oscar Wilde:

Things are because we see them, and what we see, and how we see it, depends on the arts that have influenced us. To look at a thing is very different from seeing a thing. One does

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³ Ibid.
not see anything until one sees beauty. Then and only then, does it come into existence.  

I internalize and interpret that which G-d has created beautifully, not in an attempt to imitate it or represent it realistically but to see it architecturally, to investigate it structurally, applying that basic architectural form to a surface which is an integral part of the composition not merely a vehicle upon which to carry an image.

Each of my paintings has the potential of tapping into man's different emotions: as man responds to spirituality, desire, humor, etc. Each embodies sensuality and sophistication appealing to man's eroticism and intelligence.

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PART ONE

TRADITIONAL DEFINITIONS OF BEAUTY

Throughout history, mankind has demonstrated a positive need for decoration in his life, on his person, and in his environment (familial, social, and occupational). This need not only crosses all social barriers of class structure but also disregards multicultural differences. It is not impeded by age, intellect, or gender. It is not restricted to stable civilized societies. Nomadic peoples like the Gypsies of Transylvania and the Kurds of Iran are also enamoured of its fantasies. "Decoration is the first spiritual want of man. Fabric and art each ful-
fill this desire. . . ." 5

To understand the decorative imperative, one must first examine the traditional definitions of art. Oscar Wilde, for example, says:

Art begins with abstract decoration with purely imaginative and pleasurable work dealing with what is unreal and non-existent. This is the first stage. Then life becomes fascinated with this new wonder and asks to be admitted into the charmed circle. Art takes life as part of her rough material, recreates it, refashions

5Carlyle, cited in Carrie Rickey's, "Art of the Whole Cloth," Art in America (November 1979) p. 73.
it in fresh forms, is absolutely indifferent to fact, invents, imagines, dreams, and keeps between herself and reality the impenetrable barrier of beautiful style of decorative and ideal treatment. 6

Another traditional definition of art, from William Morris in *Hints on Pattern Designing*, is:

The best art is expressed clearly and without vagueness, with such life and power that they impress the beholder so deeply that he is brought face to face with them. He lives among them for a time raising his life above the average things that weary him to a level of the heroism which they represent. 7

Later in the same work, Morris says:

There are certain moral qualities all art must possess: beauty, imagination, and order. Every work of art which has beauty in it must also have meaning. The presence of beauty implies that the mind of man is involved beyond the ordinary; that he had something to communicate to others which they did not know or feel before. Imitation of past art is lifeless because the imitator has not entered into the soul of the past artist. 8

Gio Ponti, in "The Architect, the Artist," tends to agree with the philosophy that art comes before life and that life imitates art when he speaks of the artist: "The real artists are not dreamers, as so many believe; they are terrible realists. They do not transpose reality into a dream but a dream into reality." 9

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7 William Morris, *Hints on Pattern Designing*, p. 3.
8 Ibid., p. 6.
According to E. M. Forster, in his essay "Art for Art's Sake": "A work of art--whatever else it may be--is a self-contained entity, with a life of its own imposed upon it by its creator. It has internal order. It may have external form. That is how we recognize it."\textsuperscript{10} He goes on to say that there are two possibilities for order in the entire universe: divine order and aesthetic order. Aesthetic order is that which an artist can create in his own work. He also notes that art is a unique product.

It is unique not because it is clever or noble or beautiful or enlightened or original or sincere or idealistic or useful or educational--it may embody any of those qualities--but because it is the only material object in the universe which may possess internal harmony... The work of art stands up by itself as nothing else does."\textsuperscript{11}

A society may fail but its art survives. Forster continues: "Form of some kind is imperative. It is the surface crust of the internal harmony, it is the outward evidence of order."\textsuperscript{12}

\textsuperscript{10}E. M. Forster, "Art for Art's Sake", Modern Culture and the Arts, p. 16.

\textsuperscript{11}Ibid., p. 18.

\textsuperscript{12}Ibid., p. 20.
Suzanne Langer, in talking of form says that "Art in its restricted sense is the creation of perceptible forms expressive of human feelings." 13

Mathematical interpretations of what constitutes art go back as far as the ancient Egyptians, the Greeks, and to the Aztecs.

In primitive ornamental Aztec design, the underlying principle arises from rectilinear, rectangular, and diagonal elements... Ancient Egyptians and Greeks used, as an underlying structural principle, the equality of ratios which can be expressed by means of the summation series, and which the Greeks called symmetry. 14

The modern philosophy of life's imitating art rather than art's imitating life is really not new. The Greeks idealized the human form, intensifying its heroic quality.

Greek sculptors did not make a figure of a deity through copying the appearance of some living model but established a system of proportions 'a priori.' Such regulative sets, as the set of proportionate relations in this case, of the rectilinear elements of the Aztecs,

13 Suzanne Langer, "Deceptive Analogies: Specious and Real Relationships Among the Arts," in Modern Culture and the Arts, p. 25.


Summation series: a series in which every third number is the sum of the preceding two... also the basis for the Dynamic Symmetry principle which is also called the system of Fibonacci numbers.
constitute limitations which make art what it is, a system of symbols integrated in a harmonious whole. 15

That which makes creative art is "the invention of a simplified counterpart of the surrounding impressions--aesthetic symbols." 16

Creative art is neither technique nor craftsmanship alone or together. In order to produce an original work of art, the artist must develop a system of elements first selected then worked into a unified whole. That artistic whole is the sum of the image's proportion to its surface, the harmonious arrangement of the elements in the image itself, the correlation of those proportions and arrangements, and, where applicable, the harmonious relation of the components of color--hue, luminosity, saturation--to the space and the image.

Joseph Schillenger, in distinguishing imitative art from creative art, says:

Imitative art, unlike creative art, has no underlying principles, except the reproduction of appearances as close to the appearance of the original as can be achieved by manual craftsmanship. In this respect, any scientific instrument gives a more accurate reproduction of the image. 17

15 Joseph Schillenger, Mathematical Basis for the Arts, p. 34.

16 Ibid., p. 35.

17 Ibid.
Thus, we see that art repeatedly causes man to ponder its meaning and search for its definition. Some critics try to describe it by telling what it is not. Others define it by describing and categorizing its specific aspects into various periods and styles according to technique and chronology. There are those who relate art to social problems or political views both popular and not-so-popular. This group supports the notion that only works which are sombre, oppressing, and depressing qualify as high art. Co-existing with this type of art is an entirely different sphere of work which is uplifting and pleasant to behold, discounting the prevailing notion that pretty things are less deserving of serious recognition. The creators of these works are as technically proficient and knowledgeable of the formal elements and principles of art as the creators of more generally accepted forms of high art.

That which is beautiful is not trivial. Beauty as it exists in nature and in man should not be treated superficially. It is as much deserving of appreciation and acclaim among men as all other subjects of serious art.

According to a common definition, "art is architecture, sculpture, painting, music, and poetry
in all its forms." Having noted this definition, however, we cannot agree, as Tolstoy does not, that all commonly defined art has beauty.

But in architecture . . . are there not simple buildings which are not objects of art and buildings with artistic pretensions which are unsuccessful and ugly and therefore cannot be considered as works of art? Wherein lies the characteristic sign of a work of art?18

Anyone who has not occupied himself with aesthetics, will not hesitate to answer this question by saying: "Art is such activity as produces beauty." Such a person agrees that a good ballet or operetta is also art, but he may deny that the product of the costumers and hairdressers who ornament the women for the ballet is art. Renan, according to Tolstoy, counters this denial by saying that "the tailor's work is art,"19 and that "those who do not see in the adornment of women an affair of highest art are very small-minded and dull."20 Kralik and Guyau go so far as to include costuming, tasting, and touching

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19 Ibid.
20 Ibid.
among art. In fact, Kralik includes all the senses. Baumgarten, Kant, Schelling, Schiller, Hegel, Schopenhauer, Hartman, Schasler, Cousin, and Leveque provide other definitions and reveal that the only thing that can be said with certainty is that beauty is an enigma. National differences also contribute variations to the definitions. In Russian, for example, a deed may be kind and good, or unkind and bad. Music may be pleasant and good, or unpleasant and bad; but there is no such thing as "beautiful" or "ugly" music. "Beautiful," coming from "krasota," can be used only for that which pleases the sight. The word and the concept "good" includes the concept "beauty," but the reverse is not the case; the concept "beauty," does not include the concept "good." The languages of those European nations who hold that beauty is the essential thing in art, the words "beau," "schon," "beautiful," "bello," etc. while keeping their meaning of "beauty in form," have come to express "goodness" and "kindness."

The definition of beauty also changes from philosopher to philosopher. To be sure, Winckelman

supports Baumgarten, who makes external beauty the aim of art and even limits it to the three kinds of visible beauty: beauty of form; beauty of idea, expressing itself in the position of the figure (in plastic art); and beauty of expression, attainable only when the two first conditions are present. This beauty of expression is the highest aim of art.

Art is similarly understood by Lessing, Herder, and Goethe and by all the distinguished aestheticians of Germany until Kant, who teaches a different concept of art. I shall note Kant's definition later.

According to Home, Lord Kames (1696-1782),

Beauty is that which is pleasant. Therefore, beauty is defined by taste alone. The standard of true taste is that the maximum of richness, fullness, strength, and variety of impression should be contained in the narrowest limits. That is the ideal of a perfect work of art. 22

During the eighteenth century in France, the writers on art were Père André and Batteaux, with Diderot, D'Alembert, and, to some extent, Voltaire. According to Père André (Essai sur le Beau, 1741), there are three kinds of beauty: divine beauty, natural beauty, and artificial beauty. 23 Batteaux (1713-1780) and Diderot (1713-1784) agree that art

22 Leo Tolstoy, What is Art, p. 363.

23 Ibid.
imitates nature and that its aim is enjoyment.\textsuperscript{24} Like the English writers, the French, including D'Alembert and Voltaire, consider that it is taste that decides what is beautiful and that the laws of taste are not laid down. They grant that those laws cannot be settled.

Pagano, the Italian aesthetician of that period, held that art unites the beauties dispersed in nature. The capacity to perceive these beauties is taste; the capacity to bring them into one whole is artistic genius.

Among the Dutch writers, Hemsterhuis (1720-1790), who had a remarkable influence on the German aestheticians, including Goethe, believed beauty is that which gives most pleasure, and that gives most pleasure which gives us the greatest number of ideas in the shortest time. Enjoyment of the beautiful, because it gives the greatest quantity of perceptions in the shortest time, is the highest notion to which man can attain.\textsuperscript{25}

These were the notable aesthetic theories outside Germany; within Germany, however, there arose a new aesthetic theory, that of Immanuel Kant (1724-1804).

\textsuperscript{24}Leo Tolstoy, \textit{What is Art}, p. 363.

\textsuperscript{25}Ibid., p. 364.
Kant's philosophy states that man has a knowledge of nature and of himself in nature. In nature he seeks truth; in himself, he seeks goodness. The first is an affair of pure reason, the other of practical reason (free will). Besides these two means of perception, there is yet the judging capacity (Urteilskraft), which forms judgments without reasoning and produces pleasure without desire (Urtheil ohne Begriff and Vergnügen ohne Begehren). "This capacity is the basis for aesthetic feeling. Beauty, according to Kant, in its subjective meaning is that which, in general and necessarily, without reasonings and without practical advantage, pleases. In its objective meaning, it is the form of a suitable object, insofar as that object is perceived without any conception of its utility." 26

Beauty is defined in the same way by the followers of Kant, among whom was Schiller (1759-1805). According to Schiller, the aim of art is beauty, the source of which is pleasure without practical advantage.

After Kant and Schiller came Fichte, Schelling, Hegel, and others. Fichte (1762-1814) says beauty exists, not in the world, but in the beautiful soul

26 Leo Tolstoy, What is Art, p. 365.
(schoner Geist). Art is the manifestation of this beautiful soul, and its aim is the education of the whole man, not just of the mind--that is the business of the savant--and not just of the heart--that is the affair of the moral preacher. The characteristic of beauty lies in the presence of a beautiful soul in the artist. 27

Friedrich Schlegel (1772-1829) believes that beauty exists, not only in art but also in nature and in love; thus the truly beautiful is expressed by the union of art, nature, and love.

According to Adam Muller (1779-1829), there are two kinds of beauty: first, general beauty, which attracts people as the sun attracts the planets; and second, individual beauty, which results from the observer himself becoming a sun, attracting beauty. This is the beauty of modern art.

Schelling (1775-1854), a contemporary of Fichte, philosophized that art is the result of the conception of things by which the subject becomes its own object, or the object its own subject. Beauty is the perception of the infinite in the finite. Art is the uniting of the subjective with the objective, of

27 Schasler, cited in Leo Tolstoy, What is Art, p. 365.
nature with reason, of the unconscious with the conscious, and, therefore, art is the highest means of knowledge. It is not the artist who produces beauty but the idea of beauty within him that produces it.

Solger (1780-1819) was a follower of Schelling who believed that the idea of beauty is the fundamental idea of everything. Through his imagination, the artist may lift art to the height of this idea.

Krause (1781-1832) was also a follower of Schelling. He stated that

true, positive beauty is the manifestation of the idea in an individual form; art is the actualization of the beauty existing in the sphere of man's free spirit. The highest stage of art is the art of life, which directs its activity toward the adornment of life so that it may be a beautiful abode for a beautiful man.  

Hegel (1770-1831) presents an equally intangible definition. He states that G-d manifests himself in nature and in art in the form of beauty. G-d expresses himself in two ways: in the object and in the subject, in nature and in spirit. . . ; beauty of nature is only the reflection of the natural beauty of the spirit. . . . But the spiritual must appear in sensuous form. The sensuous manifestation of the spirit is only appearance (Schein), and this appearance

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28Leo Tolstoy, What is Art, p. 367.
is the only reality of the beautiful. Art is thus the production of this appearance of the Idea... .

Herbart (1776-1841), an opponent of Hegel, says there is no such thing as beauty's existing in itself. What does exist is opinion and the bases for opinion lie in impressions.

Following Herbart, philosophers either supported or opposed Hegel. Not until Guyau (1828-1893) was there a statement bringing man and G-d closer. Guyau taught that art is the expression of reasonable and conscious life, evoking in us both the deepest consciousness of existence and the highest feelings and loftiest thoughts. Art lifts man from his personal life into the universal life by means not only of participation in the same ideas and beliefs but also of similarity in feelings.

In England, during the nineteenth century, the writers on aesthetics define beauty not by its qualities but by taste. A discussion on taste, then, necessarily supersedes any discussion on beauty. Among the major philosophers in England at this time were Charles Darwin, Herbert Spencer, Grant Allen, Ker, and Knight. Herbert Spencer (1820-1903) says that art is an imitation of life. Grant Allen (1848-1899)

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29Leo Tolstoy, *What is Art*, p. 368.
believed that "the origin of art is play; when there is a superfluity of physical strength, man gives himself to play; when there is a superfluity of receptive power, man gives himself to art." 30

By mentioning these selected writers, one can safely say that there is a definition of beauty to suit almost anyone's needs. But what do these definitions amount to? According to Tolstoy,

All the aesthetic definitions of beauty lead to two fundamental conceptions. The first is that beauty is something having an independent existence (existing in itself), that it is one of the manifestations of the absolutely Perfect, of the Idea, of the Spirit, of Will, or of G-d; the other is that beauty is a kind of pleasure received by us, not having personal advantage for its object. 31

Fichte, Schelling, Hegel, Schopenhauer, Cousin, Jouffroy, Ravaisson, and others accepted this first definition.

The second view, that beauty is a certain kind of pleasure received by us, not having personal advantage for its aim, finds favor among the English aesthetic writers and Kant. Although this definition has a degree of clarity, it is still inexact. As Guyau, Kralik, and others note, it does not exclude food, drink, delicate skin, etc. as sources of pleasure

30 Leo Tolstoy, What is Art, p. 375.
31 Ibid., p. 377.
Why then, some aestheticians ask, must the concept of beauty furnish the definition of art? They answer that in the subjective aspect, beauty is something that pleases. In the objective aspect, beauty is something absolutely perfect because we receive from its manifestation a kind of pleasure. Essentially, they assert that the objective definition is the subjective conception expressed differently. Thus, there is really only one definition: art is that which makes beauty manifest and beauty is that which pleases. Once one begins asking why it pleases, the discussion of beauty becomes a discussion of taste and these aestheticians conclude that any discussion of taste leads to nothing.

From the preceding aesthetic arguments, one may conclude that the aim of art is beauty, that beauty is recognized by the enjoyment it gives, and that artistic enjoyment is a good and important thing because it is enjoyment. The reason that there is no exact definition of art is that the conception of art has been based on the conception of beauty. The physiological-evolutionary definition, the experimental definition, the pleasure definition, and the metaphysical definition are all inexact because they consider only the reward art may give and not the
purpose it may serve in the life of man. Art is not merely a means of pleasure; it is a condition of human life. It is a means of intercourse between man and man. Every work of art causes the receiver to enter into a relationship with the producer of the art as well as all other receivers—past, present, or future. The activity of art is based on the fact that a man, receiving through his sense of hearing or of seeing another man's expression of feeling, is capable of experiencing the emotion which moved the man who expressed it. Art is a human activity in which one man consciously, by means of certain external signs, hands on to others feelings he has experienced. In turn, other people are infected by these feelings and also experience them.

Art is not, as the metaphysicians say, simply the manifestation of some mysterious Idea of beauty, G-d; it is not, as the aesthetical physiologists say, simply a game in which man lets off his excess of stored-up energy; it is not simply the expression of man's emotions by external signs; it is not simply the production of pleasing objects; and, above all, it is not simply pleasure. It is a means of union among men, joining them together in the same feelings and it is indispensable for the life and progress toward the well-being of individuals and of humanity.
Art arises from an artist's intuition and is universally appealing to the artistically initiated and uninitiated. This union among men bonded by common feelings states my purpose and the reason I choose silk as my canvas. Silk inherently stirs one's emotions (as it has done since the great dynasties of China) and is itself richly symbolic. When I stretch it, I am able to transfer my images in watercolor to a more architectural form. When I allow it to float freely, it reaches towards men and demands their physical attention.

The images I choose to present I carefully select and study; however, the manner in which I paint is purely intuitive. The similarities, which I now see, of my work to Cezanne's and Demuth's is analytical. It is with some degree of embarrassment that I must admit to being unknowledgeable of either of their watercolor works. Enlightenment is only a beginning for it raises more questions than it answers; yet, it provides me with the knowledge that my work is fundamentally and solidly secure, an offspring of a most respectable genealogy.

Both Cezanne and Demuth painted delicately and with muted colors, subtly and with understatement of form being their constant ruling passion. Each was a
master of a sensitive approach to painting. The watercolors of both men contain a considerable amount of unpainted paper and frequently are perceived as unfinished. Both artists employed unpainted white spots in the ground as organic, plastically-operating neutral foils for activity present elsewhere in the painting. Watercolor suited the common character traits of the two men, both of whom were retiring, modest, ultrasensitive, and introverted.

Demuth made no attempt to employ Cezanne's "petite sensation," his system of grading color from cool darks to warm lights. He seems to have understood, as did Braque and Picasso, that Cezanne's greatness lay not in his method of modeling objects but in his capacity for creating a dynamic variety of space wedded to the flatness of plane. The American substituted a dazzling chiaroscuro technique combined with various kinds of textures: free forms, pooled, mottled, speckled, grained, and hatched. What Demuth learned from Cezanne was the method for structuring a painting: the upward expanding conformation (a pictorial principle used in all painting which subscribes to the romantic variety of open form), the split wall, the general tectonic composition by means of planes, and the turning of total form about an axis.
In the Bermuda work, as in the paintings of Cezanne, Demuth's few true verticals or horizontals occur. Paint is applied sparingly and kept rigidly under control, in part by means of the dexterous blotted textures which Demuth began to use at this time. The textures vary in nature, being refined or coarse according to the artist's need, and they are usually employed for the purposes of value gradation (both for typically cubist value-transition within a given plane and for the gaining of a vignette effect). Patterned effects and facets are obtained in these works by manipulation of the edge of a blotter. The colors of the Bermuda landscapes are extremely pale and their values are so close that the pattern of the whole is nearly indistinguishable.

Among the many devices used by the cubists, Demuth experimented with the following: overall unity and the reduction of deep space, facet technique, distortion and dislocation of parts, shifting, pluralism or duality, the arbitrary use of shadows which occasionally become substance, planes at once transparent and opaque, interlocking light and dark planes with interchangeable positive-negative qualities, overlapping planes, interpenetrating planes, geometrically exact lines (straight and curved), coincidental edges,
projection of lines of force, refraction of lines, and fusions or "passages."

As I analyze my work, I recognize that I have used most of these devices unknowingly; I certainly did not attempt to emulate Cezanne or Demuth. Most apparent in my work is the reduction of deep space and the interlocking of light and dark planes which provide me with similar interchangeable positive-negative qualities. I deliberately penetrate planes both opaque and transparent and in almost all cases project lines of force which I use as a contradiction and a support to the fragility of the image. Each painting is a microcosm, a world within an extremely shallow depth of field achieved by interlocking and overlapping these transparent and opaque planes. Winthrop O. Judkins' suggestion that this creates "a deliberate oscillation of appearances, a studied multiplicity of readings . . . an iridescence of form,"\(^{32}\) applies to my paintings as well as to those of Cezanne and Demuth. These stated qualities appeal to my vitality and love of ambiguity.

Demuth frequently uses a pristine, immaculate, antiseptic white ground upon which he places exquisitely

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delineated positive objects. "This device reappears in the sixties in the works of Californian Thiebaud, who employs pure white grounds behind relief-like human figures as a means toward the psychological and technical isolation of his subjects."³³ I draw upon these references as support for what may seem to some as large amounts of empty space in my work. The large areas of white ground, whether foreground or background, are as much an integral part of the surface as the overlapping, interlocking image. I use the paper and the silk, not as a surface upon which to deliver an image, but as a vital component which focuses and unifies the image. In a psychological or spiritual sense, the white ground is richly symbolic.

The relationship of the figure and the ground and the psychological effect that relationship manifests intrigues me as it did the cubists, and Charles Demuth. Some psychological studies indicate that "the relationship of figure and ground was encouraged by the positive and negative forms of Art Nouveau."³⁴ I do not feel, however, that there is a significantly visible influence of Art Nouveau in my work other than

³³Emily Farnham, Charles Demuth: Behind a Laughing Mask, p. 92.

in a purely decorative sense. Marianne Teuber states the "Visual ambiguity goes hand in hand with ambiguity of meaning. Good and evil are contemplated in the figure--ground reversal of black devils and white angels."\textsuperscript{35} Many see in my paintings provocative white space suggesting eroticism; yet, white in western cultures is traditionally the symbol for purity and virtue. This obvious contradiction causes me to wonder whether there is a subconscious motivation within me which demands the use of white space not only as a decorative element but also as a psychological force.

There is a similar duality of meaning in Botticelli's "The Birth of Venus"--not through use of white space but through other formal devices. Eros and Logos\textsuperscript{36} exist simultaneously in both my gladiola paintings and the Botticelli "Venus." In my work and Botticelli's "Venus," there is the flowing sensuality

\textsuperscript{35}Marianne L. Teuber, "Sources of Ambiguity in the Prints of M. C. Escher," p. 90.

\textsuperscript{36}I am using the term Logos in its original Greek meaning to represent the concept of the intellect as opposed to the concept of the sensual represented in the word Eros. The distinction I must make in my usage is that the notion of masculinity implicitly incorporated in the Greek definition is not incorporated in mine. This omission is in keeping with the modern concept of Logos which does not discriminate against women as intellectuals.
of a lyrical arabesque line (Eros) and the Apollonian principle of crisp precise lines bringing about the separation of light and form through clarity (Logos). These two opposing forces, the earth and the spirit, create a psychic tension within the spectator which tease him with their enigmas. Further similarities are shallow modeling, the effect of low relief (see red gladiola and blue gladiola), and a feeling of floating even though the image may touch the ground.

Edgar Rubin, a Danish psychologist, says that ". . . it is always the form with the greater realistic or emotional appeal that tends to attract our attention." It would appear that I am (subconsciously) revealing enough of the image to allow the spectator to resolve the problem yet omitting just the right amount of information to capture his attention. I also use the borderline between two adjacent shapes for multiple functions. At the moment the line is drawn, two separate shapes are made, one on each side of the line, but since neither the eye nor the mind can see or conceive both simultaneously, the spectator must continually jump from one side to the other. By doing this he actively involves himself in the work according to his perceived experiences. This fulfills one of the

basic principles of design for the artist and directs attention to one of the greater complexities of man: the unresolved battle between good and evil.

Rubin continues by saying the usual way figure/ground works is that

One sees the smaller enclosed form as the figure by contrast with the larger surrounding expanse of the ground. The figure has 'solid object quality,' whereas the ground takes on a 'film quality.' The figure protrudes; the ground recedes and stretches behind the figure. The contour is seen as belonging to the figure and not to the ground.38

By effectively using my white areas, I make the figure become ground; by intricately overlapping transparent forms, I make the ground become figure (see Figure 5, "Humoresque").

My fascination with the figure and ground dilemma, as I have previously stated, has already been experienced by the cubists, Paul Cezanne, and Charles Demuth.

Demuth's mature conviction is that "there exists a visual language independent of the subject portrayed and that studied simplification can lead to great art."39 There is a point where one leaves


39 Emily Farhnam, Charles Demuth: Behind a Laughing Mask, p. 93.
representation behind to pursue pure painting as a creative act. Knowledge of form and understatement of the image contribute to the latent, subtle and obscure power of Demuth's work. In much of this description I see my own work from the translation of the image to its criticism. Many equate lightness of subject matter and technique with lightness of mind as Demuth predicted when he wrote: "Lightness is seldom understood."40 Behind his delicacies and mine lies the strength of Cezanne and Toulouse-Lautrec. "Beneath the subtle nuances of a Demuth frequently resides a complex, subterranean contribution of sensuous, erotic undertones much like those one encounters in Henry James and Proust."41 One also encounters such undertones in my work. Having said that, I must go on to say that my paintings also incorporate a cerebral analysis of form and nature (like Cezanne's), architectonic structure and shapes reduced to a sculptural form. None of these, however, creates an artificial or contrived reality.

They also contain the Renaissance characteristics of rationally constructed space, clarity, and

40Emily Farnham, Charles Demuth: Behind a Laughing Mask, p. 95.

the use of light and shadow in a subjunctive manner, not to define form but for their evocative qualities. Outlines are broken, partly visible and partly obscure. Space has few tangible limitations suggesting an imperceptible transition from the finite to the infinite, as in the Baroque sense of the painting continuing beyond the edge of the physical canvas.

I see in my work the anomaly of Renaissance and cubist space where, within the space of the picture, cool clarity of detail shifts to ambiguity and multifaceted structure. There is a sensuous and decorative lyricism of line which merges imperceptibly with subdued integrated color construction. Through the linear geometry of the edge, a controlled use of color, a Renaissance perspective, and a cubist vocabulary, I develop an ambiguous but structured space which plays with illusory effects but always returns to the surface of the picture plane. This technical illusion is an integration of architectural recession and sculptural progression (see illustration "Silk Tulips").

In terms of human perception, man has the need to organize an incomplete statement, to resolve both a visual and linear image. He has a propensity to make things whole or right. If a sentence contains the word "the" twice, a reader will often omit the second
"the" and read the sentence as it should be. Conversely, if a simple word like "and" or "the" is omitted, the reader will supply the missing word and again read the sentence correctly. I believe this to apply to visual omissions as well. When confronted with an incomplete visual image, the eye as sensor will receive the stimulus and transfer the message to the brain. The brain will receive the fragmented message, internalize it, tap its reservoir of information and past experiences and resolve the image's negative space. The spectator, thus becomes a participant in a problem-solving situation. He assumes an active rather than a passive role in his observance and appreciation of the image. He perceives the image in a uniquely personal way. If he is uncomfortable with the resolution, he repeats the process until satisfaction replaces frustration.

It is my intention to lead him to the edge, to provide enough surface tension to intrigue and captivate him, to supply enough information for him to resolve the image without causing insurmountable frustration which would alienate him.

There is a school of German psychologists in the United States concentrating on the problem of why things look the way they do. They found the solution
in perception itself. Perception is a process that
gives coherent order to the jumble of images received
by the senses. We learn to see. We learn to give
these images a good layout or Gestalt. According to
Professor Koffka, the nervous system, under the impact
of the stimulations that impinge on the retina of the
eyes,

produces processes of organization in such a
way that the pattern produced is the best
possible under the prevailing conditions . . .
thus, color and brightness, shape and space,
figure and background, location and motion,
are all interdependent aspects of the organized
pattern which ordinary visual stimulation will
produce.42

In other words, the way the nervous system develops
its organized patterns is not very different from the
way the artist paints his pictures. It is by this
faculty of assimilating sensuous impressions from
material things and then combining them in significant
relationships that the human race found its place in
the world and it is this faculty which contemporary man
uses less and less.

42 Sir Herbert Read, "Art and Life," in
Adventures of the Mind, ed. by Richard Thruelsen and
PART TWO
TECHNICAL INFORMATION OF SILK

Preparing the Silk

Washing the Silk to Remove Sericin

For a while, I considered the possibility that the fabric bought from Kap-Pel in Kansas City, Missouri was not entirely silk. Since none of the women who had purchased it were having especially good results, the consensus was that it would serve as satisfactory lining fabric. The 44" wide silk arrived with a very rough texture for what we were told was pongee. It was then necessary to remove the sericin from the silk fiber. The accepted procedure was to wash it in the automatic washing machine with synthropol and ammonia. I was immediately unhappy and frustrated with the lack of controls for this process. There was no existing data from controlled scientific testing to determine the quantities of synthropol, an industrial strength liquid alkaline detergent; ammonia, an alkaline bleach; and water, when one does not know whether it is hard or soft, to be used with the dry weight of the silk. Although leary, I prepared my
first yardage in this manner. Following my own experience, I washed (in an automatic washing machine under "normal" setting) five yards of the silk using hot water with an arbitrary amount of synthropol (which I estimated to be approximately one tablespoon) and ammonia (perhaps less than a cup). To ensure thorough rinsing of the fabric, I reran the entire wash cycle without detergent. Upon completion, I dried the fabric in an automatic electric dryer for 30-40 minutes at the normal setting. I wanted to place the fabric under enough stress to induce whatever negative reaction might occur prior to any variables or factors associated with dyeing or placing an image upon the silk for painting. After the silk completed the first wash, it acquired an extremely strong odor which I likened to dead fish. The second washing without the detergent was necessary to lessen the odor and perhaps the remaining alkalines which I considered to be an irritant to the skin if the silk were to be used in a garment.

The results of the washing and drying process were a surprise to me: the silk yellowed, which could have been a reaction to the ammonia, since ammonia is a bleach and bleaches yellow silk; the texture of the silk was not improved significantly, and the overall
fabric shrunk three inches per yard in length and two inches in width. Afterwards, I learned that an average of 3% shrinkage was normal.

The Boiling-Off Process

Dissatisfaction with the synthropol and ammonia washing (the gutta did not penetrate and the dye either did not penetrate or blotched) prompted me to search for a better method for preparing the silk to accept the dye.

Mr. Louis Capwell, President of Catoir Silks, Allentown, Pennsylvania first analyzed the fabric from Kap-Pel to assuage any doubt of its fiber content. Upon determining that the fabric was woven with a thrown silk filament and a spun silk filler, Mr. Capwell contacted his dyers in Patterson, New Jersey to obtain information which would enable me to remove the sericin. With their invaluable cooperation, I began using the "boiling-off process" with the following formula for one pound of dry silk:

\[ 1 \text{ oz soda ash} : 1 \text{ lb titer soap} : 2 \text{ gals distilled water} \]

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43 Interview with Mr. Louis Capwell, Catoir Silks, Incorporated, Allentown, Pennsylvania, November 1981.

44 See Appendix, p. 62.
Procedure:

1. Determine the dry weight of the silk yardage.

2. Wet-out the yardage (soak the silk in water) for 30 minutes.

3. Bring to a boil two gallons of distilled water, one ounce of soda ash (extremely toxic, take all precautions, respirator, gloves, lab coat, safety glasses, ventilation, be sure to protect others in the work area by notifying them of the hazard), and one pound of titer soap (titer soap, obtained from the Laurel Soap Company, Philadelphia, Pennsylvania is a yellow flake soap free of alkalines. The term "titer" is not a brand name. It refers to the rinsability: the lower the titer, the easier to rinse the fabric free of scum). In the eventuality that titer soap is unavailable, it is safe to wash silk in any synthetic unbuilt detergent such as Ivory Liquid or Woolite or olive oil soap.

4. Check the pH of the solution. Adjust the soap solution to a neutral pH of 7. If the pH is too high, add acetic acid accordingly. If the pH is too low (unlikely) add soda ash.

45See Appendix, p. 60.

5. Place the wetted silk in the soap solution, cover, and boil for one hour.


7. Remove the silk from the soap solution and rinse it in continuously running water, one to two hours.


Pressing the Silk

Steam press the silk with an industrial steamer or an electric steam iron on a wool setting. According to information found in Alma Chestnut Moore's *How to Clean Everything*, shake silk gently until it is the proper dampness for ironing.

Silks should be uniformly damp when they are pressed. Iron them before they are dry completely for best results... If they are too wet when ironed, the fabric will be stiff and papery. Use a warm... iron and press on the wrong side, preferably with a piece of clean cheesecloth protecting the fabric.48

47 For more detailed information on soaps and detergents, see Appendix, p. 56.

Ms. Moore advocates using a steam iron on the wrong side of the silk and only with an untreated press cloth.

Martin Hardingham, author of *The Fabric Catalogue* concurs with using a press cloth but warns against using a steam iron. "... do not use a steam iron. If the fabric is excessively or unevenly damp, water staining may occur when ironing."

Because silk stretches easily, I have found that when pressing silk with a flat iron, work from the center towards each selvage.

### Drawing on the Silk

Now that the silk is ready for painting, one draws an image upon it with gutta. I prepare a pencil drawing of an image on tracing vellum. The size of the paper must be smaller than the area of the silk in order to stretch and tape the silk to an immovable

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50 Ibid., p. 182.


52 Gutta-Serti - A French resist similar in consistency, smell, color, and properties to rubber cement. Do not store in plastic bottles; only glass or metal prevent it from thickening. Thinned with "Bestine."
surface such as a light table. This is the most troublefree method of transferring the image. Having no information to the contrary, I once taped a piece of silk to the paper and found that it buckled rather than remained flat. I also advocate stretching the silk tautly over the image which lessens the drag of the applicator when applying the gutta and assures penetration of the fiber by the gutta. Instructions from the manufacturer indicate that: (1) gutta may be stored in glass or metal but not plastic bottles, (2) one should use a small squeeze applicator bottle, and (3) before using, turn the bottle upside down and allow air bubbles to rise. After the image is drawn, the gutta must dry 30 minutes. I find that the gutta is seldom dry in that length of time and dye penetrates the line. I prefer a little extra caution at this stage and allow my designs to rest, undisturbed, up to two hours before applying any dye. During the drying time, it is best to look for gaps in the gutta line from every possible angle. If one skips so much as a single thread when applying the gutta, the dye seeps through and diffuses beyond the designated shape. Better to take precautions than risk losing the piece. However, if the inevitable happens, work quickly. There are a few techniques which sometimes compensate for the error.
The gutta is somewhat tacky and may cause the silk to stick to the drawing. Peel the silk away from the paper gently; no damage to the silk or the drawing occurs. (I prefer stretching the silk smoothly over the paper surface; others wrap the edges of the silk around dowels like a scroll and suspend it above the drawing eliminating contact with the surface. I find that controlling the flow and accuracy of the gutta is easier without compensating for the slack in the fabric which is unavoidable with the second method.)

The gutta line spreads slightly as the fabric absorbs it; therefore, it is unadvisable to place a drawing on acetate directly beneath the silk. The acetate is non-absorbant and the gutta lines will spread uncontrollably, resulting in the loss of much detail.

Stretching the Silk for Painting

The silk must not touch the surface of the worktable while wet. Contact with any surface while painting with the dye will cause the dye to bleed beyond the gutta lines in all directions. The accepted method of stretching the silk and raising it above the surface is to attach it to two dowels, to roll the dowels outward until the silk becomes taut, and to secure the dowels to the work surface with pins, tape, clamps, or
any other device which might work. The shortcomings of this method are immediately obvious and hardly suited to a technological society: it does not provide equal tension in four directions; it does not accommodate large pieces of fabric, and it does not allow the artist the ability to adjust the fabric as it becomes wet (silk has a great affinity for stretching and loses tension as one works).

Devising a System for Stretching the Silk

Upon deliberating the characteristics of the silk and recognizing my limitations in terms of size, space, and materials, I developed a system with which I could stretch the silk tautly in four directions and completely adjust along the entire perimeter. By wrapping the lengths of two strong flat sticks with foam rubber and pinning the edges together forming an apron, I was able to pin the silk to the apron and raise the stick from the table surface. This replaces the dowels and permits the silk to be adjusted as needed. I then placed two larger pieces of wood (1" thick, 2" wide, and 60" long) underneath the first two sticks and clamped the overlapping corners in place with C-clamps large enough to fit under the table. (I later substituted spring-clamps because C-clamps require at
least two pairs of hands.) After the clamps were in place, I ran a strip of masking tape along the remaining edges of the silk and adhered them to the boards. Having met all the preparatory conditions, I commenced painting (see photographic illustration #1).

The stick and clamp system adequately sufficed for fabric up to 42" x 42", however, I found that this size was severely restricting. It became necessary to devise a new system which would accommodate larger pieces of silk. I achieved a satisfactory solution to the problem by using four sections of one inch square aluminum tubing. I drilled two lengths of tubing with holes every six inches and fitted two other lengths of tubing with wooden blocks at each end. By drilling a hole into one end of each of the wooden blocks and fitting them with the proper hardware, I could pass a two-inch screw through the parallel holes in the first length of tube and enter the cross-cut wooden end block of the second tube. I prepared canvas sleeves which I sewed to the silk and slid over the tubes before I assembled the parts. Even though the finished unit resembled a sixteenth century embroidery frame or a small trampoline, it provided me with a light-weight, easily portable device, which stretched the silk magnificently. Since many of the pieces took two to
three weeks to paint, it allowed me to work vertically rather than horizontally and it enabled me to store it flatly against a wall when it was not in use.
The Dyes

Because silk is a protein fiber, one must use a cold water acid dye. I use DuPont French Dye and Senellier Super Tinfix. Each is a highly concentrated liquid acid dye which must be diluted with a solution of denatured alcohol and water. Water is the best dilutant for the dyes and alcohol helps the dye to penetrate the fabric. Using the dye full-strength dulls the brilliance of the color and may cause a discharge when one washes the fabric for the first time. Pure alcohol reduces washability and causes the dye to penetrate the gutta line. I use a 1:2 solution of denatured alcohol to water from a stock which I prepare in advance. If my design calls for a color which will carry throughout the surface, I am sure to mix a quantity sufficient for my needs. Because alcohol evaporates, it is best to store specific color mixtures in a tightly covered glass jar. The manufacturer recommends that the dyes be diluted two hours prior to application in a ratio of one part of dye to half part water and half part denatured alcohol.

All of the French dyes made by both manufacturers intermix providing an infinite variety of hues.
The shelf life of the dyes in full strength is approximately one year. Keeping them in a cool, dry, dark area may prolong the shelf life. These dyes can also be used for batik in a paint-on method, silk screening with the addition of a gum arabic base or Haltex thickener, and air-brushing.

**Applying the Dyes**

Use the best possible brushes in assorted sizes you can afford. Have no less than one brush for each color as the stain remaining on a brush can pollute the dyes. Number eight and number twelve sable water-color brushes work well accompanied with some wider curved and chiseled flat brushes for large wash areas. Organization at this stage averts disaster later. I label each bottle of dye with the manufacturer's name and number to facilitate reordering. I then arrange them in order in a divided tray like those used for separating silverware in the kitchen. Depending on the type of tray, there is even room for gutta, alcohol, alcohol and water solution and gutta squeeze bottles. In a second tray, I keep my brushes, plastic straws, gutta mixers, Q-tips®, etc. I also label each brush with a number and letter which correspond to a number and letter key on each bottle. Preparation may seem
extensive and I am sure there are those who manage well without it; however, I know at a glance whether or not I am dipping the right brush into the right bottle.

As soon as the dye touches the silk, it spreads in all directions. The only thing restraining its movement is the gutta. The manufacturer suggests that you apply the dye to the center of an area and allow it to diffuse towards the corraling gutta. I am able to apply dye quite near the gutta and diffuse color away from the line. I also use a glazing technique similar to that which I use in my watercolors. It is possible to backwash an area with a clear solution of alcohol and water. By controlling the flow and the saturation level, I achieve a crisp linear edge along the gutta line. Any area can be worked as long as the fabric is still wet. Otherwise, overbrushing a portion of an area will leave water marks.

There are times when the dye seeps through a break in the gutta line. When it seeps into an area which will be a darker color, paint both spaces and wait until they dry, then repair the gutta line being sure the gutta penetrates the silk and encircles each thread. I prefer continuing onto another section of the painting until the repair dries. If the dye seeps into an area which is to be white, backwash the area
with clear alcohol and water solution and dab with Q-tips®. The Q-tips® will absorb a good deal of the liquid pulling away much of the dye from the surface. They will not remove everything, but they are the front line. If the dye crawls into a large open area unconfined by a gutta line, it is often better to air-dry the stain quickly with an electric hand-held hair dryer and draw a gutta line around the stain incorporating it into the design. The hair dryer not only is a safety device but also an expeditor. One can work the silk faster for longer periods of time unencumbered by the wet sagging fabric. Beware of using a blow dryer on horizontally stretched silk; it may blow wet dye across the entire surface.

Removing Dye Stains

Regardless of how carefully one works, there is sure to be that disastrous moment when something will splash or spill. Being clever and quick helps. One can lift dye stains before the fabric enters the final steaming process, but do not jeopardize the major portion of the design for a spot which may appear less significant to others. Both the manufacturers and Diane Tuckman of Ivy Crafts Imports, Lanham, Maryland suggest removing stains with a solution of water and bleach; however, most sources agree that bleaches not only yellow the silk but also weaken the fiber.
Finding myself in a particularly grave situation, I began experimenting with various household products which when properly used are not especially dangerous to man or fabric, including ammonia, baking soda (sodium bicarbonate), Borateem®, and borax. I chose red dye because of its instability and intensity and spotted strips of various types of silk. It is important to try each product or solution on both a wet and a dry stain. Keep accurate records or you won't know what works where. I have reasonably satisfactory results with ordinary baking soda (sodium bicarbonate). The experiments certainly need more scientific controls but basically the procedure is as follows: first, wet the stain with a solution of alcohol and water and sprinkle the baking soda over the area; as soon as it touches the stain it absorbs the dye. Second, when the powder becomes saturated with dye and moisture, brush it off and sprinkle more clean soda on the spot. If it is necessary, repeat the procedure. Be cautious and do not take any information verbatim. There are always variables. Remember water marks appear on silk and are not always desirable, what appears white may turn yellow or leave scorch

53 Caution: never mix ammonia with any other product since the gases emitted are highly toxic.
marks after steaming, and over-working the silk will damage the fiber.

Steam-Setting the Dyes

The dyes are set by steam, not by dry heat, becoming permanent and washable. It can be done commercially or with home steamers which are available. Commercial establishments for steaming can be found in the telephone directory under pleating. I have tried three methods of steaming with varying degrees of success: the steam press, the pot, paper, lid, and brick method, and the autoclave. I find the steam press totally unreliable and inefficient, the stainless steel pot method works well for small pieces; however, the autoclave works best in all situations.

Since steaming is the only way to permanently set the dyes, I will describe the two methods which I use and recommend: obtain a large stainless steel pot with a lid (a clam steamer or a pressure cooker will also work); loosely roll the fabric in unprinted white newsprint paper making sure that no two surfaces of the fabric touch; tightly close the ends so that water does not penetrate and wet the fabric, and either tie the paper roll with string or staple (do not use tape); gently form the tube into a circle or spiral to fit the
pot (do not crimp or fold the tube). At this stage, place the pot on the stove and add enough water to cover the bottom (depending on the size of the pot, one to two quarts is ample). Insert a colander or vegetable steamer and bring the water to a boil. This raises the felt, paper, and tube of rolled silk above the water level yet allows the steam to pass through. When the water comes to a full boil, place a felt pad or blanket upon the colander followed by one average daily newspaper; as soon as the steam rises, insert the spirally formed paper tube containing the silk, working quickly; place on top of the bundle one average daily newspaper, one thick felt pad (or blanket), and one sheet of aluminum foil (optional). The objective is to absorb condensing moisture rather than allowing it to collect on the bundle. Some people feel that the droplets of water which collect upon the foil will fall away. This seems not only risky but also vague. I am sure the advocates of this procedure intend for the droplets to fall to the bottom of the pot; however, in so doing, they must fall past the bundle containing the silk. I would prefer to keep as much water away from the silk as possible. Having made a decision, top the entire stack with a tightly fitting lid; then place at least two clean bricks (or
rocks equal in weight to two clean bricks) upon the lid. We are trying to effect a chamber of steam held under pressure. Diane Tuckman advocates steaming under pressure for 45 minutes, longer if the bundles are large. This method suffices for small pieces of light weight silk, but it certainly is not as reliable as steaming silk in an autoclave.

Wear protective hand and arm coverings to insure your safety from the live steam and carefully remove the bricks and the lid. Tuckman says:

Remove the bundle from the steamer and wait until the rolls cool and then an additional 30 minutes before unrolling. Rinse in cold water. There may be a discharge of certain colors, in particular red and black. After steaming . . . wait two weeks before the final rinsing . . . Some artists wait a day or two. Rinse in cool water once again with a 5% solution of white vinegar (optional) and press the fabric.

Instructions from I. E. DuPont state that

After steaming, the fabric should be allowed to cure for at least one day. It can then be rinsed in cool clear running water and washed with a mild soap, rinsed finally with a 5% solution of white vinegar and pressed.


55 Ibid.

56 I. E. DuPont, "Colorants Speciaux pour la Decoration des Tissus" (Toronto, Canada: Sureway Trading Enterprises, n.d.).
Tuckman later states that "when the work is steam set, most or all of the gutta will come out.... Washing also helps." I find that all of the gutta remains after steaming and only can be removed with perchloroethylene (tetrachloroethylene)\(^{57}\) an aromatic hydrocarbon now being used in the dry cleaning industry to replace the highly toxic, carbon tetrachloride. (DO NOT USE. Absorbed through the skin, it causes severe kidney and liver damage even in small amounts. Larger exposures are frequently fatal. It causes cancer in animals.)\(^{58}\) Since perchloroethylene is only slightly less toxic, it is safer, more economical, and more efficient to use a bulk-load dry cleaning machine. On the authority of Mr. Joseph Goldman, owner of Lilac Dry Cleaning, Rochester, New York, who conducted tests for me, it is costly and unnecessary to dry clean silk by the piece.\(^{59}\) If you decide to wash the silk after


\(^{58}\)Ibid., p. 49.

\(^{59}\)Interview with Mr. Joseph Goldman, Lilac Laundry and Dry Cleaning Company, Rochester, New York, April 1982.
removing the gutta, use a synthetic unbuilt detergent such as Ivory Liquid® or Woolite®. Shake the silk gently until it is damp and press with a flat iron on the wrong side with an untreated press cloth.
Finishing Techniques

Silk unravels easily when cut, therefore, one must prevent this. There are several methods for finishing the edge: cutting with a pinking shears, straight stitching edges together, following with overcasting or zig-zagging in the seam allowance, French seams, etc., hand-rolling, and machine scrolling. To prepare an edge for rolling or machine scrolling, determine the straight of the grain by drawing a thread from the fabric and cut along the line of the missing thread. Slightly dampen your forefinger and thumb, clasp the edge of the silk between them and roll the edge towards you, working from the wrong (left) side of the fabric; using a very thin sharp needle, pick up two or three threads on the front of the fabric and pass the needle through the roll 3/8" x 1/2". Pick up a few more threads and continue.
I wish to express my appreciation to Proctor and Gamble and the Soap and Detergent Association of America for the information which they provided.
SOAPS AND DETERGENTS

Dr. Paolo Carboni, in Silk: Biology, Chemistry, Technology, translated by Karl Walter says,

Sericin, if not subjected to the action of heat as in the drying of fresh cocoons, melts completely in boiling distilled water under ordinary pressure and partially in water at 60°-65°C...

After being subjected to the action of heat, as in the suffocation of the cocoons, sericin is soluble in distilled water only at 120°C under pressure of two atmospheres, excepting the sericin of the outer crust of the cocoon, of which the water solubility is not noticeably affected by the action of the heat...

Sericin dissolves completely in boiling soap solutions.
Sericin gives all the common protein reactions; it is precipitated in solution by tannin and by acetate of lead...

... the use of olive oil soap is prescribed because this gives out in solution the smallest quantity of soap acids, which, once fixed by the seric fiber could only be removed by ammonia washing or extraction by alcohol...

The water used for the cleaning bath or for subsequent rinsing of the clean silk must be free from hardness, which would cause the formation of calcareous soaps not lacking in any detergent or solvent values but liable themselves to be fixed by the fiber.60

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60 Dr. Paolo Carboni, Silk: Biology, Chemistry, Technology, p. 39.
Alma Chestnut Moore in her book *How to Clean Everything* says that "silk must be washed in a synthetic unbuilt detergent." To understand what this actually means and why it is an essential factor, it is best to review a short history of soap.

In 1791, the French chemist, Nicolas Leblanc, patented his process using common salt to produce soda ash (sodium carbonate). Sodium carbonate is the active ingredient in ashes that combines with fat to form soap. This proved to be the first step towards large-scale commercial production.

In the mid 1800's, the Belgian chemist, Ernest Solvay, invented the ammonia process, which also used common salt (NaCl) to make soda. Both processes decreased the cost of manufacturing and increased the quality and the quantity of soap.

Soap technology benefitted from the significant breakthrough of French chemist, Michael Eugene Chevreul in 1811 who discovered that soap contained several "fatty acids." His studies of these fatty acids and of glycerin established the scientific basis for both fat and soap chemistry.

Saponification is the process of converting fats into soap by treating them with an alkali. Fat

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and alkali react to form soap and glycerin. This is done directly by boiling fat and alkali under controlled conditions.

Fat can also be broken down into fatty acids and glycerin by a process called hydrolysis (breaking down by adding water). The second step of this saponification reaction combines an alkali molecule and the acid group of the fatty acid molecule. In the resulting group molecule, the acid group is neutralized by the alkali to form a carboxylate salt, which is commonly known as soap. If the alkali used is a sodium (Na) compound (such as caustic soda), the result is a hard soap. However, if the alkali used is a potassium (K) compound (such as caustic potash), the result is a soft soap which usually comes in liquid form.

The reason soap works on dirt is that its molecules are made up of two forces, the hydrophilic (water loving) carboxylate end, and the hydrophobic (hydrocarbon) end which is repelled by water and attracted to oil and grease in dirt. These opposing forces loosen the dirt and suspend it in water.

Although soap is a good cleaning agent, its effectiveness can be reduced in hard water. Mineral salts calcium (Ca) and magnesium (Mg) and sometimes iron (Fe) and manganese (Mn) cause the "hardness" in hard water and react with soap to form an insoluble
curd known as a precipitate. This insoluble curd does not rinse away easily and tends to produce visible deposits on the fabric making it feel stiff. Some soap is used up by reacting with these hard water minerals reducing the amount of soap available for cleaning. Detergents have excellent resistance to hard water minerals which means their effectiveness does not diminish. Replacements were needed for both the hydrophilic and the hydrophobic parts of the soap molecule. Crude oil, a hydrocarbon, replaced the fats and oils in the hydrophobic end of the molecule and sulfuric acid when reacting with the petroleum hydrocarbon, replaced the carboxylate hydrophilic end of the molecule (the fatty acid). A second reaction adds an alkali to the acid to produce what is known as a detergent's surfactant (surface active) molecule. Surfactants are resistant to the minerals in water and will not form an insoluble residue. Thus, the detergent's surfactant, a hydrophilic, functions (is surface active) in the same way that a soap molecule functions.

Detergent performance improved in 1946 when a phosphate builder was added to the surfactant producing what is known as a built detergent.

Soap and detergent surfactant molecules work in similar ways to loosen dirt. Substantial numbers of
these molecules team up in an effective group to form a micelle. With the hydrophobic hydrocarbon end of the molecule anchored in oily dirt, they loosen, surround, and in effect solubilize or suspend the dirt until it can be rinsed away. Surfactant molecules are wetting agents which lower the surface tension of the water. Reducing surface tension allows the water to penetrate fabrics more easily facilitating the removability of water-soluble soils. There are four types of surfactants which are generally classified by their ionic (electric charge) properties in water. The surfactant's chemical structure determines its electrical charge: anionic has a negative charge, nonionic has no charge, cationic has a positive charge, and amphoteric has both a negative and a positive charge. Anionic surfactants are most widely used in laundering, dishwashing liquids, and shampoos. They ionize (are converted to electrically charged particles) in solution, carry a negative charge, have excellent cleaning properties, and are generally high sudsing. Linear alkylate sulfonate (LAS) is the most widely used anionic surfactant along with alkyl ethoxylate sulfates (also known as ether sulfates). Nonionic surfactants do not ionize in solution and have no electrical charge. They are resistant to water hardness and clean oily soils well. Nonionic surfactants are present in liquid laundry products in the
form of alcohol ethoxylates. Cationic surfactants ionize in solution and have a positive charge. They are the active component in fabric softeners, disinfectants, and sanitizers of hard surface and bathroom cleaners. They are the active cleaning agent in some laundry detergents. Amphoteric surfactants are either anionic (negatively charged) or cationic (positively charged) in solution, depending on the acidity or alkalinity of the water. Amphoteric surfactants are used for shampoos and personal care products, where mildness is important.

Builders are added to a detergent to upgrade or protect the cleaning efficiency of the surfactant. Builders soften wash water by deactivating hardness minerals. They do this by sequestration (holding minerals in solution), precipitation (removing minerals as insoluble materials), or ion exchange (a reversible chemical reaction). They also help emulsify oily and greasy soil by breaking it up into tiny globules. Builders are also buffering agents which maintain the proper alkalinity level in the water. Phosphates, carbonates, silicates, citrates, and aluminosilicates are the builders used in detergents. Phosphates (usually sodium tripolyphosphate) combine with calcium and magnesium to form a soluble complex phosphate (not
a precipitate) which can be removed with the water after the fabrics are washed. Phosphates also sequester dissolved iron and manganese, which can interfere with detergency. Sodium carbonate (soda ash, commonly referred to as washing soda) is an alkaline used as a builder to aid cleaning power. It softens water by precipitating calcium and magnesium minerals out of solution. However, this precipitate can accumulate on fabrics and machine parts. Sodium silicate is a builder when used in high concentrations in detergent formulations. When used in low concentrations, it inhibits corrosion and adds crispness to the detergent granules. Sodium citrate is the principle builder in liquid laundry detergents. Aluminosilicate builders (zeolites) are insoluble in water. They soften water by ion exchange. Zeolites attract calcium ions (which have an opposite charge), thus removing calcium from hard water.

Other important components of detergents are the antiredeposition agents. They prevent soil from settling back (redepositing) on fabrics. Since like electrical charges repel each other, the negatively charged CMC (carboxymethylcellulose) repels the negatively charged soil, preventing it from settling on the fabric.
Silk must, therefore, be washed in a synthetic unbuilt detergent (usually in liquid form), which has no phosphate or sodium citrate builders but has a high percentage of nonionic or anionic surfactants, and sodium carbonate (soda ash/washing soda) which is a precipitate (removing minerals by settling out rather than holding them in solution as a nonprecipitate would). Heavy-duty liquid detergents contain builders and are not mild enough for silk; therefore, use a light-duty liquid synthetic unbuilt detergent which is based on anionic surfactants and contains some ethyl alcohol for washing silk.
May, 1982

To the Readers of this Thesis:

A number of water-color paintings were photographed and the Vericolor negatives were submitted for production of 5" x 7" prints. After considerable testing and trial printings, it was determined that it was not possible to faithfully reproduce the fine, very faint detail while still maintaining the rest of the image. Attempts were made using Ektachrome film and the results were no better.

Professor Nile Root, Coordinator of Bio-Medical Communications and Dr. Leslie Stroebel, Chairman of Photographic Technology as well as several experts at Eastman Kodak were consulted concerning the problem, and it was the general concensus that photographing and printing of watercolors of the type represented here was an almost impossible task with ordinary photographic materials. It was suggested that special developing techniques might be necessary to alter the toe contrast of films and it was further suggested that dye transfer printing methods might produce more satisfactory results. There were no indications that ordinary color lab materials and techniques could produce better results than were obtained.

In conclusion, it is my considered opinion that the prints of Ms. Jaffie's water-color paintings are the best that we can produce in our lab. It is agreed that the prints do not show the very fine details that are present in the original paintings and that the only way to reproduce these details is by using very special techniques and materials.

Sincerely,

E. J. McCune

Professor E. J. McCune
R.I.T. Photo Processing
MFA Thesis Show II
May 1, 1982 - May 13, 1982
Bevier Gallery
RIT

List of work being shown:

I. 'Humoresque'
   Watercolor on Fabriano
   29" x 38"
   POR

II. 'Intermezzo'
    Watercolor on Fabriano
    36 1/2" x 29 1/2"
    POR

III. Untitled (Gladiola)
    Watercolor on d'Arches
    32" x 40"
    POR

IV. Untitled (Gladiolas)
    Watercolor on d'Arches
    32" x 40"
    POR

V. Untitled (Fern with Chuni Float)
   DuPont French Dye on Silk
   36" x 64" and 16" x 84"
   POR

VI. Untitled (Tulip)
    DuPont French Dye on Silk
    36" x 64"
    POR
Figure 1. Artist painting french dye on silk pongee pinned to foam-rubber apron.
Figure 2. "Twin Spires," watercolor on d'Arches of gladiolas, 32" x 40".
Figure 3. Untitled, watercolor on d'Arches of gladiola, 32" x 46".
Figure 4. "Intermezzo," watercolor on Fabriano of silver dollars, 36 3/4 x 29 1/4"
Figure 5. "Humoresque," watercolor on Fabriano of silver dollars, 29" x 38".
Figure 6. Untitled, DuPont French dye on silk of tulips, 36" x 64".
Figure 7. Untitled
duPont frencure on silk of
terns, 36" x 60".
Figure 8. *Untitled*, DuPont french dye on silk of ferns, 16" x 84".
BIBLIOGRAPHY


LIST OF RESOURCES

Cable-Weidemer - or any Restaurant Supply House, Rochester, New York

Catoir Silk Inc., Allentown, Pennsylvania

Chase Pitkin, Rochester, New York

Exotic Silks, San Francisco, California

The Fiber Shop, Rochester, New York

Ivy Crafts Imports - Lanham, Maryland

Kap-Pel, Inc., Kansas City, Missouri

Laurel Soap Co., Philadelphia, Pennsylvania

Light Impressions, Rochester, New York

Proctor and Gamble, Cincinnati, Ohio

Scobell Chemical, Rochester, New York

Soap and Detergent Association, New York, New York

Sureway Trading Enterprises, Toronto, Ontario, Canada and Niagara Falls, New York