





**REPERCUSSIONS IN BRAIN  
HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT,  
THROUGH THE USE OF  
INFORMATION  
TECHNOLOGY AND  
PAINTINGS IN THEIR  
STEPS FRACTALS**



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## PREFACE

The art organizes everything by parts. The authors of this work are implacable authors of some dawns, evenings and nightfalls that bring a fresh change to the Homo Sapiens at any place of the planet. Their valleys, volcanoes, atmospheres, are not only theirs, they are of all of us. They are of the whole world. They will be of the future world. The future generations will enjoy their discoveries, of what today they copy from the nature that surrounds us. The landscape, suddenly becomes difficult to rescue but with the knowledge and dexterity characteristic of the authors of this beautiful book, one proves that, in all the five continents, new aesthetics and semiology transformations, are generated.

Repercussions in brain hemispheres integration with image and text, through the use of information technology and paintings in their steps fractals. of the landscape painting, demands an imagination effort. The authors go developing dimensions with colors and give organic forms arranged to them while they paint. They recognize that the essence of life, increases, it transform and changes in the synergetic objects that they paint in the solid, liquid and gaseous states. They allow in their representations that those parts are logically adequate, so that there is harmony in their painting. The parts that they organize, require a structural setting that is adapted to the variations of functional requests and allows to give extension and relation to the organic structures that the authors paint in the pattern, continuity that they search and study in the nature.

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## DEDICATION

To family.

To my brothers, my sister, friends, grand- fathers (Roberto Arturo Vasquez Pereira, Victor Ceron Martinez Madrigal), grandmothers (Laura Escobar Henao, Francisca Rosa Vasquez Perez), great-great-grand-fathers, great-great-grandmothers, relatives, family, humanity, cosmos. To Dr. Fabio Vasquez Escobar To the Most Excellent Bishop Gerardo Martinez Madrigal. To the Most Excellent Bishop Guillermo Escobar Velez. To the Excellent Ambassador Raul Vasquez Velez. To the Excellent Ambassador Lucelly Garcia Tobon.

To Marco Tulio Duque's School, Conrado Gonzalez Institute, IDEM Fray Julio Tobon Betancu, Colombian Polytechnic, National University, Autonomous Latin-American University, SEP, University of Antioch, Bolivian Pontifical University, UNAM, UAG, UNISARC, Sao Paulo University, Free University, Salvador Duque School, University EAFIT, University of Sydney, University of Helsinki, University of Tampere, University of Cape Town, TEC; University of Guadalajara, UCLA, MIT, University of Houston, Harvard University, Yale University, Oxford University, Linguaphone Institute, Cambridge University, Scranton University, UNESCO, DOMETAL, RIOTEX, COLTEPUNTO, Company of Packings S.A., Technological Institute. Pascual Bravo., Modern Institute of Education, ASSTI, ESAP, Colombian Polytechnic Jaime Isaza Cadavid, Montessori School, SENA, University de San Buenaventura, International Center of Cambridge, The St. Lukas Academy, Bamberg University, Pekin Normal University, Who's Who in the World, American Biographical Institute, The Marquis Publications, Editorial Papiro, Colombian Polymers, VIAMACOL, Rotary International, Biographical

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Institute of United States of America, Superior Academy of Technical Industrial Services, National Service of Learning, Reforestation Company La Floresta, Casa de Reyes, Engineering School of Antioch, The Southern African Comparative and History of Education Society, University of Paris, Hospital El Carmen de Viboral, Beijing Normal University, Tokyo University, Waseda University. University of Guadalajara.

To the schools, institutions and universities of the five continents that offered me the opportunity to recreate, relearn, reinvent, rethink and study.

And to the whole last, present and future humanity that consecrates the cultivation of the right values, the positive visions, and life, is a great company, the post modernity, the fractality, the harmony of the societies and universal cosmos.

## GRATEFULNESS AND RECOGNITIONS

To the whole last and present humanity  
and their universal cosmos.

Recognition also to the M. C. Tonatiuh Bravo Padilla, Rector General, U. de G.; Dr. Marco Antonio Cortés Guardado, Rector CUC, U. de G.; to Dr. Remberto Castro Castañeda, U. de G.; to Dr. Jorge Tellez Lopez, U. de G.; to Bachelor Raul Padilla Lopez, U. de G.; Dr. Raul E. Tamayo Gaviria, Professor Vagn Lundsgaard Hansen, Professor Ching-Lin Hu, Professor Byung-Jin Lee, Professor Erwin H. Epstein, Professor Shin'ichi Suzuki, Dr. David Turner, Dr. Medardo Tapia U., MRS. Guadalupe Gonzalez de Turner, M.C. Jesus Cabral, U. de G.; M.C. Maria Morfin, U. de G.; Bachelor Maria Antonia Abundis, U. de G.; Bachelor Arturo Fernandez, U. de G.; Bachelor Javier Fernandez, U. de G.; M.C. Patricia Medina, U. de G.; Dr. Alfredo Cesar Dachary, U. de G.; Dr. Stella Arnaiz, U. de G.; to MRS. Barbara Bush, to Dr. Fabio Vasquez E., to Dr. Humberto Martinez V., to Dr. Guillermo Esquivias L., for their observations and comments.



## INTRODUCTORY COMMENT

The graduate profile of an Engineer in computer systems

An engineer in computer systems is able to:

- Develop software using an engineering approach to high quality standards, efficiently communicating their proposals and results in oral and written in both English and Spanish.

- Develop applications and methodologies using a set of techniques to solve problems in science, industry, entertainment and education with multidisciplinary view of society and its cultural requirements.

The engineering of computer systems plays an important role in society, because through it engineers can provide various optimization processes, automation in general any kind of task of society because the engineering is multidisciplinary.

### General theory of systems

Von Bertalanffy defines the general theory of systems "there are models, principles and laws that apply to generalized systems or to their subclasses, regardless of their particular condition, the nature of their component elements and the balance of power between them.

### 1.-INTRODUCTION

With the use of information technology, a didactic methodology has been developed and it involves the use of both brain hemispheres, using easy access software for most of the people, this software is Power Point, using the tool curve line. Some basic concepts are shown in order to understand how this teaching methodology works.

The origin of all our thoughts, feelings and actions are protected by a cranium, wrapped in several membranes and swimming in a liquid shock absorber, we refer to the brain, which size does not exceed a small melon and it has an aspect of pink-gray mass, with many folds and an average weight of 1360 grams (Anderson, 1996).

With such limited space, the brain has nearly one hundred billion microscopic neurons forming the main unit of work of itself. Neurons, grouped in millions of

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circuits and each one meets an inherited or empirical function (Hutsler, 2003). The interconnection of neurons is responsible of controlling almost all vital function of the human body such as sleep, movements, hunger, thirst and specially mind (thoughts, language, intelligence, memory, etc) and of emotions and feelings like love, hate, fear, anger, joy, sadness, etc. All this, through the reception and interpretation by numerous signals or sensations perceived by each of the senses, or by stimuli from the organism itself and abroad (Purves, 2012) (Anderson,1996), (Ardila,1984), (Bear, 2014), (Beeman,1998), (Burns, 1985), (Dimond, 1974), (Carter, 2004), (Chiarello, 1998), (Code, 1987), (Crossman, 2010), (Cutting, 1990), ( Dehaene, 1999), (Dehaene, 2003), (Hellige, 1983), (Hutsler, 2003), (Joanette, 1990), (Kinsbourne, 1988), (Levy, 1978), (Levy, 1983), (McGilchrist, 2010), (Myers, 1999), (Murdoch, 2010), (Purves, 2013), (Perecman, 1983), (Taylor, 1990), (Tompkins, 1995), (Wray, 1992), (Weinstein, 1977), (Western, 2006), (Young, 1983).

As we know, the brain is not just an organ exclusively for humans, and even the most primitive animals have an organ that performs similar functions like the brain. However, only in human being, the brain is developed enough to communicate with the language of our knowledge and pass our ideas, beliefs and experiences from generation to generation (Purves, 2012).

Since the last century there have been important discoveries to determine the controlling cells of everyday human activities are conducted. One of these discoveries is that brain is divided into two hemispheres, and each one has the function of controlling the activities of half of the body, also in most of the people, one of the hemispheres is the most predominant than the other (Purves, 2012).

### **How are hemispheres formed?**

During the last century and a half, scientists have known that the function of the language and the skills related with the language are located- in most of the people- in the left hemisphere. This could be tested by studying the effects of brain injury. An injury to the left side of the brain could result in loss of the use of the language, and more probably with an injury in the right side (Purves, 2012). The human brain has two hemispheres, connected by the corpus callosum, related with diverse areas of activities and both work very differently, but



complementary. Arguably each hemisphere, perceive their own reality; or perhaps we should say that perceives reality in their own way. Both modes use high-level cognition (Bear, 2014).

Our brains are double, and each half has its own way of knowledge, its own way to perceive external reality, we might even venture to say that they have their own personality, being both complementary halves of each other (Purves, 2012).

Each brain hemisphere has a way of processing the information it receives. According Levy (1983), Purves (2012), Bear (2014), tell us an overview of the operation for the hemispheres brain, left hemisphere analyses in the time, while the right hemisphere synthesizes in space.

As for the visual field, each eye sends the information to both hemispheres. The left half of visual space is seen by the right hemisphere, while the right half is perceived by the left hemisphere (Purves, 2012).

Each hemisphere specializes in a different way to process the information, which supplements the other hemisphere (Purves, 2012).

None is superior to other, and the addition of both is what gives to the mind its amazing flexibility, and it is what generates the effective thought (Purves, 2012).

### **How to discover the predominant hemisphere?**

If we know which side is the most predominant we can get the best from our virtues. If the person knows their skills it will be easy for them to perform the task and explore to the fullest. There are methods that are used to determine the predominant hemisphere, such as questionnaires, pictures, exercises with words.

### **Features of each hemisphere**

The left hemisphere is in charge of digital, lineal, logical and direct language. It is the hemisphere responsible for the analysis, mathematics and logical reasoning. This hemisphere search an explanation, it has memory and process the conscious part of the language (Purves, 2012).

This hemisphere uses a style of convergent thinking, gaining new information by using data already available, making new ideas or data conventionally

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acceptable.

The left hemisphere learn everything and get quickly details, facts and rules. It also analyzes the information step to step. It wants to understand the component one by one (Purves, 2012).

**The right hemisphere** is more dedicated to images, non verbal language, paraverbal language, analog, it is the creative, dreamer, intuitive, sensitive, poet, symbolic, the right hemisphere processes the part of the language meaning (Purves, 2012).

This hemisphere employs a divergent thinking style, creating a variety and quantity of new ideas beyond the conventional pattern (Purves, 2012).

It learns from whole to part. In order to understand the parts it needs to start from the global image. It does not analyze the information, it just synthesizes it. It is relational, it does not concern about the parts, but knowing how they fit and relate with themselves.

Both hemispheres capture and process information differently, but they complement and allow us to have a broader vision to our environment and our ability to comprehend. Table 1 shows the comparison between the hemispheres (Purves, 2012).

Table 1 comparison between both hemispheres

<b>Left hemisphere</b>	<b>Right hemisphere</b>
<b>Verbal:</b> uses words to name, describe, define.	<b>Nonverbal:</b> it is conscious, but it is hard to relate with words.
<b>Analytic:</b> Study step to step and part to part	<b>Synthetic:</b> group in order to make teams.
<b>Symbolic:</b> uses a symbol in order to represent something.	<b>Concrete:</b> capture the moments as they are, at the present moment.
<b>Abstract:</b> take a small fragment of the information and applies it in order to represent everything.	<b>Analogical:</b> it sees similarities between things, understand the metaphorical relationship.
<b>Temporal:</b> it follows the time, order things in sequences: starting from the origin relates the past with the future.	<b>Timeless:</b> no sense of time, centered in the present moment.
<b>Rational:</b> conclusions based in the reason and data.	<b>Unreasonable:</b> it does not need a reason, it does not base on the facts, tends to postpone the judgment.
<b>Digital:</b> uses numbers, counting is an example.	<b>Spatial:</b> it sees where things are, and how they combine in order to form a whole.
<b>Logic:</b> conclusions are based in logic: one event is followed by another. A mathematic theorem or an reasoned argument are examples.	<b>Intuitive:</b> it has sudden inspirations sometimes based on incomplete patterns, clues, hunches or visual images.
<b>Lineal:</b> think in terms of chained ideas, a thought followed by another, at the end there is a convergent conclusion.	<b>Holistic:</b> it sees the complete things at once, it perceive general structures and patterns, often coming to different conclusions.

Brain hemispheres have features that mark the difference between them, chart 2 shows main characteristics of each one.

Chart 2 main characteristic for both hemispheres.

<b>Left hemisphere</b>	<b>Right hemisphere</b>
Logical, analytic and explicative, detailed.	Holistic and intuitive and descriptive, global
Abstract, theory	Concrete, operative
Sequential	Global, multiple, creative
Lineal, rational	random
Realist, formal	Fantastic, ludic
Verbal	Non verbal
Temporal. differential	timeless. existential
Literal	Symbolic
Quantitative	Qualitative
Logical	Analogical, metaphoric
Objective	Subjective
Intellectual	Sentimental
Deductive	Imagine
Explicit	Implicit, tacit
Convergent, continuous	Divergent, discontinuous
Vertical thinking	Horizontal thinking
Successive	Simultaneous
Intellectual	Intuition
Sequential	Multiple

There are very clever people in business, mathematics, calculation, they have a prodigious memory and may have a good job. These people are using most of the time the left hemisphere (Purves, 2012).

Furthermore, an artist paints wonderful pictures, he is able to captivate us with wonderful colors and shades. Surely he is an intuitive person and sensible with a great sense of aesthetics. He may work by his own, earning a little or a lot, it is not a big deal for him. This person is using more the right hemisphere (Purves,

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2012).

In western schools, develop more the left hemisphere. Almost all teaching comes in and it is analyzed by the left hemisphere. Fortunately schools are gradually including activities where the right hemisphere is used. Those activities are drawing, singing, crafts, creative activities, drama, dancing, etc.

In the east is more emphasize the use of the right hemisphere without denying the value and existence of the right hemisphere. East gives a greater importance to the understanding of the essence of beings in a more abstract and spiritual scientific terms (Purves, 2012).

### **Integrating both hemispheres**

The best is to balance the two hemispheres. It is possible to use them to gain a better understating of what is around us. A Picasso painting can be seen with the left hemisphere as deformed faces, or non sense scratches. Using the right hemisphere this painting can admire colors, creativity and strength the picture has. The meaning of a poem is decoded by the right hemisphere, never is decoded by the left hemisphere. Remembering about the poem is a work for the left, they complement themselves. Ballet is another example where the two hemispheres are complemented; one part is for discipline and the other part may have creativity, inspiration and aesthetic (Purves, 2012).

The larger displacement between both hemispheres the better capacity for understanding the world we will have. It will also lead to flexibility in dealing to different situation if we can visualize something more than a black or white; there are many intermediate shades (Purves, 2012).

### **People that integrate both hemispheres**

Integrating these two polarities is the factor that will contribute to achievement and sublime creations. By using the capabilities of the left and right hemisphere there is a conjunction and holistic harmony. In order to be meaningful any kind of learning, action and functions should be included in both parts of the brain. Each one covers and filter the reality in a unique way and when both realities are joined the result is a wider perception and a complete reality (Purves, 2012).

### **Albert Einstein ´s brain hemispheres**

Studies conducted at the end of 2012 it were discovered that the left and right hemisphere were unusually well connected to each other, it may have be contributed to his brilliance (Bear, 2014).

During this research, published in the magazine Brain, a new technique was used; it allowed analyzing in detail the corpus callosum of the scientist brain, it shoes the wider region consisted of the nerves fibers in human being and this region facilitate the connection between both hemispheres (Bear, 2014).

The findings of the research of the genius' brain show that Einstein had wider connections between parts of the brain hemispheres, compared with two control groups of old and young people (Bear, 2014).

### **Hypothesis**

Implementation of activities involving the use of both hemispheres (logical reasoning, and symbolic reasoning) will result that the student could assimilate knowledge in an unnoticed and permanent way.

When performing activities that involve the use of both hemispheres, the posterior knowledge is accepted involuntary.

### **Teaching method**

The student investigates the concept

The student draw the concept from scratch and manually

Both activities involve the use of the left and right hemispheres.

In these activities the student without realizing is integrating both brain hemispheres; as a consequence the following information will be automatically picked up by the student.

It is noteworthy that the teacher must transmit the information and generate the knowledge through educational methodologies.

### **Benefits of integrating both hemispheres**

It has been brought up in a culture of focusing on the intellectual and memory of everything. This education is based only on the left hemisphere, in which prevail the verbal, logical and analytical functions.

This has been a major oversight in the right hemisphere, which is the emotional hemisphere, where imagination, creativity, talent, and motor are founded. The management of right hemisphere is not only important for its functions, but

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because it is the brain hemisphere where security, balance and conscious is founded. The integration of both hemispheres brings benefits in all aspects of our lives, such as in the learning environment, in the workplace and in the social and family sector.

### **In education field**

Methodologies that promote the integration of hemispheres are used; causing that learning is better and easy to understand for the student, leading to an endless benefits student-teacher.

If teaching is good by teachers and use didactic methodologies, then students who are not well will develop their intellect and they will be better students every day.

Using the proposed methodology, the teacher only will implement the method without explaining the operation of itself to the student.

The student will not be aware of the implementation of the method because it can cause a predisposition to not to use it. Our abilities and talents will be develop and our bad habits decrease including the stress, increasing creativity, managing our emotions, having positive thoughts , getting these characteristics by using both hemispheres and also all benefits they provide.

### **In the workplace:**

Issues related to the workplace and brain hemispheres are:

- Intelligence quotient vs. emotional intelligence
- Creativity process. Vertical thinking( analysis and reasoning) vs. lateral thinking (problem solving imaginatively)
- The analysis and intuition in decision making.
- Direction vs. leadership.

By being creative, the subject will generate new methods, new ideas and innovations in the company.

### **In the social sector**

Analysis of the actions and vocabulary in an social environment.

### **In the familiar sector**

By using both hemispheres, benefits are unbeatable; intuition and rationality are used in order to be a better family member.

Using information technology to implement the teaching method

### **The information technology (IT):**

It is the use of technology through computers for managing and processing information specifically the capture, transformation, storage, protection and recovery of data and information.

The origins of the IT are recent. Although the name of information technology dates back to the 70s, however in the last 20 years, there has been reached level of use and application so varied and ubiquitous.

### **Using Power Point software in the methodology proposed**

Power Point is a software that allows to create materials that can be used in a projector. The use of this material to present a report or a proposal is called presentation. Using Power Point, the user can create screens that effectively incorporate text and photos, illustrations, drawings, tables, graphics and movies, and it also allows moving from one slide to another as in a slide show.

Power Point is primarily used to create screen presentation and project them onto a screen trough a projector. However, it is also used widely to provide text and pictures and it can also be sent or printed. Power Point can arrange text and drawing with freedom.

Often this software is underutilized, ignoring many of its functions, using it only to create basic presentation, ignoring that projects can be done with it. Projects such as creative images from the intuition and sensibility of every student and the most important that in these creations can be processed together with the rational part of our brain, i.e. in conjunction with the left hemisphere.

Thus by using a basic office tool that is often available but the user does not get the maximum benefit and it is also easy to use for people of any area of knowledge, the benefits of this didactic methodology can be obtained, creating a balance between both brain hemispheres performing activities of themselves.



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Sometimes images are obtained from some places particularly from internet sites. However, the use of this practice not recommended, affects that knowledge is obtained momentarily, without learning the information as it should be forge. At the moment of implementing the proposed methodology by using Power Point software, knowledge becomes as understanding and permanent reasoning, practically learning knowledge forever.

### **Tool used**

The tool has been used for the implementation of this methodology is located in the toolset illustration, within insert tab, the tool is called curve.

Its use is very simple, in order to draw a curve do the following steps:

1. Click where the curve should begin, then drag the cursor to draw the object, after that click where a curve needs to be added.
2. Finishing the curve
  - To leave it open, simply double click anytime.
  - To close the shape, click near the point where the shape began.

### **Conclusion**

We are wasting over 200 million nerve fibers that connect our hemispheres and can instantly perform simultaneous functions we want it, if we do not change our educational system and our cultural ways people will end up with "split brain".

It is important to develop methodologies that encourage various features found in our brain hemispheres.

A creative person is the one who can process information in different ways, sensorial data we receive.

The fact of having a dominant hemisphere primarily the right or left involves a change in the learning style.

An aware teacher about this topic will develop activities to stimulate the two hemispheres in order to keep the attention of his or her student and never miss motivation.

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Note: To page 33 to 73, the reader is left between the mentioned interpretation and paints for the reader to generate their own ideas and creative about. This is an exercise in creative writing and painting to generate new ideas.



**OBSERVATION:**

Rhochrematic process in electromagnetism pedagogy.

Discreet Variable

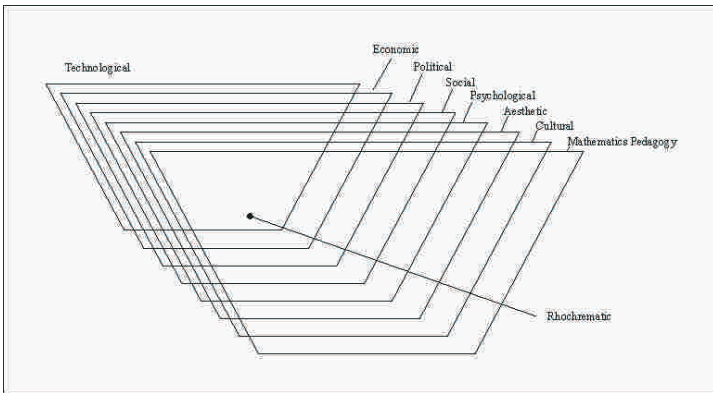
$$\sum_{b1}^{a1} x1 + \sum_{b2}^{a2} x2 + \dots + \sum_{bn}^{an} xn + \dots + \sum_{bk}^{ak} xk$$

Continuous Variable

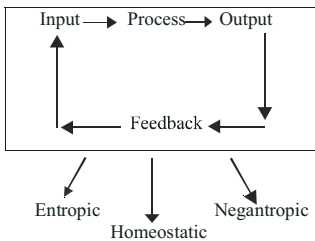
$$\int_{b1}^{a1} x1 + \int_{b2}^{a2} x2 + \dots + \int_{bn}^{an} xn + \dots + \int_{bk}^{ak} xk$$

Integrating the Rhochrematic process in electromagnetism pedagogy.

Integration System



Rhochrematic → The Process of Reprocess  
 Process System



$n_1 \dots n_2 \dots n_n \dots n_k$  with Discreet Variable and  
 Continous Variable in the System

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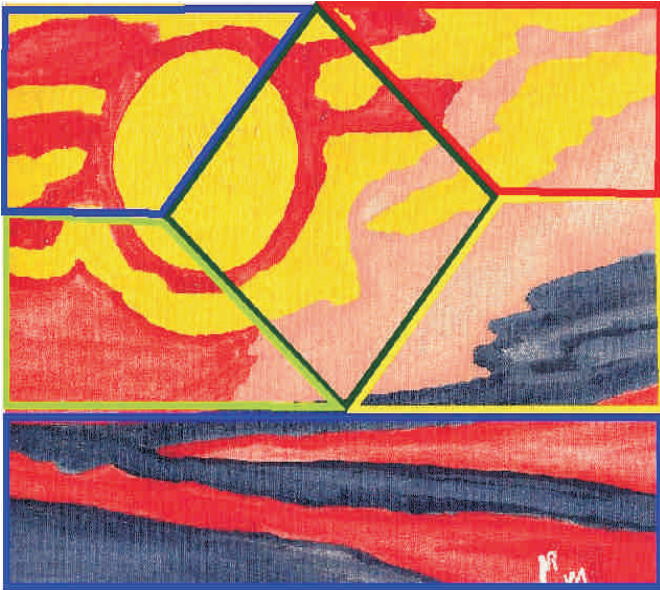
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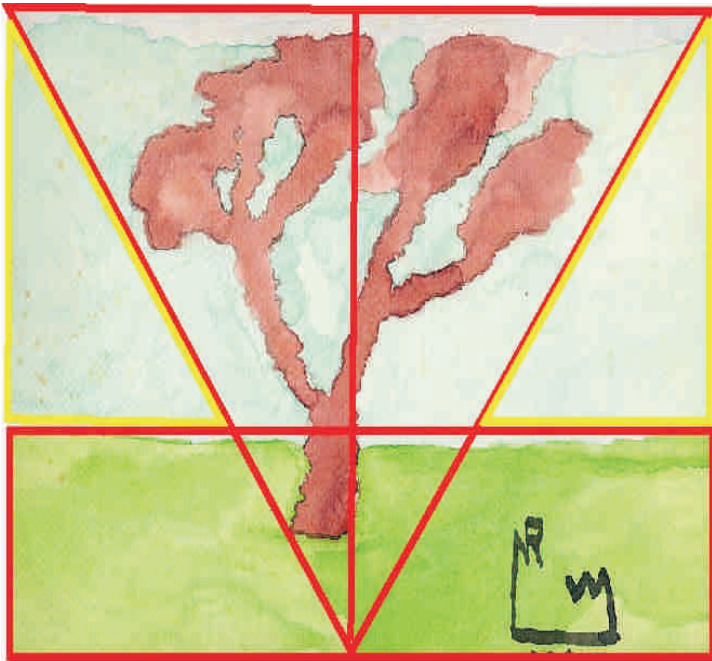
**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF  
INFORMATION TECHNOLOGY AND PAINTINGS IN THEIR  
STEPS FRACTALS.**



**Phase 1**



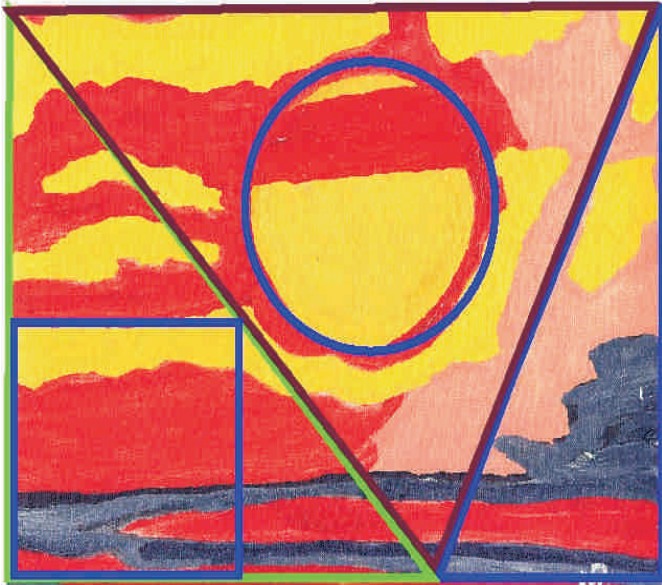
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TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 2**



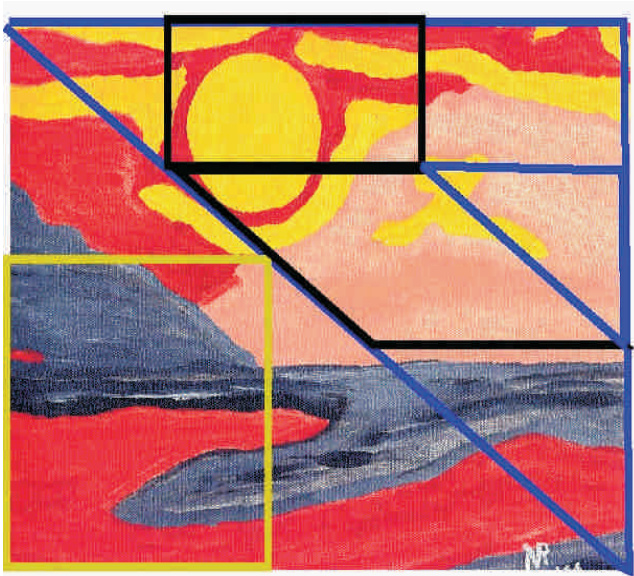
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**Phase 3**



**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
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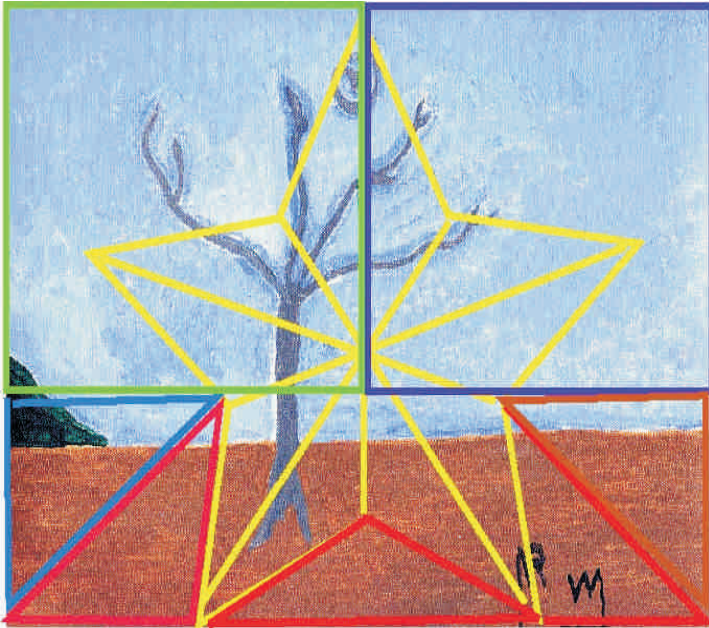


**Phase 4**





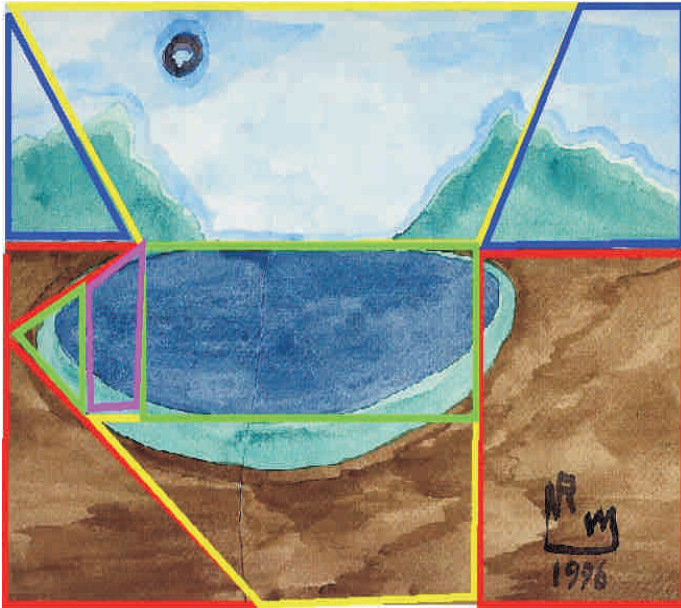
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**Phase 5**



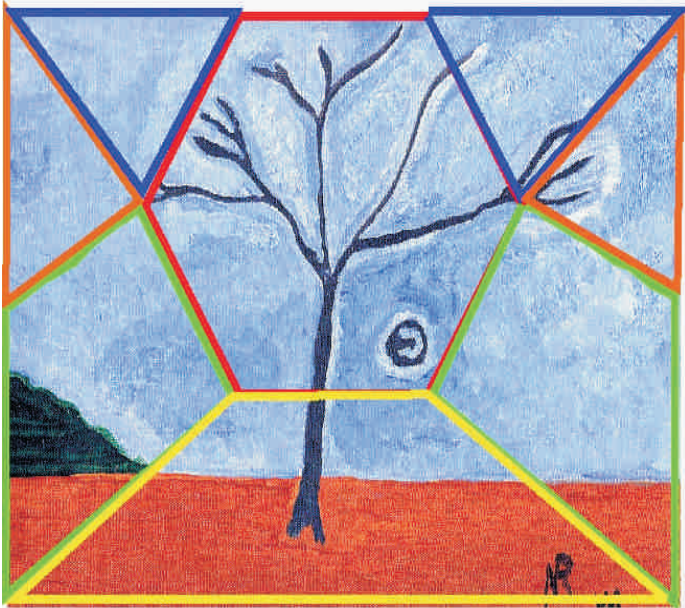
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**Phase 6**



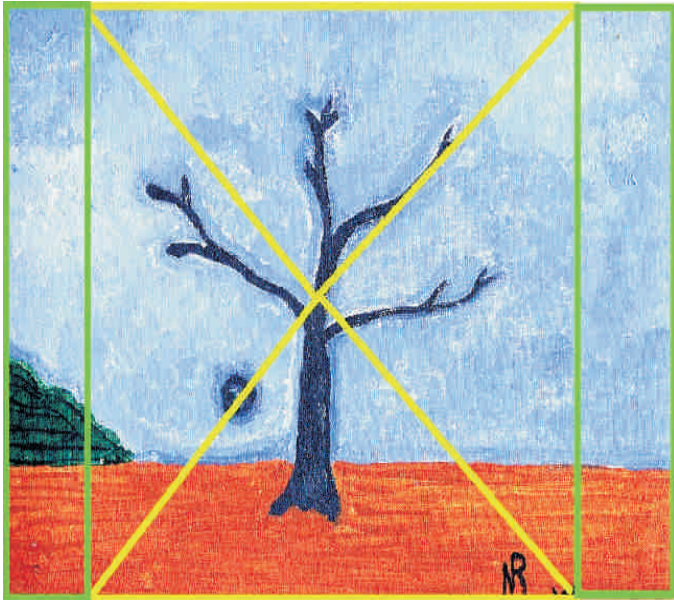
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TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 7**



**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**

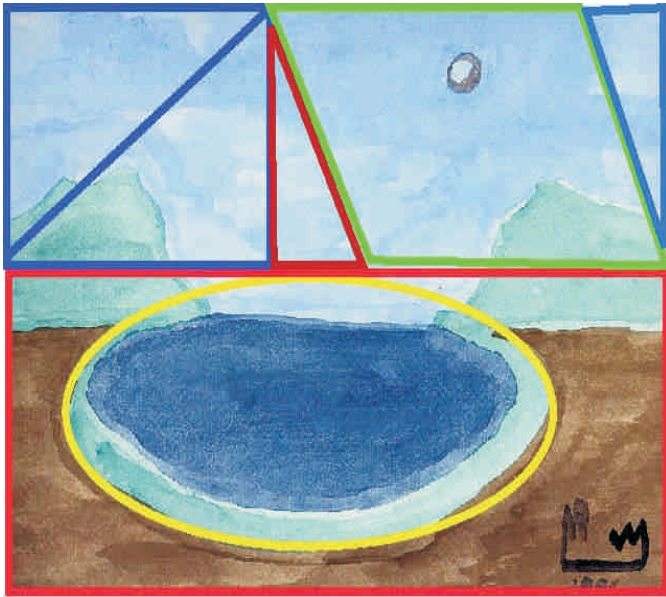


**Phase 8**





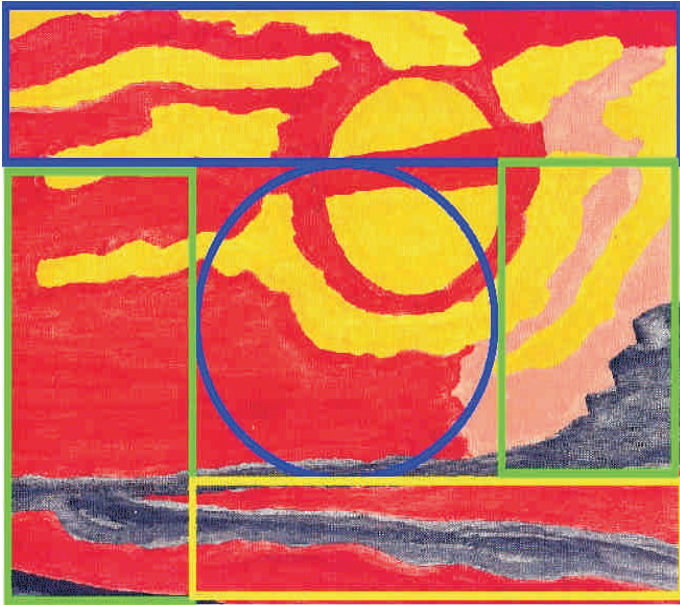
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TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 9**



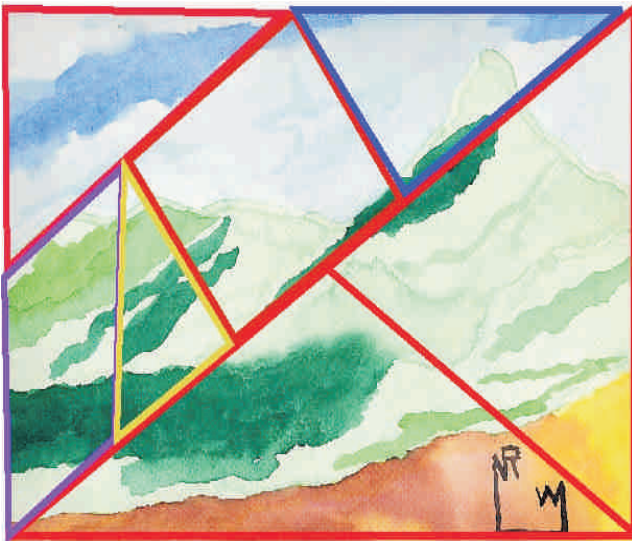
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WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 10**



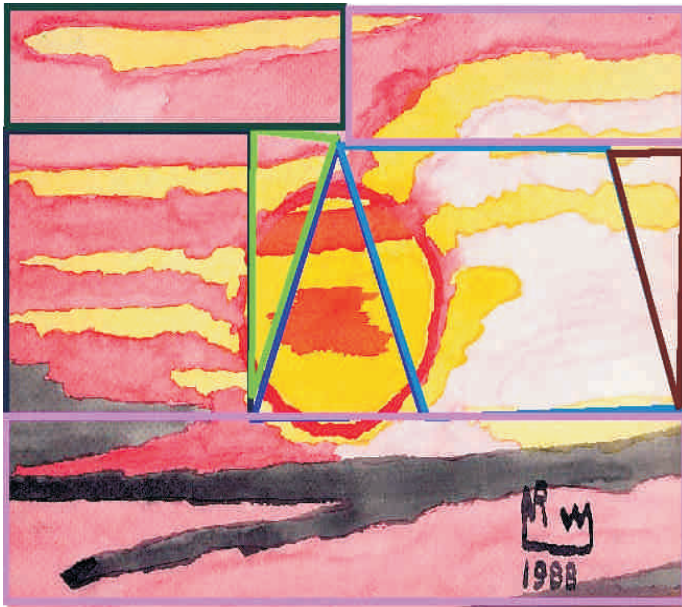
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**Phase 11**



**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**

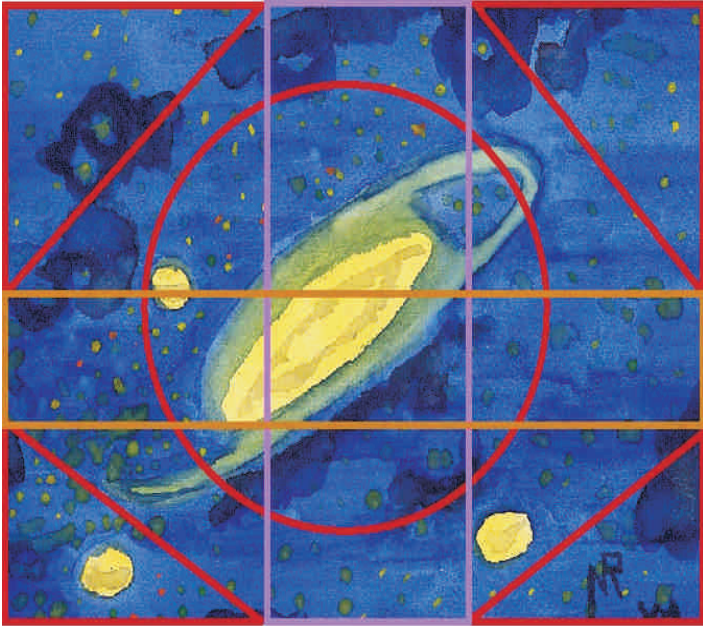


**Phase 12**





**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
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TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 13**



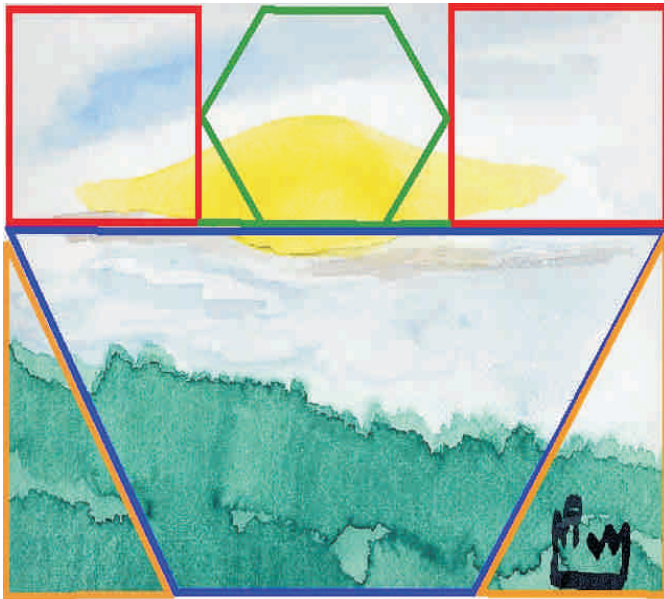
**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
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**Phase 14**



**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 15**



**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
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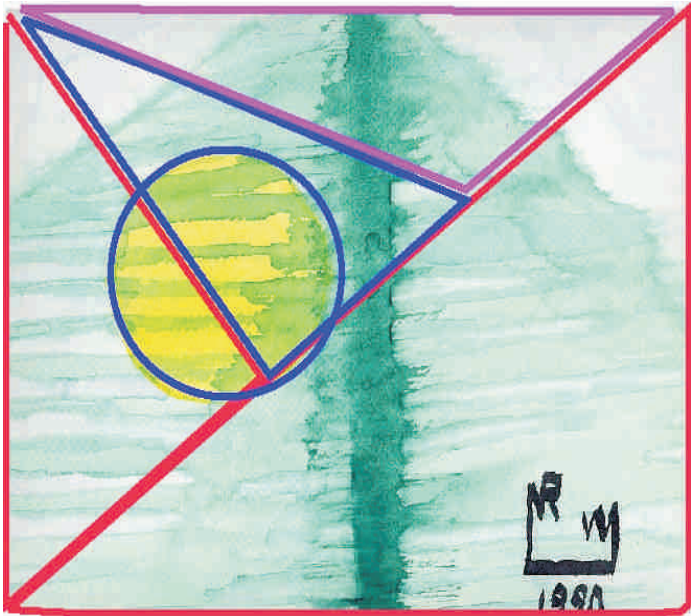


**Phase 16**





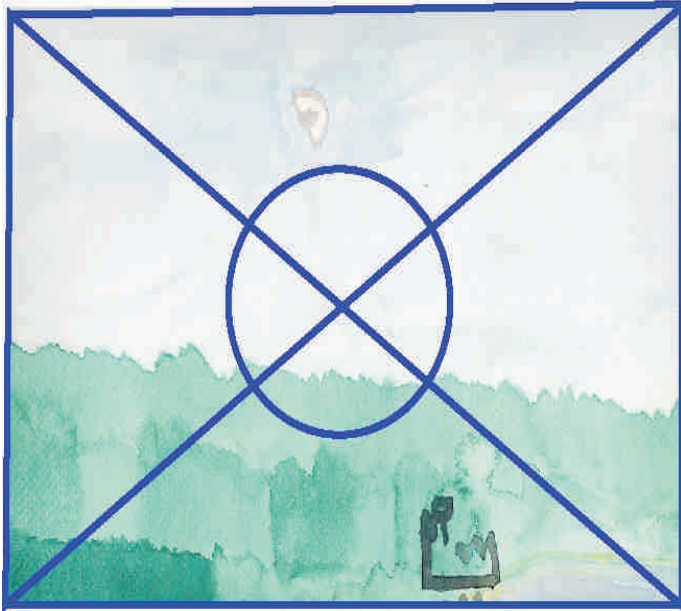
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**Phase 17**



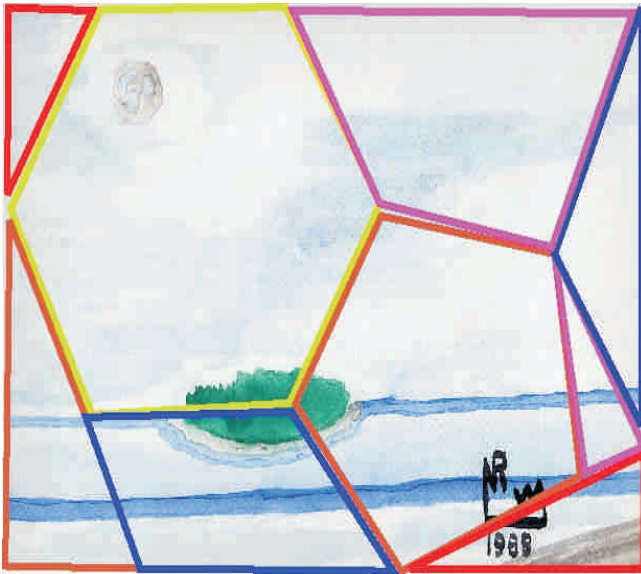
**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 18**



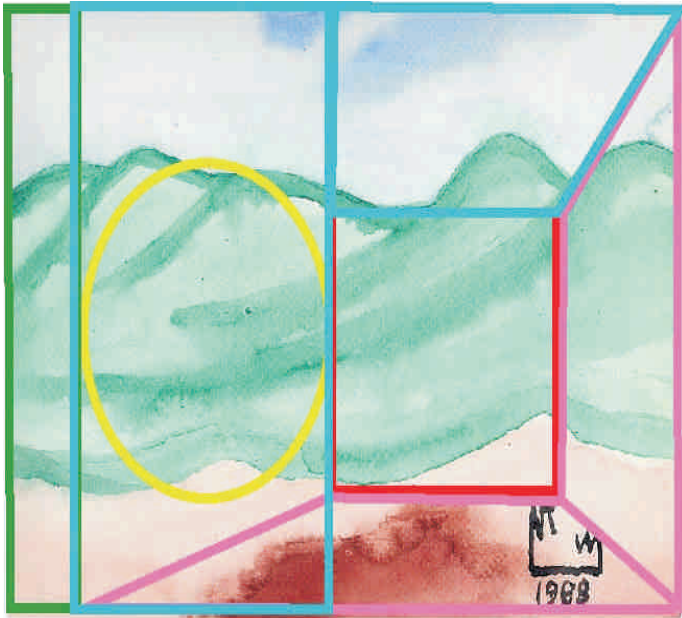
**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
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TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 19**



**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**

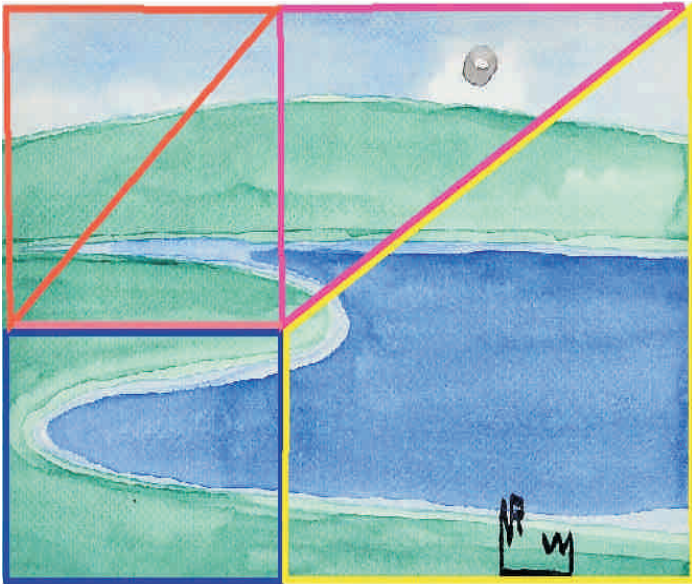


**Phase 20**





**REPERCUSSIONS IN BRAIN HEMISPHERES INTEGRATION  
WITH IMAGE AND TEXT, THROUGH THE USE OF INFORMATION  
TECHNOLOGY AND PAINTINGS IN THEIR STEPS FRACTALS.**



**Phase 21**



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