

Portland State University

PDXScholar

Dissertations and Theses

Dissertations and Theses

5-13-1970

Cubist Painting Related to the Culture From Which It Came and Its Validity Today in the High School Curriculum

Virginia K. Fenton
Portland State University

Follow this and additional works at: https://pdxscholar.library.pdx.edu/open_access_etds



Part of the [Art and Design Commons](#)

Let us know how access to this document benefits you.

Recommended Citation

Fenton, Virginia K., "Cubist Painting Related to the Culture From Which It Came and Its Validity Today in the High School Curriculum" (1970). *Dissertations and Theses*. Paper 657.

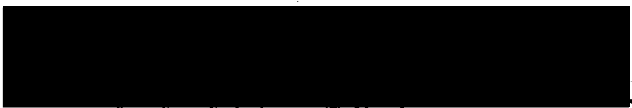
<https://doi.org/10.15760/etd.657>

This Thesis is brought to you for free and open access. It has been accepted for inclusion in Dissertations and Theses by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.

AN ABSTRACT OF THE THESIS OF Virginia K. Fenton for the Master of Science in Teaching presented May 13, 1970.

Title: Cubist Painting Related to the Culture from which It Came and Its Validity Today in the High School Curriculum.

APPROVED BY MEMBERS OF THE THESIS COMMITTEE:


Byron J. Gardner, Chairman


Raymond M. Grimm


Frederick J. Kline


Richard J. Frasch

Cubism has often been referred to as "a dead art." It is the objective of this thesis to present evidence gained through working with high school art students that the study of Cubism, at the secondary level, can result in greater creativity and a genuine appreciation of the abstract.

In addition to the study of Cubist artists and their techniques, a correlation was made between art of the early 1900's and other areas such as Social Science, Music and Literature of this time. By this

method, the students were given a broader insight into the motives of the Cubist artists.

The personal involvement of each student in the progressive changes from objective representation of subject matter to quasi-nonrepresentational painting provided them with more open attitudes in understanding art of the past and of the present.

Photographs of student work from an advanced art class at Reynolds High School are offered as evidence to support this thesis.

CUBIST PAINTING RELATED TO THE CULTURE FROM WHICH IT CAME
AND ITS VALIDITY TODAY IN THE HIGH SCHOOL CURRICULUM

by

VIRGINIA K. FENTON

A thesis submitted in partial fulfillment of the
requirements for the degree of

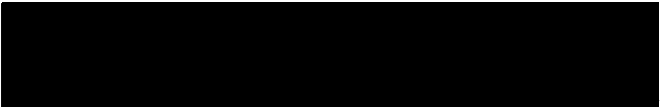
MASTER OF SCIENCE
in
TEACHING


Portland State University
1970


TO THE OFFICE OF GRADUATE STUDIES:

The members of the Committee approve the thesis of
Virginia K. Fenton presented May 13, 1970.

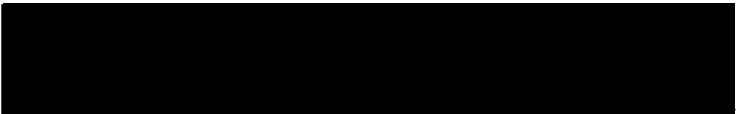

Byron J. Gardner, Chairman

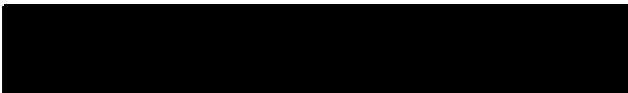

Raymond M. Grimm


Frederick J. Kline


Richard J. Prasch

APPROVED:


Frederick Heidel, Head, Department of Art


Dr. Frank L. Roberts, Acting Dean of Graduate Studies

May 15, 1970

TABLE OF CONTENTS

	PAGE
LIST OF FIGURES	v
CHAPTER	
I INTRODUCTION	1
Purpose of Thesis	1
Application to High School Classroom Situation	1
II BRIEF HISTORY OF CUBISM	3
III CLASSROOM PROCEDURE	5
Cezanne Phase	5
Presentation	5
Assignment No. 1	6
Assignment No. 2	7
Evaluation	7
Analytical Phase	12
Presentation	12
Assignment No. 1	13
Social Science Lecture	13
Assignment No. 2	14
Evaluation	15

	iv
CHAPTER	PAGE
Synthetic Phase	20
Presentation	20
Assignment	21
Music Lecture	21
Evaluation	22
Optional Problems	27
Presentation	27
Assignment	27
Literature Lecture	28
Evaluation	28
IV THE CORRELATION OF CUBISM WITH OTHER SUBJECT AREAS IN THE HIGH SCHOOL	31
Social Science	31
Music	36
Literature	43
V SUMMARY	50
BIBLIOGRAPHY	51
APPENDIX A	52
APPENDIX B	53

LIST OF FIGURES

FIGURE		PAGE
1	Cezanne Phase: Charcoal Study, 18" x 24", Sheryl Sturgill, 1969	9
2	Cezanne Phase: Charcoal Study, 18" x 24", Lori Unis, 1969	9
3	Cezanne Phase: Charcoal Study, 18" x 24", Sheryl Sturgill, 1969	10
4	Cezanne Phase: Charcoal Study, 18" x 24", Sheryl Sturgill, 1969	10
5	Cezanne Phase: Water Color Painting, 18" x 24", Darla Thompson, 1970	11
6	Cezanne Phase: Water Color Painting, 18" x 24", Sheryl Sturgill, 1970	11
7	Still Life Arrangement	16
8	Analytical Phase: Tempera and Polymer Painting, 24" x 36", Lori Unis, 1970	16
9	Analytical Phase: Oil Painting, 32" x 40", Cheryl Fujii, 1970	17
10	Analytical Phase: Tempera and Polymer Painting, 36" x 36", Sheryl Sturgill, 1970	17

FIGURE

PAGE

11	Still Life Arrangement	18
12	Analytical Phase: Oil Painting, 24" x 28", Barbara Brown, 1970	18
13	Analytical Phase: Tempera and Polymer Painting, 32" x 48", Jack Braman, 1970	19
14	Analytical Phase: Oil Painting, 45" x 39", Cheryl Fujii, 1970	19
15	Synthetic Phase: Collage and Oil Painting, 30" x 24", Paula Wade, 1970	24
16	Synthetic Phase: Collage and Oil Painting, 24" x 36", Cheryl Fujii, 1970	24
17	Synthetic Phase: Collage and Acrylic Painting, 24" x 34", Gail Madsen, 1970	25
18	Synthetic Phase: Collage and Oil Painting, 20" x 28", Carol Bradbury, 1970	25
19	Synthetic Phase: Collage and Oil Painting, 20" x 30", Barbara Brown, 1970	26
20	Synthetic Phase: Collage and Tempera Painting, 18" x 24", Lori Unis, 1970	26
21	Optional Problems: Futurism; Oil Painting, 30" x 38", Sheryl Sturgill, 1970	29
22	Optional Problems: Futurism, Oil Painting, 32" x 22", Barbara Brown, 1970	29

FIGURE

PAGE

23	Optional Problems: Cubism (based on <u>The Fifer</u> by Manet), Oil Painting, 15 $\frac{1}{4}$ " x 24", Jack Braman, 1970	30
24	Optional Problems: Minimal Art, Acrylic Painting, 20" x 24", Darla Thompson, 1970	30

CHAPTER I

INTRODUCTION

I. PURPOSE OF THESIS

This thesis proposes that Cubism, often referred to as "a dead art", if properly presented at the secondary level, can result in greater creativity, freedom of expression, and a genuine appreciation of the abstract.

Cubism, an influential force in much of Twentieth Century art, occupies a pivotal period between representational and abstract art. Because of its intellectual basis, definite innovative practices, and a sense of rebellion, Cubism is an area of art history especially appropriate for study by a high school painting class.

A vital art program should familiarize students with significant movements in areas other than art during any particular period in history. Therefore, ideas and learning materials pertaining to parallel innovations in science, music, and literature of the Cubist era have been integrated with the study of Cubism.

II. APPLICATION TO CLASSROOM SITUATION

For this unit, an advanced painting class at Reynolds High School was selected. These students already were knowledgeable in the basic painting skills, colour theory, and use of various media. The class was composed of fifteen students, eleven girls and four boys.

It was felt that a group such as this would be ready to use their abilities without too many inhibitions, and to extend this knowledge by creative participation in new avenues of seeing.

The unit covered a twelve week period (one week consists of one forty minute period and two eighty minute periods) which was divided into the following four areas of study:

1. The Cezanne Phase
2. The Analytical Phase
3. The Synthetic Phase
4. Optional Problems

To supplement the basic history of Cubism necessary to motivate these studies, teachers from other departments in the high school were asked to meet with the painting class. Discussions were held concerning the relationship of art of the 1920's to other areas such as music, social science, and literature of this time. By this method, the students were given a broader insight into the motives of the Cubist artists.

It was anticipated that study of the progressive changes from objective representation of subject matter to quasi-nonrepresentational painting would aid students in understanding art of the past and of the present. This understanding would be intensified by each individual experiencing a similar evolution in his own art work. It was also hoped that study of influences and reasons underlying a radical movement in art might provide students with more open attitudes toward contemporary art and unforeseeable innovations in future art.

CHAPTER II

A BRIEF HISTORY OF CUBISM

Cubism is the parent of all abstract art forms. It grew out of the efforts of Picasso and Braque to replace the purely visual effects of Impressionism with a more intellectual concept of form and colour. Their starting point was Cezanne, who had striven to the same ends, but Cubism carried much further the ideas of unity of the two-dimensional picture surface, and the analysis of forms and their interrelation. The Cubists deliberately gave up the representation of things as they appear in order to give an account of the whole structure of any given object and its position in space. This meant, in practice, combining several views of the object all more or less superimposed, expressing the idea of the object rather than any one view of it.

The name Cubism was derisive, for it excited as much opposition as Impressionism itself, or the recent Fauvism. It was much influenced by Negro art, by Picasso's interest in Iberian sculpture, and by reaction from the pattern-making of Fauvism. Gris, Leger, Delaunay, and Derain were among the early adherents. The new aesthetic was soon preached by two practicing Cubist painters, Gleizes and Metzinger, whose book, Du Cubisme, was published in 1912 and later translated into English. The poet Appollinaire followed in 1913 with Les Peintres Cubistes.

The first phase, under the influence of Cezanne, lasted from 1906

to 1909; the second, sometimes called High or Analytical Cubism, lasted from 1909 to 1912 and minimized interest in colour or handling while concentrating on the breaking down of forms; finally, Late or Synthetic Cubism (1912 - 1914) allowed a re-emergence of tactile qualities, colour, and handling. The collage developed as a result of interest in textures and pasted down materials.¹

¹Peter and Linda Murray, A Dictionary of Art and Artists, 3rd ed. (Great Britain, 1963), pp. 75-76.

CHAPTER III

CLASSROOM PROCEDURE

I. THE CEZANNE PHASE

Presentation

A review of Cezanne's theory of geometric form in nature was presented. It was pointed out how strongly Picasso and Braque were affected by Cezanne: his use of geometric shapes to convey volume and structure; his blurring of colours to counteract illusions of depth. These two artists went far beyond Cezanne in exaggerating their cubed shapes and in minimizing the differences between background and foreground.

Picasso's Les Demoiselles d'Avignon (1907) was shown as a starting point of Cubism.² The influence of African sculpture upon Picasso was explained.³ It was stressed that this was the developmental period of Cubism and a rebellion against traditional art forms.

By use of an opaque projector, reproductions were shown of the following paintings by Picasso and Braque during the Cezanne Phase.

Braque. Houses at L'Estaque, 1908 (accompanied by photograph of actual site).⁴

²Tom Prideaux, "Cubism," Life, Dec. 27, 1968, p. 50.

³Ibid, pps. 52-53.

⁴Edward F. Fry, Cubism (New York, 1966) pls. 10-11.

- Picasso. Landscape at Horta De Ebro, 1909 (accompanied by photograph of actual site).⁵
 Braque. Road near L'Estaque, 1908.⁶
 Picasso. La Rue -- Des -- Bois, 1908.⁷
 Braque. Guitar and Accordion, 1908.⁸
 Picasso. Reservoir at Horta de Ebro, 1909.⁹

An analysis was made of the influence of Cezanne upon early Cubism: flattened perspective, equal emphasis of positive and negative space, geometric simplification and faceted shapes, colour, but somewhat toned down in comparison to Cezanne.

Assignment No. 1

A preliminary assignment was given to complete four charcoal studies on white drawing paper; two landscapes and two still lifes. The students were to concentrate on the points previously discussed. Time allowed: two weeks.

Procedure. A pencil sketch was made to establish the simple geometric forms of each composition. This was redrawn with charcoal, which was then blended with a tissue or paper towel. In this manner a grayed tonal effect was established as a basis for the entire picture. The student then worked into this using charcoal and a kneaded eraser as drawing tools. The final highlights were emphasized by white chalk or white Conte crayon. When completed, a fixative was applied to

⁵Ibid, pls. 14-15.

⁶Guy Habasque, Cubism, trans. Stuart Gilbert, (Paris, 1959), p. 25.

⁷Ibid, p. 24.

⁸Habasque, p. 27.

⁹Ibid, p. 32.

prevent smudging.

Media. 18 x 24, white drawing paper
 3 B drawing pencil
 Alphacolor Char-Kole
 White chalk
 White Conte crayon
 Kneaded eraser
 Krylon Workable Fixative

Assignment No. 2

The best one of these four drawings was selected and used as a basis for a Cubist painting representative of the Cezanne Phase. Time allowed: two weeks.

Procedure. A second sketch was made of the chosen drawing, this time on watercolor paper. Straight lines and edges were emphasized. A ruler was used when necessary. A light wash of the basic colour was then applied to the entire sheet of paper. Monochromatic colours were used with just a touch of the complement for contrast and lowered intensity. The transparencies were gradually built up to create the desired effect.

Media. Talons opaque watercolors
 Grumbacher (No. 3196R) watercolor paper
 Watercolor brushes (optional sizes)

Evaluation

This class had just finished a study of Impressionism when Cubism was introduced. Thus, they were familiar with Cezanne and his attempt to give form to Impressionism. Some of the students had difficulty in adjusting to even this slight transition from the traditional "draw what you see" approach. However, all were willing to tackle the assignment. It was pointed out that this was the developmental period

of Cubism and that the Cubist artists experienced a similar struggle in breaking away from the traditional.

CEZANNE PHASE

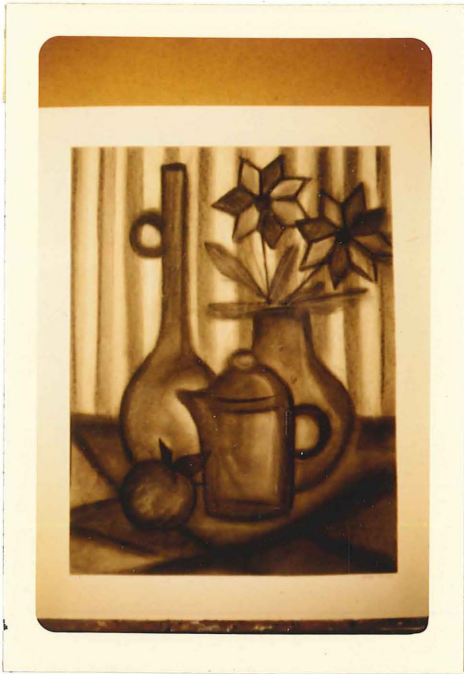


Figure 1. Charcoal study, 18" x 24",
Sheryl Sturgill, 1969.

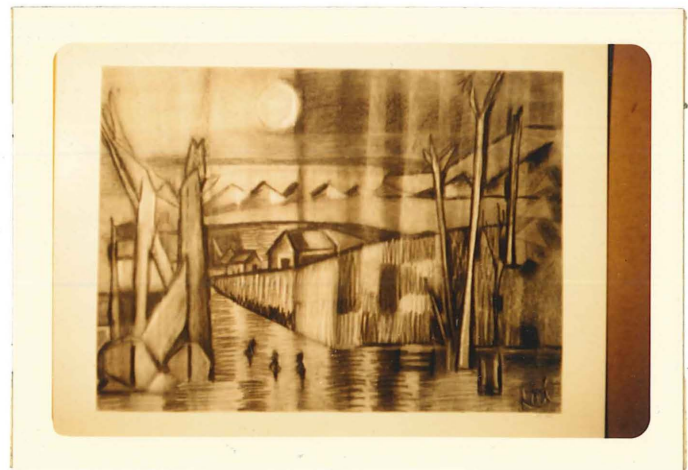


Figure 2. Charcoal study,
18" x 24", Lori Unis, 1969.

CEZANNE PHASE

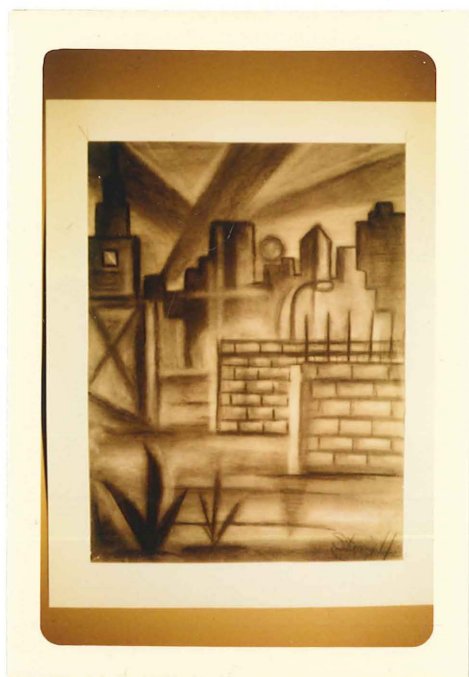


Figure 3. Charcoal study, 18" x 24",
Sheryl Sturgill, 1969.



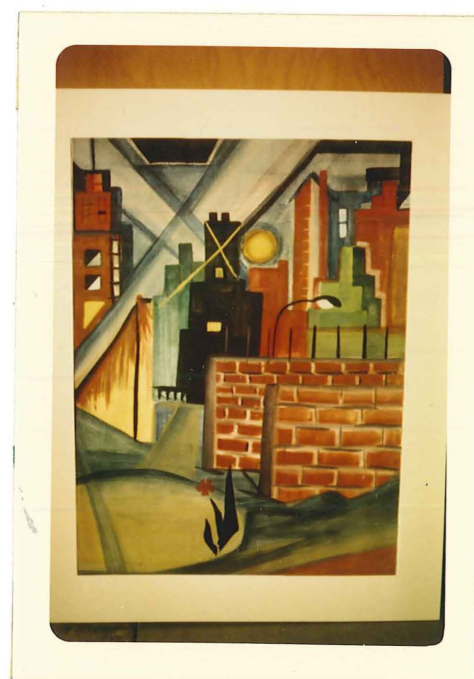
Figure 4. Charcoal study,
18" x 24", Sheryl Sturgill,
1969.

CEZANNE PHASE



Figure 5. Water Color Painting,
18" x 24", Darla Thompson, 1970.

Figure 6. Water Color Painting,
18" x 24", Sheryl Sturgill, 1970.



II. THE ANALYTICAL PHASE

Presentation

It was explained that Analytical Cubism took its place as a preliminary exploratory exercise. The real objective of the Cubists was to reconstruct nature, not to imitate it. There was an architectural approach. Form was more important than subject or colour, but familiar forms must be used so as not to lose the identity of the subject matter. Words, numbers, and musical notes were sometimes introduced to give clues to subject matter. Analytical Cubism was an attempt not to gloss over the paradox of depth, but rather to exploit it for new effects.

Simultaneity. This device explored the simultaneous revelation of more than one aspect of an object in an effort to express the total image. The Cubist was not interested in usual representational standards. It is as though he is walking around an object he is analyzing in order to see all successive views. But he must represent all these views at once.

Transparency. When one object is behind another, the full shape of both can be drawn, making a new shape as they overlap. Also the colour of this shape becomes a blend of the colours of the two original shapes. Example: when a blue shape overlaps a red one, a new violet shape is created.

The following reproductions of Analytical paintings (from the Failing Art Room, Multnomah County Library) were shown to illustrate simultaneity and transparency. This was done with an opaque projector. Later these same pictures were mounted on a bulletin board in the art

room.

Picasso. Portrait of Ambroise Vollard, 1910.
 Picasso. The Mandolin Player, 1912.
 Metzinger. Tea Time, 1911.
 Metzinger. La Plume Jaune, 1912.
 Gris. Still Life with Cards, 1914.
 Gris. Still Life in Front of Window, 1912.
 Gris. Breakfast, 1912.
 Braque. Still Life with Violin and Pitcher, 1909.

The film Cubism (Patrician Films; property of M.C.I.E.D. Multnomah County Schools Audio Visual Center, Portland, Oregon) was viewed by the class. This film shows animated diagrams and paintings to explain Cubist painting. A step by step summing up presents a good illustration of the technique.

Assignment No. 1

Two preliminary exercises were assigned. Time allowed: two weeks.

Procedure. A single object in the room was chosen, such as a bottle, a piece of artificial fruit, etc. Several views of this were drawn with pencil and a simple design created. The original quality of the object was maintained. This was finished in ink on 9 x 12 white drawing paper.

A second design was created using two or three objects. Transparencies were shown by overlapping shapes and intermingling of colours. This was finished in ink or pencil and watercolor on 9 x 12 white drawing paper.

Social Science Lecture

A correlation was made between Cubism and Social Science of the

early Twentieth Century. This was introduced in order to increase the students' understanding of the motives of the Cubist painters. (For details of Mr. Jack Ottman's lecture, plus my own observations, please see Chapter IV.)

Assignment No. 2

An assignment was made to do a large Analytical Cubism painting showing both simultaneity and transparency. Time allowed: two and one half weeks.

Procedure. As a preliminary to the painting, the student selected one of the still lifes in the room. (Three were set up.) Four sketches on 12 x 18 white drawing paper were made from extremely opposite views (looking down, looking up, opposite side of the room, etc.) He drew exactly what he saw - but roughly - details were not necessary. The most appealing sections were cut from these drawings, but never a whole object. These were then arranged in a Cubist composition and glued onto white drawing paper in proportion to the final painting, but not so large. If desired, the student worked into the composition with pencil. When completed, this pencil draft was used as a guide for the finished painting. It was redrawn and enlarged on the painting board. Analagous colours were used.

Media. Oil or Acrylic paint, or powdered tempera paint combined with Polymer media.

Masonite board ($\frac{1}{4}$ inch thick with canvas back, painted with white Latex flat wall paint. Sizes: 18" x 24" to 32" x 48".)

Brushes (large but optional sizes).

Evaluation

This was difficult to present and equally difficult to teach. I stressed that the Analytical Phase was a necessary discipline for the Cubists; it was a preliminary exploratory exercise and should be considered the same by a high school art class. When the students finally realized the creative possibilities of this assignment, they were most enthusiastic. Most of them chose to do the guitar arrangement. One boy and one girl created their own compositions and also used a different colour scheme than the one assigned.

I allowed them to use more colour than I had originally intended in order to hold their interest. I felt justified in doing this as Metzinger and Gleizes used brighter colours in their work during this period.¹⁰

As a result of the Social Science lecture, many unplanned group discussions ensued during the week. The students agreed that they had a much greater insight into the motives of the Cubist painters.

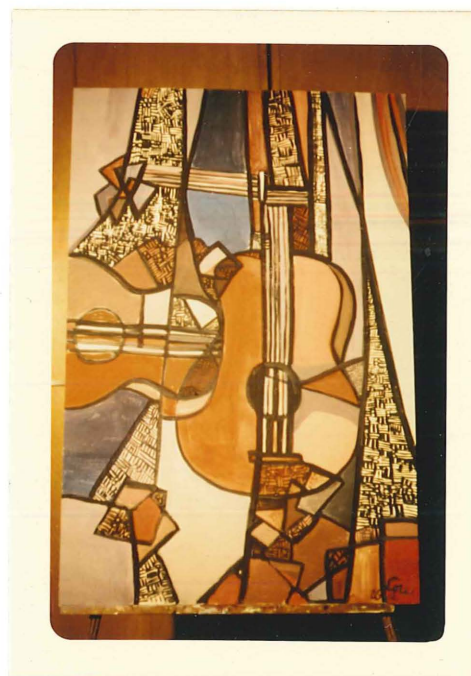
¹⁰John Canaday, Mainstreams of Modern Art (New York, 1965) p. 458.

ANALYTICAL PHASE



Figure 7. Still Life Arrangement.

Figure 8. Tempera and
Polymer Painting, 24" x 36",
Lori Unis, 1970.



ANALYTICAL PHASE



Figure 9. Oil Painting, 32" x 40",
Cheryl Fujii, 1970.

Figure 10. Tempera and
Polymer Painting, 36" x 36",
Sheryl Sturgill, 1970.



ANALYTICAL PHASE



Figure 11. Still Life Arrangement.

Figure 12. Oil Painting,
24" x 28", Barbara Brown,
1970.



ANALYTICAL PHASE



Figure 13. Tempera and Polymer
Painting, 32" x 48", Jack Braman,
1970.

Figure 14. Oil Painting,
45" x 39", Cheryl Fujii,
1970.



III. THE SYNTHETIC PHASE

Presentation

Synthetic Cubism was presented as a much more flexible type of art than the Analytical phase. It was stressed that this freedom could not have evolved without the preliminary intellectual discipline of Analytical Cubism. It was an emergence from these restrictions with the use of brighter colours, flatter space, more interest in surface textures, collage or pasted down materials, and decorative design. This period of Cubism turned each painter loose to find his own way within a vast field of free invention. Shapes and colours were now determined by the painter's sensitivity alone. A more normal perspective was employed. Thus painting had returned to the old basis -- the painter's reaction to the world and his interpretation of it in coloured forms.¹¹

The following reproductions of paintings (from the Failing Art Room, Multnomah County Library) were shown to illustrate Synthetic Cubism. This was done with an opaque projector.

- Picasso. Still Life with Chair Caning, 1912.
- Picasso. Mandolin and Guitar, 1924.
- Picasso. The Red Cloth, 1922.
- Picasso. Three Musicians, 1921.
- Gris. Bottle and Glass, 1914.
- Picasso. Man with Pipe, 1920.
- Picasso. Still Life with Wine, 1921.
- Gris. Fruit Dish and Bottle, 1918.
- Picasso. Bottle of Suze, 1913.

¹¹Ibid, p. 461.

Assignment

An assignment was made to do a large Synthetic Cubism painting, using a combination of paint and collage materials. Time allowed: two weeks.

Procedure. In this project the students had complete freedom of choice as to subject matter and materials. Three colorful still-lives were set up in the room, but they could use any theme that appealed to them. They were to observe only the following: flat patterning, decorative design, brighter colours, and the use of one material other than paint --- more if desired. They could paint over the synthetic material, leave it completely exposed, or paint into just part of it. They could not use all collage materials and no paint. It was not necessary to use simultaneity or transparencies unless this contributed to a pleasing composition. No preliminary work was assigned. It was suggested that a sketch would be an aid, but the materials used might suggest the design. Time allowed: two weeks.

Media. Masonite board, $\frac{1}{4}$ inch with canvas back painted with white Latex paint.

Oil or Acrylic paints (or tempera mixed with Polymer media).

Collage materials (optional).

Polymer media (used as glue).

Hyplar Modeling Paste.

Brushes (large but optional sizes).

Music Lecture

The music of the early 1900's was paralleled to the works of the Cubist artists. The students listened to recordings of influential composers of this era which were placed in context with Cubist

concepts. (For details of Mr. Fred Schmale's presentation, plus my own observations, please see Chapter IV.)

Evaluation

This assignment, or the materials approach to art, seemed to further the creative capacities of the students and develop their sensitivity to texture, form, and design. Several of them chose to work with figure compositions. As it seemed necessary to steer them away from cartooning, I explained that distortion was a different approach than the caricature. I stressed that Synthetic Cubism was rich and elegant because of interest in colour and texture. Regardless of subject matter, it was never cheap or gaudy.

The students had to make individual decisions as to design and materials. In spite of the fact that no preliminary assignment was given, they spent more time planning this than the previous projects. Sometimes the original plan was altered in the course of working with the materials -- or once the material was glued down, a new idea might develop. They used many different collage materials including: velvet, burlap, coloured tissue paper, corrugated cardboard, wallpaper, newspaper, metal foil, and an acrylic modeling media for simulating textures.

As one boy put it: "This is more fun, and we can do our own thing."

This seemed the right time to introduce Music of the Twentieth Century, as the terms - texture, pattern, tone and colour - so evident in Synthetic Cubism, are many times included in a music vocabulary. As

a result of this lecture, the students realized that the concepts of Cubism were not confined to painting alone; and that the cultural trends of music and art have often been paralleled throughout history.

SYNTHETIC PHASE

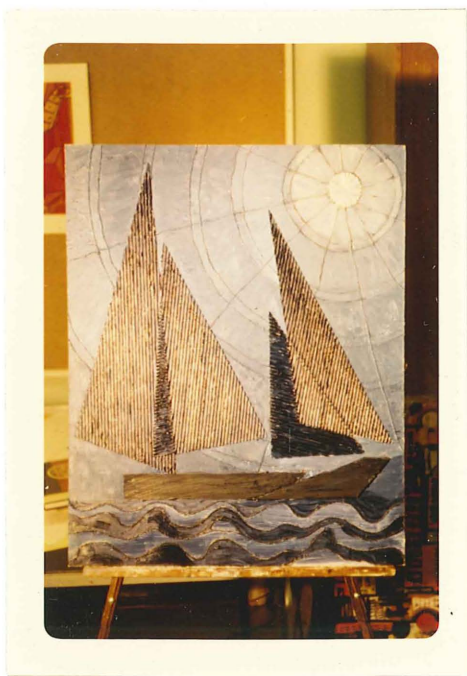


Figure 15. Collage and Oil Painting,
30" x 24", Paula Wade, 1970.



Figure 16. Collage and
Oil Painting, 24" x 36",
Cheryl Fujii, 1970.

SYNTHETIC PHASE



Figure 17. Collage and Acrylic
Painting, 24" x 34", Gail Madsen,
1970.



Figure 18. Collage and
Oil Painting, 20" x 28",
Carol Bradbury, 1970.

SYNTHETIC PHASE

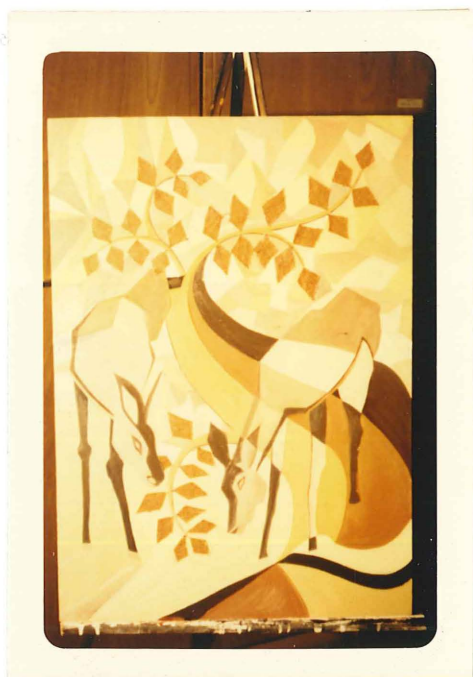


Figure 19. Collage and Oil Painting,
20" x 30", Barbara Brown, 1970.

Figure 20. Collage and
Tempera Painting, 18" x 24",
Lori Unis, 1970.



IV. OPTIONAL PROBLEMS

Presentation

Cubism was presented as the parent of all abstract art forms: the concepts of Cubism took many different directions, and its influence is very much in evidence today.

Reproductions of paintings (from the Failing Art Room, Multnomah County Library) were shown to illustrate some of these derivatives of Cubism.

Assignment

The students chose one of the following five projects as their final assignment in this unit:

1. Futurism.

Simultaneity was used in the extreme to show motion.

Example: Duchamp. Nude Descending a Staircase.

2. Commercial Art.

The flat design and bright colours of late Cubism had a great effect on posters and commercial art work. Example: Leger, The City.

3. A Cubism painting based on a famous painting. Example: Juan Gris. Woman With Mandolin. (based on painting by Corot).

4. Minimal Painting.

Cubism led to this simplification of Cezanne's theory of colour and form. Example: Mondrian. Broadway Boogie Woogie.

5. Optical Art.

This form of art is popular now. It creates an illusion of space with line and colour. Example: Vasarely, Atom and Albers, Deep Signal.

Media. The students had freedom of choice as to materials.

Literature Lecture

The literature of early modern writers was related to Cubist painting. The keynote of this discussion was the development of individual creativity. (For details of Mr. Richard Rauer's lecture, plus my own observations, please see Chapter IV.)

Evaluation

To simplify this assignment, which in itself could be another thesis, I involved the students in only one project. The advantage of a classroom situation is that the students learn from each other's work as well as their own. The result of this assignment was a greater awareness of the use of Cubist colour and form in commercial areas today as well as in the museums.

The discussion of literature and Cubism made the students realize the importance of individual creative thought as opposed to conformity in today's society.

OPTIONAL PROBLEMS



Figure 21. Futurism, Oil Painting,
30" x 38", Sheryl Sturgill, 1970.



Figure 22. Futurism,
Oil Painting, 32" x 22",
Barbara Brown, 1970.

OPTIONAL PROBLEMS

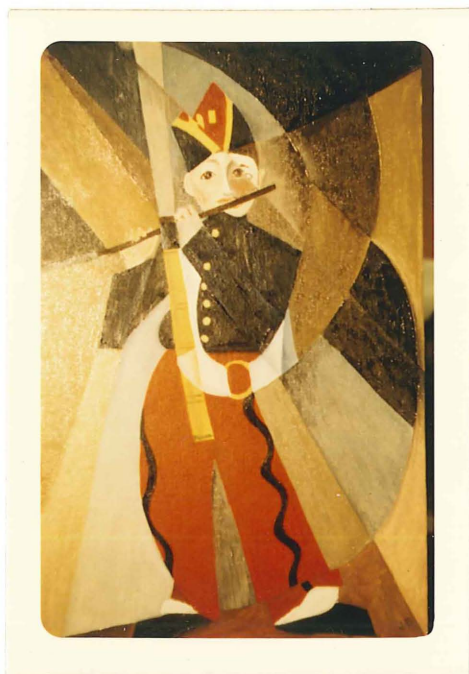


Figure 23. Cubism (based on *The Fifer* by Manet), Oil Painting, 15 $\frac{1}{4}$ " x 24", Jack Braman, 1970.

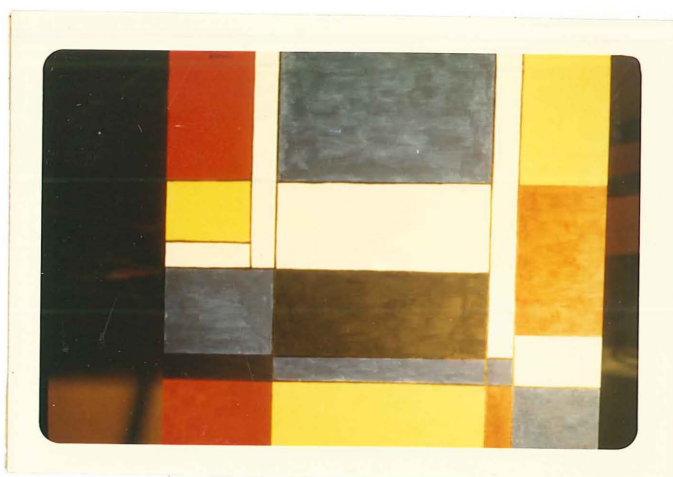


Figure 24. Minimal Art, Acrylic Painting, 20" x 24", Darla Thompson, 1970.

OPTIONAL PROBLEMS

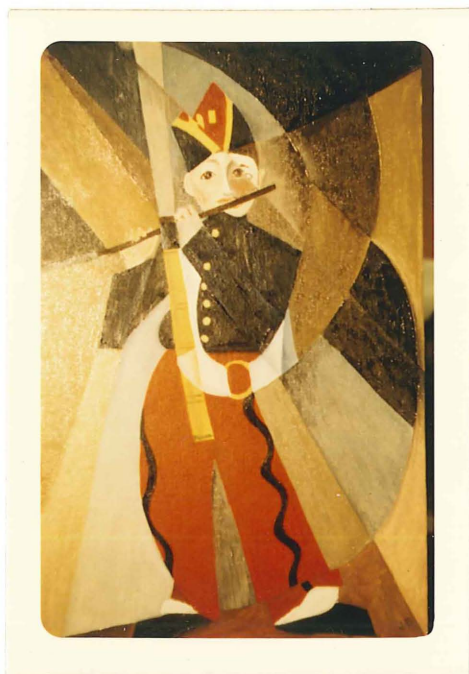


Figure 23. Cubism (based on *The Fifer* by Manet), Oil Painting, 15 $\frac{1}{4}$ " x 24", Jack Braman, 1970.

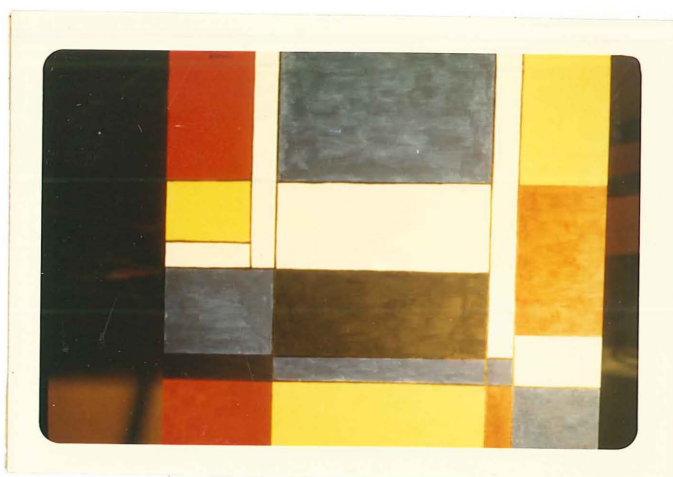


Figure 24. Minimal Art, Acrylic Painting, 20" x 24", Darla Thompson, 1970.

CHAPTER IV

THE CORRELATION OF CUBISM WITH OTHER AREAS IN THE HIGH SCHOOL

I. SOCIAL SCIENCE

The Cubism of Picasso and Braque is a product of their time. It is an art of rebellion and change that expresses the condition of modern man who has been forced to live in a world where there are no longer any simple locations, where all things are plural.¹²

With the death of Queen Victoria in 1901 came an end to the "Victorian Age," or the era of set rules and established traditions. European thought, or "the continental way" became predominant. Europe, and particularly Paris, the home of Picasso, was the center of great creative activity and moral freedom. Also, the advent of new advances in science and technology, the machine and mass production had speeded up man's pace of living. In 1917 came the Bolshevik Revolution with the triumph of Marxism, and from 1914 to 1918 the First World War. All these things contributed to a spirit of restlessness, dissatisfaction, and a quest for the new.

For Picasso it was as unthinkable to go on painting in modes that had been formulated decades ago as it would be for a scientist to spend his life repeating the experiments of his predecessors. Picasso and Braque were determined to discover what new things art could do and

¹²Prideaux, p. 62.

say. And in the process they had not only to change the visual language they had grown up with but invent a whole new visual vocabulary, or new ways to express new ideas.

In Picasso's controversial painting, Les Femmes d'Alger (1907), is found the first clear assertion of the principles of Cubism. Beyond any doubt the distortions and mask-like figures were disturbing amendments. But they were precisely the disturbances that make this painting so expressive of the Twentieth Century. They remind us of the jostling incongruities of our era, and in art, the rapid shift of styles. Picasso's picture is not a static document. It is a record of the very process of sudden change, a memo from a world in transit.¹³

Picasso's portrait of Ambroise Vollard, painted in 1910 during his Analytical period, is also a testimony to modern living. Vollard vibrates with motion, like city traffic at rush hour. Yet it is held firmly in balance by unifying forms and colours, and we feel safe from accidents or collisions.¹⁴

Spurred by their identical interests, Picasso and Braque teamed together like two scientists in the same field. Within a few years their pictures looked so much alike that it was hard to tell who did what. Meeting every day and religiously criticizing each other's work, they liked comparing themselves to the Wright Brothers who were conducting aviation experiments in France at this time and were wildly admired in scientific and literary circles. Picasso humorously signed a

¹³Ibid, p. 53.

¹⁴Prideaux, p. 58.

note to Braque with the name "Vilbure" (his French attempt at Wilbur) to testify that they, too, were brother pioneers and, in their own way, exploring space.¹⁵

The painting of Fernand Leger is closely attached to the industrial civilization of the Twentieth Century. It is so far its strongest and most enthusiastic expression. Leger gave unstinted admiration to this civilization which so many are inclined to describe as inhuman. Even the First World War (1914 - 1918), in which he served as a sapper, did not prevent him from being "dazzled by the open breech of a '75 gun in the sunlight, the magic of light shining on metal." He did not hesitate to declare: "This breech has taught me more about art than all the museums in the world."¹⁶

Leger acknowledged the changes that this new civilization had forced upon man. About 1913 he painted robots with disjointed limbs, before creating about 1920 beings with bodies made up of metal tubes, whose arms were pistons and whose fingers bolts. He wrote that what he beheld whizzing by from a train window or through a car windshield gave a blurry, many-sided impression that was Cubist in essence.¹⁷

The Cubist painters did not shut themselves up in their studios and paint just the humble objects lying on the table. Delaunay was inspired by the Eiffel Tower, Leger painted a Level Crossing and a View of Paris from the Window, and both of them were acutely aware of the

¹⁵Ibid, p. 56.

¹⁶Joseph-Emile Miller, Modern Painting IV: Cubists to Early Abstract Painters (New York, 1965), p. 27.

¹⁷Prideaux, p. 62.

swift rhythm of modern life and the abrupt sensations of the new world that technology was building around them. La Fresnaye's Conquest of the Air (1913)¹⁸ perhaps sums up the contemporary scientific thinking of the Cubist painter. It reflects his intellectual attitude toward analysis of space in art, inspired perhaps by scientific innovations in this same field.

More and more people did look at Cubism and often recognized in it relationships and meanings that surprised its creators. The Cubist aspect of simultaneity was related to Einstein's theory of relativity: Physical concepts are relative to the observer; space and time have no absolute significance; they depend on the motion of the observer.¹⁹ Laymen saw the lines between Sigmund Freud's new theories that pointed to hidden aspects of human consciousness, similar to Cubism's hidden aspects of reality. Gertrude Stein reported that the whole of America seen from an airplane looked like a Cubist painting.²⁰

Altogether, there was much evidence to suggest that Cubism had indeed aligned itself to the new world of philosophy, science, and technology. Now, modern man moved from place to place with increasing rapidity and the picture he received of the world was complex. It was this complexity that the Cubists endeavored to transfer to canvas by juxtaposing on the same plane the different aspects of an object that the eye cannot see simultaneously, but that the mind has the ability to

¹⁸Muller, p. 11.

¹⁹Ernest G. Strauss, "Albert Einstein," The Encyclopedia Americana (New York, 1969), X, 42.

²⁰Prideaux, p. 62.

reunite.

II. MUSIC

The music of most early modern composers of the Twentieth Century reflects the upheavals of their time. Much of it was music that no longer tried to "please" its audience but simply to excite the aural nerve, to make listeners sit up and take notice. Three composers dominate this period because they are the ones who have exerted the greatest influence on Twentieth-Century music. They are Schoenberg, the composer-mathematician, Stravinsky, the many faceted composer-antiquarian-modernist, and Bartok, the composer-historian. Though their methods differed, all three are equally concerned with finding a way out of what they felt was the impasse of Nineteenth-Century music. These men were contemporaries of Picasso and Braque, and their musical compositions have many of the same aspects as Cubism, and were motivated by similar forces.

The scholarly Viennese, Arnold Schoenberg, revolutionized modern harmony with his "twelve-tone system," which he evolved during the years of the First World War. The twelve tone or serial music is composition based on a row or series of twelve tones arranged in any order the composer decides upon. This may be compared to the simultaneity of Cubism. The tones may be used successively (as melody) or simultaneously (as in harmony) but each of the twelve should be used prior to any one of them recurring. The row may be inverted, in retrograde, etc. Each of the twelve notes is of equal value, and none more important than another as in the major -- minor system. As a rule, listeners will not be able to

distinguish the tone row and its variations; what they usually hear is an effect of aural "weightlessness" of music quite unrelated to the music familiar to them.

Schoenberg's pre-1910 compositions, though gentle prophecies of his harmonic revolution, sounded "wrong" enough to provoke a series of uproars in Viennese concert halls. Newspapers attacked the composer as a fanatic of nihilism and disintegration. The "Chamber" Symphony of fifteen solo instruments was nicknamed "the chamber-of-horrors symphony." His Three Piano Pieces, Opus 11, was the subject of a mocking review by the Berlin critic, Walter Dahms: "First a child taps the piano aimlessly, then a drunk smashes the keys like mad, and at the end someone seats himself . . . on the keyboard."²¹

Critic Henry Finck of the New York Evening Post interpreted Schoenberg's new style as merely a bid for publicity: "He was ignored until he began to smash the parlor furniture, throw bombs, and hitch together ten pianolas all playing different tunes, whereupon everybody began to talk about him." Richard Strauss opined that "only a psychiatrist can help poor Schoenberg now."²²

We are reminded here of similar reactions to Picasso's first Cubism painting, Les Femmes d'Alger. Matisse declared that Picasso was trying to ridicule modern art. Georges Braque could only say that Picasso was asking them to exchange "their usual diet for one of tow and paraffin." Another noted painter, Andre Derain, prophesied

²¹Frederick V. Grunefeld, The Story of Great Music: The Early Twentieth Century (New York, 1967), p. 32.

²²Ibid., p. 32.

that Picasso would be so crushed by his failure that "one day we shall find Pablo has hanged himself behind his great canvas."²³

Schoenberg's prewar operas were perfectly attuned to the dawn of the Freudian era, and most of their characters are dream figures just graduated from the unconscious. *Die Gluckliche Hand* ("The Hand of Fortune," 1913) is a succession of dreamlike sequences about a modern artist's life. The text by Schoenberg, was autobiographical, put together with the honesty and clumsiness of the pictures he was now painting -- portraits and sketches which, he remarked proudly, were "highly praised by experts in the field."²⁴

Schoenberg's serial music in the last half of this century, like Picasso's art, still appeals only to those who understand it -- chiefly those who have made a study of the modern movements. What mattered was not how the piece was made, but the end product -- a new sound.

Igor Stravinsky, a brilliantly inventive composer from St. Petersburg, dropped his first bombshell on music with his Rite of Spring in 1913 -- a ballet that gave audiences their initial taste of the savage power of percussion.

The main spring of Stravinsky's art is rhythm. He was a leader in the revitalization of European rhythmic style. It is significant that his first great success was won in the field of ballet, where rhythm is allied to dynamic body movement and expressive gesture. His is rhythm of unparalleled thrust and tension, supple, powerful,

²³Prideaux, p. 53.

²⁴Grunefeld, pps. 32-33.

controlled. Units of seven, eleven, or thirteen beats, a continual shifting from one meter to another, the dislocation of the accent by means of intricate patterns of syncopation. These and kindred devices revolutionized the traditional concepts.

The Rite of Spring was written at the instigation of Serge Diaghilev, the famous director of the Russian ballet and one of the key figures in Twentieth-Century art. Faced with the necessity of presenting a new and sensational ballet every year, and ever sensitive to what was new and "smart," he decided to capitalize on the current interest in primitive art. While Japanese prints had inspired painters in the 1880's, African sculpture and masks now captured the attention of the artistic world. The rude distortions and simplifications of the masks deeply stimulated German painters such as Kirchner and Marc, as well as Picasso and Braque, then young Cubists in Paris.²⁵

The time was right, then, to exploit this dim past in the theater, and Diaghilev was the man to do it. He chose a new team, this time, with Stravinsky for the music, Nijinski for the choreography, and Roerich for the settings and costumes. The theme was the religious rite of prehistoric man in propitiation of spring, culminating in human sacrifice.

The reaction of the opening-night audience has been recounted by Hanson:

The audience soon took sides, those who were shocked at the ballet opposing those who were in favor of it. Soon duchesses

²⁵Peter S. Hanson, An Introduction to Twentieth Century Music (Boston, 1961), p. 45.

were attacking their neighbors with their evening bags, and dignified bearded Frenchmen were having fist fights. Those who were not physically engaged were screaming, either to show their disapproval of the ballet or to show their disapproval of those who were vocal in their disapproval. A few moments after the opening curtain, pandemonium reigned, and no one, not even the dancers on the stage could hear the music. Nijinski stood in the wings shrieking out the rhythmic pattern so that the dancers could have something to dance to.²⁶

What stirred this audience to such violence? They were repelled by the utter lack of charm and prettiness of the production. Ballet had been traditionally colorful and gorgeous, with beautiful dancers in magnificent costumes portraying characters in a fairy tale, all to the sound of charming music. There was none of this in the Rite of Spring. The dancers were dressed in dark brown burlap sacks and their gestures were rough and angular. The music was shatteringly dissonant and the rhythmic life of the score was brutal. It seemed as if the very foundations of music and all of the cultured refinements of ages were being attacked.²⁷

The date of the Rite of Spring - 1913 - is significant. It was written just before the outbreak of World War I, and perhaps the violence of the music foreshadows the destruction and carnage which was about to begin. Stravinsky, like Picasso, throughout his career has refused to go on repeating himself. With inexhaustible avidity he has tackled new problems and pressed for new solutions. His various periods are necessary stages in a continuous evolution toward greater purity of style and abstraction of thought.

²⁶Ibid, p. 46.

²⁷Hanson, p. 46.

Bela Bartok, the taciturn Hungarian composer, found the stimulus for a similarly fierce new music among the largely illiterate folk singers of the Balkans. Like the Cubists, he sought out the primitive as an escape from traditional art forms. The Magyar bagpiper and the Ruthenian washerwoman taught him in effect, that there was an inexhaustible range of tonal possibilities beyond the limited spectrum of traditional harmony. Working with their songs, he said, "freed me from the tyrannical rule of the major and minor keys. It became clear to me that the old modes, which had been forgotten in our music, had lost nothing of their vigor."²⁸

The industrial civilization of the early Twentieth Century, which had a great influence upon the Cubist painter Leger, also affected the composers of this period. George Antheil's Ballet Mechanique of 1924 set the style for a decade of exuberant experimentation. It is scored for four pianos, xylophones, percussion and airplane propeller. A Russian modernist, Alexander Mossolov, devoted a symphonic episode to the wonders of a Steel Foundry. Henry Ford's automobile production line is immortalized in Frederick Shepherd Converse's orchestral fantasy, Flivver Ten Million.²⁹

One of the first tasks of the New Music was to shake off the burden of a tradition that was no longer fruitful. The Twentieth Century had to assert its independence much as an adolescent has to rebel against his parents. The revolt was twofold. Composers not only had

²⁸ Grunefeld, p. 47.

²⁹ Ibid, p. 30.

to free themselves from the domination of their immediate predecessors, they also had to fight the romanticism within themselves. Likewise, Cubism, or the modern movement in art took shape as a violent reaction against everything that the Nineteenth Century had stood for. The pull-away from romanticism was the crucial issue throughout the first part of our century.

III. LITERATURE

The writers of the early 1900's, just as the Cubist painters, were interested in a new way of seeing man and nature as opposed to the past.

In victorian literature the characters were cliché -- dull, standardized and irrelevant to actuality, or the "now." During this new era, human and social progress became all important -- most of all the progress of the individual. The Twentieth-Century writer was trying to say "I'll tell it as I see it." The reaction of the general public to this type of literature paralleled the reaction to Cubism. It was at first negative, uneasy about accepting new standards, or the possibility of no standards. The Victorian Age had inhibited the creative artists, writers as well as painters. Individual thought during this era was not important; rules and traditions had to be accepted. During the early Twentieth Century the position of the individual in social thought was elevated.

The first two decades of the 1900's introduced a new era of creative thinking. Prominent intellectuals began asking probing questions. As a result, the creative man was stimulated to even greater creative efforts. World War I had a dynamic effect upon attitudes toward life. The sensitive person began to look upon it as a day to day existence; hence life as a temporal thing. Artists and writers wanted to be free to express themselves as individuals. The Cubist, as well as the early Twentieth-Century writer began to take a more subjective approach to

life and thought. Reality or what lay beneath it all became more important than surface appearance, social illusion, or the ideal.

Just as Picasso shifted his point of view, so did James Joyce, T. S. Eliot, Archibald MacLeish, William Faulkner, and E. E. Cummings. These men are among the writers who lay the foundation for the writing of the 1960's.

The works of James Joyce (1882-1941), aroused both high praise and loud ridicule. Joyce developed to its greatest extreme the "stream of consciousness" style of writing for which Gertrude Stein and Virginia Woolf are also noted. In such books as A Portrait of the Artist as a Young Man, Joyce attempted to show the exact thoughts that move through one man's mind, and in this manner convey a deeper impression of the individual as a complete person.

This style required the writer to use many unusual words and sentence forms, such as:

Stephen heard his father's voice break into a laugh which was almost a sob.

--He was the handsomest man in Cork at that time, by God he was! The women used to stand to look after him in the street.

He heard the sob passing loudly down his father's throat and opened his eyes with a nervous impulse. The sunlight breaking suddenly on his sight turned the sky and clouds into a fantastic world of sombre masses with lakelike spaces of dark rosy light. His very brain was sick and powerless. He could scarcely interpret the letters of the signboards of the shops. By his monstrous way of life he seemed to have put himself beyond the limits of reality. Nothing moved him or spoke to him from the real world unless he heard in it an echo of the infuriated cries within him. He could respond to no earthly or human appeal, dumb and insensible to the call of summer and gladness and companionship, wearied and dejected by his father's voice. He could scarcely recognise as his own thoughts, and repeated slowly to himself:

--I am Stephen Dedalus. I am walking beside my father whose name is Simon Dedalus. We are in Cork, in Ireland. Cork is a city. Our room is in the Victoria Hotel. Victoria and Stephen and Simon. Simon and Stephen and Victoria. Names.

The memory of his childhood suddenly grew dim. He tried to call forth some of its vivid moments but could not. He recalled only names.³⁰

This technique may be related to the faceting or simultaneity of Cubism. The complete whole is made up of many subordinate parts, all equal in importance. In this manner a deeper concept of the subject is portrayed.

H. G. Wells said of A Portrait of the Artist as a Young Man when it was first published in 1916:

It is a mosaic of jagged fragments that does altogether render with extreme completeness the growth of a rather secretive imaginative boy in Dublin. One believes in Stephen Dedalus as one believes in few characters in fiction.³¹

One of the best known postwar poets was T. S. Eliot. His experiments in diction, style and versification revitalized English poetry, and in a series of literary works he shattered old orthodoxies and erected new.

In 1922 Eliot published The Waste Land, the poem by which he first became famous. This expressed with great power the disenchantment, disillusionment and disgust of the postwar period. This poem is written in a manner similar to the approach of the Cubist artists.

Here is a poem (it has been called a boiled down epic) of collapse, of fragmentation; the vase of the old order, with all its uncertainties, its patterns, systems and placings, has fallen

³⁰James Joyce, A Portrait of the Artist as a Young Man (New York, 1916), pp. 92-93.

³¹Ibid, p. 255.

upon the marble and has broken into a thousand pieces. Nine-tenths of them are missing, yet each of the remaining pieces is exact, bright and delicately articulated as Eliot juggles all of them into a significant kaleidoscope:

Mr. Eugenides, the Smyrna merchant
Unshaven, with a pocket full of currants
C.i.f. London

--Madame Sosotris, famous clairvoyante, who

Had a bad cold, nevertheless
Is known to be the wisest woman in Europe,
With a wicked pack of cards.

--the cockney lady in the pub:

I can't help it, she said, pulling a long face,
It's them pills I took, to bring it off, she said.
(She's had five already, and nearly died of young
George.)
The chemist said it would be all right, but I've
never been the same.
You are a proper fool, I said.³²

The readers of the early 1900's lacked the equipment to understand Eliot; they were used to a well-ordered logic in verse (or at least the appearance of one), with clearly marked logical connections. This was not Eliot's way. His method was to juxtapose apparently disconnected passages and leave the reader to supply whatever logical or emotional connections might be implicit between them. This technique may be seen at its simplest in those passages of The Waste Land in which the past is set against the present -- much to the disadvantage of the latter:

The river's tent is broken: the last fingers of leaf
Clutch and sink into the wet bank. The wind
Crosses the brown land, unheard. The nymphs are departed.
Sweet Thames, run softly, till I end my song.

³²The Concise Encyclopedia of Modern World Literature, ed. Geoffrey Grigson (New York, 1963), p. 131.

The river bears no empty bottles, sandwich papers,
 Silk handkerchiefs, cardboard boxes, cigarette ends
 Or other testimony of summer nights. The nymphs are departed.
 And their friends, the loitering heirs of city directors;
 Departed, have left no addresses.
 By the waters of Leman I sat down and wept . . . ³³

In every way The Waste Land broke with the post-romantic tradition of the Nineteenth Century. Eliot's was an heroic, necessary, yet not altogether desirable step towards that "pure poetry" which poets seem always to have sought.

Modern literature has been greatly affected by the Industrial Revolution. New, fast means of transportation, an increase in education, and cheap printing costs have broken down literary barriers throughout the world. More people read than ever before. The works of each nation are read in other countries. Literary styles spread rapidly, are copied, and then die out. A style which might have lived fifty years in a former age now dies out in five years. The pace of literature has followed the pace of our society, resulting in greater willingness of authors to experiment with new forms of writing and new, abstract ideas.

The poetry of E. E. Cummings (who signed his name e. e. cummings) may be correlated with Cubism. Cummings broke all rules of traditional verse including traditional standards for capitalization, proper poetic punctuation, and normal sentence order. He wrote poems very spontaneously with unabashed frankness and no afterthought.

On the page, Cummings' poems look unlike any other poems. Quite

³³T. S. Eliot, "The Waste Land: III. The Fire Sermon," Collected Poems (New York, 1930) p. 78.

early he began to rely heavily on typographical devices: parenthesis; words divided or run together; lines broken artificially (so that, for instance, a line may begin with a colon or in the middle of a word); capital letters in the middle of words for emphasis (e.g. slEEping). Also he sometimes used words like "surely" or "exactly", in the manner of Greek particles, to emphasize the adjacent words. So, in its extremist form, a Cummings poem looks like a house of type which the poet has begun to build and which the reader must finish:

in Just-
 spring when the world is mud-
 luscious the little
 lame balloonman

whistles far and wee

and eddieandbill come
 running from marbles and
 piracies and it's
 spring

when the world is puddle-wonderful

the queer
 old balloonman whistles
 far and wee
 and bettyandisbel come dancing

from hop-scotch and jump-rope and

it's
 spring
 and
 the
 goat-footed
 balloonMan whistles
 far
 and
 wee³⁴

³⁴Paul Engle, "E. E. Cummings," Reading Modern Poetry (Illinois, 1955) pps. 113-114.

Like the Cubism of Picasso and Braque, the work of Cummings is essentially personal, a private message offered from himself to the few who can receive it. His interest was in "making" rather than in the thing made.

The literary artists of the early Twentieth Century as well as the Cubist painters were examining the central problems of illusion and reality. Is reality in the mind of the beholder, or is it whatever appears on the pages of a book, or the surface of a canvas? Man was trying to establish rules for determining his own identity. The keynote was question; discover for yourself who you are through individual investigation. For the first time the creative person could sit down and "do his own thing." The literature of the early Twentieth Century mirrors the life of the times as closely as the literature of perhaps any other period.

CHAPTER V

SUMMARY

Art in the high school should provide students with a meaningful opportunity for self-expression. During adolescence, skills become increasingly important, and the creative approach changes from an unconscious creation to one done with critical awareness. High school students are eager to give their thinking an intellectual backing. They need knowledge, guidance, and the freedom to make their own creative decisions.

The study of Cubism provides the framework for a creative experience in an area of art associated with an intellectual movement in history; not only does it have historical roots, but it is a dynamic, continuing condition today. The student may draw from the past, observe the present, and then proceed with his own individual creativity.

Art education should allow the student freedom to grow as an individual--to develop the maturity necessary to make wise decisions.

The study of Cubism provides this opportunity.

A Selected Bibliography

- Canady, John. Mainstreams of Modern Art. New York, 1965.
- Eliot, T. S., "The Waste Land: III. The Fire Sermon," Collected Poems. New York, 1930.
- Engle, Paul, "E. E. Cummings," Reading Modern Poetry. Illinois, 1955.
- Grigson, Geoffrey. The Concise Encyclopedia of Modern World Literature. New York, 1963.
- Grout, Donald Jay. A History of Western Music. New York, 1964.
- Grunefeld, Frederick. The Story of Great Music: The Early Twentieth Century. New York, 1967.
- Habasque, Guy. Cubism, trans. Stuart Gilbert. Paris, 1959.
- Hanson, Peter S. An Introduction to Twentieth Century Music. Boston, 1961.
- Joyce, James. A Portrait of the Artist as a Young Man. New York, 1916.
- Lowenfeld, Viktor. Creative and Mental Growth. 3rd ed., New York, 1957.
- Muller, Joseph-Emile. Modern Painting IV: Cubists to Early Abstract Painters. New York, 1965.
- Murray, Peter and Linda. A Dictionary of Art and Artists. 3rd ed., Great Britain, 1963.
- Prideaux, Tom. "Cubism," Life, Dec. 27, 1968.
- Strauss, Ernest G. "Albert Einstein," The Encyclopedia Americana, X, New York, 1969.

Other Sources Consulted

- Ottman, Jack. Social Science Department, Reynolds High School.
- Ramer, Richard. English Department, Reynolds High School.
- Schmale, Fred. Music Department, Reynolds High School.

APPENDIX A

RESULT OF THESIS

As a result of interest in this thesis, a team teaching unit in the humanities is being organized for next year (1970-71) at Reynolds High School.

APPENDIX B

CUBIST COMPOSITIONS BY THE AUTHOR

(1969-70)

