Rochester Institute of Technology

CROSS-DISCIPLINARY USE OF METAPHOR

A thesis submitted in candidacy for the
degree of Master of Fine Arts

Department of Graphic Design

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To Karen Alene

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Introduction

■ The Initial Intent

'The cultural **bifurcation** of art and science in our society, and the prevalence of advance trade schools where limited experts are ground out of the curriculum, tend to make it difficult for technical graduates to understand or use the esthetic qualitative mechanisms. However, as we have observed in the case of the other mechanisms, their use can be learned, not abstractly, but through practice. They are used apprehensively at first, but when the student sees them work, producing rich viewpoints which lead to a basic solution, even the apprehensive individual is willing to use such mechanisms to an increasing degree.' (Gordon, p.45)

The initial thesis proposal was grand in scope. I wanted to create a methodology, a process that could assist R.I.T students in approaching problems with a metaphorical mindset. The metaphorical mind would be a mind that could approach a creative problem making rich associations and connections. Hypothetically, the person who is aware of these metaphorical connections should be capable of generating imagery that is rich with meaning, or **semantic** content. In the original Thesis Proposal, the mission statement:

'This thesis will assist designers in improving the quality of graphic communications by providing an interactive interface to aid in recognizing, clarifying and implementing metaphors in the design process.,'

reflected some of the hopes and aspirations I had for this project. By exploring areas that use, apply or study metaphor, such as philosophy or psychology, I hoped to learn how the knowledge of metaphor acquired in these fields could be integrated and/or compared with design disciplines to facilitate the fruition of my mission statement.

Later, research, and a growing realization of the scope of the task I had assigned myself, affected a slight change in the direction of the thesis application. The goal of the thesis metamorphisized into developing an application that would reveal the diverse forms and uses of metaphor in disparate fields of study. The original proposal was to develop a methodology for using metaphor to generate design solutions. In the modified proposal, I commited myself to increasing students awareness of metaphor and to perform further study into the use of metaphor in several areas: psychology, philosophy, graphic design and **synectics.**

Bifurcate:
To divide into two branches or stems; fork.

Semantics:
Semantics is part of sign theory know as semiotics. A sign is anything that conveys meaning, communicates or persuades. For a sign to communicate, it is necessary for the people using the sign to be familiar with the signs meanings. When discussing semiotics, three terms are used: **Syntactics**, which is the visual grammar being used as the vehicle for communication; **Semantics**, which is the understood meaning being communicated and **Pragmatics**, which involves the practical considerations of how the sign is being used.

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By educating students about different types of metaphor, I hoped to stimulate the use of metaphorical thinking to help them seek creative solutions.

The feasibility of actually transforming the thought processes of students to a metaphoric mode was considered. It was determined that any change would likely be only a subtle shift, rather than a transformation. Therefore, it was decided that it would be important to encourage students to begin trying to make metaphoric connections when they observe the world, so as to begin building upon their understanding of metaphor.

Students are continuously exposed to rapid, ever-changing media images; the latest 'hip' clothes to wear, which shoes to buy and which restaurant to patronize are typical examples of quick media messages. Design students could benefit by realizing and understanding the metaphoric connections that become apparent in such advertising, as well as in everyday life. Every day, 'we live by interpreting signs, by discovering parts of what some of them mean; how many types of their meaningful connections do we find? The questions matter, because our intelligence depends on such discoveries.'(Scott,p.260) So, in the final analysis, there are actually several objectives to this thesis:

1) To assist students in beginning to understand and recognize *metaphor*
2) To demonstrate how metaphors are used, and ways of analyzing their use.
3) To educate students about the multi-disciplinary theories and applications of metaphor

■ Analysis of Problem

There are certain assumptions that were made at the onset of this project. Graphic design currently makes use of certain brainstorming techniques. For example, mind-mapping, making lists, flow-charting and metaphoric comparisons, are commonly used. Likewise, metaphor is also used in literature, philosophy and psychology as a means of comparison, expression and creativity. A methodology known as synectics uses metaphor, both as a tool for understanding the theory of creativity, and in the application of problem-seeking and problem-solving.

Dictionary Definition of Metaphor:
met·a·phor · *n. A figure of speech in which one object is likened to another by speaking of it as if it were that other, as He was a lion in battle: distinguished from simile by not employing any word of comparison, such as 'like' or 'as.' - Syn. see SIMILE.*
mixed metaphor *- A figurative expression in which two or more incongruous metaphors are used, as He kept a tight rein on his boiling passions.*

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Poetic Truth:

"Plato in the Phaedrus had insisted that every artistic composition, whether in prose or verse, should have an organic unity. "You will allow that every discourse ought to be constructed like a living organism, having its own body and head and feet; it must have middle and extremities, drawn in a manner agreeable to one another and to the whole."

This "idea may be said to be at the basis of Aristotle's whole poetic criticism. A work then of poetic art, as he (Aristotle) conceives it, while it manifests the universal is yet a concrete and individual reality, a coherent whole, animated by a living principle or by something which is at least the counterpart of life-and framed according to the laws of organic beauty. The artistic product is not indeed in a literal sense alive; for life or soul is in Aristotle the result of the proper form being impressed upon the proper matter.

Now, in art the matter depends on the choice of the artist; it has no necessary relation to the form which is impressed on it. That form it passively receives, but it is not thereby endowed with any active principle of life or movement. The form or essence lives truly only in the mind of the artist who conceived the work, and it is in thought alone that it is transferred to the dead matter with which it has no natural affinity. The artist, or the spectator who has entered into the artist's thought, by a mental act lends life to the artistic creation; he speaks, he thinks of it as a thing of life; but it has no inherent principle of movement; it is in truth not alive but merely the semblance of a living reality." (Butcher, pp.189-190)

Synergic-Comparative Metaphoric Mode:

This is a Psychology definition for when two or more objects, processes or conditions are compared in such a way that the elements combine to become more than either was before.

Symbolic Metaphoric Mode:

This is a Psychology definition which states that this mode exists whenever a symbol, whether abstract or visual is substituted for some object, process or condition. it has 2 sub-categories; Abstract symbols and visual symbols.

To fulfil the first objective of the thesis, it was necessary to fulfill the second objective first. By studying examples of metaphor use and theory from psychology, philosophy, synectics and graphic design, students could expand upon their understanding and recognition of metaphor.

An example of how metaphor is used to create unique experiences and images in the viewer's or listener's mind can be found in several disciplines as **poetic truth**. In laymen's terms, poetic truth can be thought of as the underlying meaning of an object, process or condition. The connection the metaphor creates need not be literal. For example, Joseph Campbell, in *The Inner Reaches of Outer Space*, makes use of both figurative and literal metaphor in a practical application. He discusses the significance and origins of the symbolism contained within the imagery on the reverse side of a United States one dollar bill. (The Great Seal of the United States).

"The Eye of the Holy Spirit, here shown at the summit of a Pyramid of Creation, is a counterpart of the Eye of Vishnu mentioned in the Indian tale of "Humbling of Indra" (p.51). One may think of it as connoting, metaphorically, that mysterious "impulse" out of which the Big Bang of creaton sent flying into distances that are still receding in expanding space, earth as stars, constellations, and a Milky Way of unnumberable points of light ...

The present pyramid is not however, of that first creation, but of a second, a "new order of the world" (*novus ordo seclorum*), represented here as constituted of exactly 13 courses allegorical of our 13 original states..." (Campbell, p.126)

Campbell's first paragraph above contains a figurative, metaphorical comparison. Humanistic Psychologist, Bob Samples, might classify the metaphor as a **Synergic-Comparative metaphor**. Campbell is comparing the shining beams of radiance or light that emanate from the pyramid to the Eye of Vishnu and the dynamism of the Big Bang. The metaphors create startling imagery in the mind's eye. Whereas the second paragraph is mundane in comparison; the 13 levels of the pyramid are simply symbolic for the original 13 states. Samples would classify this as a **Visual, Symbolic metaphor**.

By deliberately and appropriately using metaphor, designers can implement imagery and text that contains tremendous depth and meaning. The audience of the metaphorical creation, assuming they possess the same cultural codes with the metaphor being used, should be able to make

conscious and/or subconscious associations with the imagery. This type of communication conveys information on a level of shared, human understanding. Adolf Bastian, 'a medical man, world traveler, and leading ethnologist of the last century' termed the themes and features of shared understanding as 'elementary ideas' :

Elemetargedanken, designating as 'ethnic' or 'folk ideas,' Volkergedanken, the differing manners of their representation, interpretation, and application in the arts and customs, mythologies and theologies, of the peoples of this single planet...A number of leading psychologists of the past century addressed themselves to the analysis of these universals, of whom Carl G. Jung (1875-1961)...was the most illuminating. The same mythic motifs that Bastian had termed 'elementary ideas,' Jung called 'archetypes of the collective unconscious,' transferring emphasis, thereby, from the mental sphere of rational ideation to the obscure subliminal abysm out of which dreams arise.' (Campbell, p. 11)

Humanity is linked at fundamental, subconscious levels, glimpsed by psychologists and others able to interpret dreams. Dreams are the window to the subconscious, and the **collective unconscious**. Jung's theories of the collective unconscious are valuable to designers because the theory proposes or postulates that 'universal', metaphoric imagery could be useful in the processes of brainstorming and ideation. Also, being aware of the imagery of the collective unconscious would help an individual recognize the use of such imagery, and make appropriate associations.

Jung was researched as a psychologist with relevent study into the area of metaphor (collective unconscious). In this thesis, there are four fields of study that have been researched: graphic design, psychology, philosophy and synectics. Each of these fields has been broken down to several individuals, and a particular area of interest or work that they did involving metaphor in some way (**see figure 1**). In the next section (Process), I will describe the research that was performed in each of these fields. The Application section will explain the relationship this research had to my final application, 'Metaphor Vacation', and the Evaluation section will discuss personal and external evaluations of the application.

Collective Unconscious:
'...there exists a second psychic system of a collective, universal, and impersonal nature which is identical in all individuals. This collective un-conscious does not develop indidually, but is inherited. It consists of pre-existent forms, the archetypes.'
(Robertson, p. 85)

Figure 1

Fields of Study:	Person:	Case Study:
Graphic Design	Charles Coiner	Yes
	Will Burtin	
	William Golden	
Psychology	Sigmund Freud	Yes
	Jean Paiget	
	Carl Jung	
Philosophy	Friedrich Nietzsche	Yes
	Aristotle	
	Nelson Goodman	
Synectics*	William Gordon	Yes

* Synectics is both a process and a field of study

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Process

■ Clarification of Concerns

"Designers often use *idea* interchangeably with words such as concept, theme or scheme. They do not make distinctions between appetizing delicacies and truths which have helped explain the whole of reason. Only by recalling the word's Greek origin, where *idein, to see* is coupled with the Platonic conviction that *idea* is the force/truth within all creative achievement, can we begin to have an understanding of a building's innermost vitality. *Idea* has nothing to do with fashion or style. It is not interchangeable with theme or scheme, and it is not equivalent to concept, which deals with a generalized class of things and connotes resolution rather than invention. And *idea* is much more than systematic combinations and artful arrangements. I believe that a real idea alters thought, and changes human action after its occurrence." (Colbert,p.12)

■ Research Related to Synectics

Synectics:
"...from the Greek, means the joining together of different and apparently irrelevant elements. Synectics theory applies to the integration of diverse individuals into a problem-stating problem-solving group. It is an operational theory for the conscious use of the pre-conscious psychological mechanisms present in man's creative activity. The purpose of developing such a theory is to increase the probability of success in problem-stating, problem-solving solutions. This increase depends on awareness of the mechanisms which must be worked through to arrive at solutions of fundamental novelty." (Gordon,p.3)

Synectics is not devoted to a single field or area of study. It developed as a process for discovering the roots of creativity. Today, people still participate in group synectic sessions.Their conversations, and therefore their creative process, is recorded, with the hopes of someday being able to chart how creativity works. However, it is not just the creative research that is important, but the process of creative thinking that has devel-oped from this research, which is also known as "Synectics".

Fantasy Comparisons:
"...The artist must know how to transform, to depersonalize, to hide the source of his wish. When he is successful in so doing, and his work is accepted, then he has accomplished through fantasy what he could have won in no other way." (Gordon,p.48)

Synectics, as a process, attempts to alter the way people perceive and solve problems. Consider the two primary clauses of synectics. The first is "Make the strange familiar." The second is "Make the familiar strange." By using four different types of metaphor, people using a synectics approach arrive at unforeseen solutions to stated problems. Using metaphor in a creative process allows the potential for new connections to be made. These connections strengthen the overall verbal or visual solution of a problem *semantically*. Synectics, as told by William Gordon, encourages individuals and groups to leave linear thinking processes and explore divergent thinking. The Synectic process possesses four analogic thought patterns, which are thinking methods for making metaphorical comparisons.

1. Direct comparisons: a direct comparison, such as "clouds are cotton".
2. Personal comparisons: these require the thinker to physically become a part of the object, such as "I am dancing like a tree."
3. Symbolic comparisons: these comparisons use symbols or objective substitutions for objects, processes or conditions. An equation, such as $F=ma$, is an example.
4. Fantasy comparisons: make use of the theory of Sigmund Freud, that "...creative work in general, and art in particular, is the fulfillment of a wish

A method for creating a fantasy comparison could begin with the question, "How do we in our wildest fantasies desire the closure (for a vapor proof closure for space suits)

to operate?" After stating the problem, a group discussion would ensue. Suggestions such as "...you wish it closed, and invisible microbes, working for you, cross hands across the opening and pull it tight..." and "...A zipper is kind of a mechanical bug (Direct Analogy mechanism)" prompted a final solution that was innovative and practical. These are examples of how synectics classifies metaphor in the interest of creative problem solving.

The synectics research provided an innovative process for students to approach design problems. It encourages people to:

1. state a problem in a creative, different manner.
2. recognize metaphors in the process of brainstorming
3. utilize metaphoric comparisons to alter the way people think about a product or problem

This research seemed very useful to me. Synectics already fulfills some of the objectives that I hoped to accomplish. I hoped that design students would learn to look at the world in "a creative, different manner." By making "the familiar strange, and the strange familiar," Synectics provides an example of how this can be done. I incorporated the research related to Synectics into the application to a) provide an example of a methodology for approaching problems in an innovative manner, and b) to show how metaphor can be used both in theory and in application, as seen in the case study in the Hypercard stack.

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■ Research Related to Psychology

Humanist psychologist Bob Samples lists the different forms, or modes of metaphor as a **Hierarchy of Access**. The Hierarchy of Access is a formal listing of the ability of adults to interpret metaphor in western culture. Adults of western cultures are most easily able to understand and use *Symbolic metaphors*, but find difficulty with Inventive metaphors. Again, there are four categories:

Hierarchy of Access:
1. Symbolic Metaphoric Mode: exists whenever a symbol, whether abstract or visual is substituted for some object, process or condition. This category has two sub-categories:

<u>Abstract</u>: letters of the alphabet, numerals, math symbols and
    other technical imagery
<u>Visual</u>: trademarks, some roadsigns, logos and many map marks,
    Egyptian pictographs, native american petroglyphs, Chinese
    and Japanese pictographs and ideographs.

2. Synergic - Comparative Metaphoric Mode: exists when two or more objects, processes or conditions are compared in such a way that the elements combine to become more than either was before. This is sometimes know as *synergy*, where the whole is greater than the sum of its parts.This mode is external in nature (the person creating the metaphor is detached or outside of the object.) *Anthropomorphic metaphors* would fall under this category as they are giving human characteristics to a non-living object, process or condition. (the individual is not *personally* becoming involved with the metaphor.)

3. Integrative Metaphoric Mode: occurs when physical and psychic attributes of the person involved are extended into direct experience with objects, processes and conditions outside themselves. A good example of the *Integrative Metaphoric Mode* can be seen by making the connection that this type of metaphor is similar to the way *Personal comparison* metaphors work in synectics (example in side bar). By involving themselves in the problem which the Integrative Mode (Personal comparison), the group again eventually arrived at an efficient solution. The essential metaphor they were creating was "I am the mechanism."

Symbolic Metaphoric Mode:
The Abstract mode is considered a left hemisphere brain activity, while the visual mode is considered right hemisphere. This distinction relates to the quote at the beginning of this thesis, in particular: "The cultural bifurcation of art and science in our society..." There is not only a cultural separation of art and science, but an innate anatomical one as well. This was clarified when I learned of experiments by Norman Geschwind with Japanese mind-stroke patients. The Japanese have two languages: Kanji, their counterpart to Chinese visual language, and Katakana, which is the Japanese abstract symbol language (phonetics). Katakana creates abstract, visual images of sounds. When these sounds are put together, they do not represent some-thing individually, but the collection of sounds is under-stood as the label of an object, process or condition. In Japanese-speaking people, "left-hemisphere strokes resulted in loss of the ability to read and write only in the Katakana alphabet. That is, people suffering left-hemisphere strokes lost the ability to manipulate the logic of the abstract symbolic alphabet. They retained the ability to read and write in Kanji, in the visual symbolic realm." (Saples, p.87)

Integrative Metaphoric Mode example:
"A Synectics group had been attacking the problem of inventing a new and practical constant speed mechanism: How to run a shaft at speeds varying from four hundred to four thousand rpm so that the power take-off end of this shaft always turns at four hundred." (Gordon, p.38)

Group members took turns pretending to be the mechanism:

A: Okay I'm in the damn box. I grab the in-shaft with one hand and grab the out-shaft with the other. I let the in-shaft slip when I think it's going too fast so that the out-shaft will stay constant.
B: But how do you know how fast the out-shaft is really going?
A: I read a watch and count.
C: How do you feel in there?
A: Well, my hands are getting...too hot to hold I guess... at least one hand, that is...the one that's acting like a clutch...slipping.
C: B, how about you hopping into the box.
(Gordon,p.38-39)

4. Inventive Metaphoric Mode: occurs whenever a person
creates a new level of awareness of knowing as the result
of self-initiated exploration of objects, processes, or
conditions. The new level of awareness is similar to what
Colbert was referring to when he stated "...I believe that a
real idea alters thought, and changes human action after its
occurrence." An inventive metaphor is so original and unique
that it changes the way we perceive the world. Examples
could be scientific insights in the nature of light; as in "light
is a wave". This metaphor was both extraordinarily helpful,
and yet harmful as well. The original scientist who
postulated light acting as a wave, took the metaphor too
far and stated there must be a medium for the wave to
travel through, such as *ether*. Light actually travels through
a vacuum, so the metaphor was useful, but not a completely
accurate one.

New products or advertisements could act as inventive
metaphors, if the reasoning and research into the metaphor
was sufficient. An advertisement of such nature would not
so much sell a product, as raise the level of awareness of
some product, process or condition of the viewer. I believe
it should be the goal of every designer to strive for such
quality communication. However, as I mentioned earlier,
this type of metaphor is the most difficult to achieve and
understand in western culture. Such an application, if
successful, would probably only be understood by a limited
audience, although it is probably easier to recognize such a
metaphor, than to create one.

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Sigmund Freud

Freudian Dream Theory

Freudian dream theory postulates that dreams are the "guardians of sleep." Freud believed that the **unconscious** mind creates dreams during sleep to satisfy it's desire to remain sleeping. It is the imagery created in dreams that I found to be useful for this thesis. I presented Freud's dream theory in the application so that the users of the stack would be aware of possibility that the graphic imagery they create could have more meanings/ interpretations than they immediately realize.

Freud stated that **dreams** occur when:

"A relaxation of resistances...,with a consequent pushing forward of unconscious material, takes place regularly in the state of sleep, and thus brings about a necessary precondition for the construction of dreams." (Freud, p. 33)

There are certain terms that must be clarified when speaking about Freudian dream theory:

1. Manifest dream material:
The overt dream content as remembered by the dreamer
2. Latent dream thought:
The processes concealed behind the manifest dream material.
3. Dream-work:
The process by which the manifest dream material is derived from the latent dream thoughts.
> a. *Condensation*: the formation of unities from things which we keep separate in our waking thoughts
> b. *Displacement*: The most important thing in the manifest content may be trivial in the dream thoughts and vice versa.
> c. Thoughts are transformed into visual images (Freud, 1916).
> d. *Opposites*. The manifest dream may express a latent dream thought by its opposite (!). Freud tries to support this claim by recourse to linguistic examples, e.g. *altus* means high or deep, *sacer* means sacred or accursed.
> e. *Secondary elaboration*. The attempt to give a coherent overall picture of the dream on recounting it.

4. Dream distortion: "the study of dream-work affords us an excellent example of the way in which unconscious material from the id forces itself upon the ego, becomes **preconscious** and owing to the efforts of the ego, undergoes the modifications which we call dream distortion" (Freud, 1940) (Kline, pp. 204-205)

Freudian Dream Theory:
"*Every dream is an attempt to put aside disturbance of sleep by means of a wish fulfilment. The dream is thus the Guardian of Sleep*" (Freud, 1940)

Formation of Dreams:
Dreams may be provoked in two different ways:
1. *An instinctual impulse which is as a rule suppressed (i.e., an unconscious wish) finds expression during sleep.*
2. *A desire left over from waking life obtains reinforcements during sleep from an unconscious element.*

Dreams therefore may arise from the id or the ego (Freud, 1940).

conscious
merely the layman's understanding of consciousness
preconscious
capable of becoming conscious (fairly easily)
unconscious
other psychical processes and psychical material which have no...easy access to becoming conscious but must be inferred, recognized and translated into conscious form." *(Freud, p.32)*

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Dream symbols

'The number of things which are represented symbolically in dreams is not great. The human body as a whole, parents, children, brothers and sisters, birth, death, nakedness and one thing more'
(Freud, 1916)

Object in latent dream	Manifest symbol
Whole male genitalia	*Number 3*
Penis	*Sticks, umbrellas, poles, trees, knives, daggers, lances, sabres, guns, pistols, revolvers, taps, watering cans, springs, pulley lamps, pencils, penholders, nail files, hammers, reptiles, fishes, serpents, hats and cloaks, machinery*
Erection	*Balloons, aeroplanes, the sensation of flying*
Female genitalia	*Pits, hollows, caves, jars, bottles, bones, chests, coffers, pockets, land-slides, landscapes, jewel case*
The womb	*Cupboards, stores, rooms*

archaic heritage

the experience of humanity's ancestors; archaic heritage is the precursor to Jung's theory of archetypes

According to Freud, **Dream symbols** are, for the most part, personally manifested metaphors for suppressed sexual desires. (Freud, 1916) Freud theorized that:

1. Symbolism. Certain objects, especially sexual organs, are presented by other objects in dreams and in primary, unconscious thought processes. Since dream contents are primary processes symbolism can be observed outside dreams and, as we shall see, symbolism is best investigated outside dreams.' (Kline, p. 207)

2. Dreams fulfill wishes. This part of Freudian theory can be tested, in theory at least, by comparing the dreams of subjects whose repressed wishes have been independently assessed. Similarly dream deprivation would be expected to produce disorders of waking behaviour. (Kline, p. 207)

Freudian theory reveals that the human subconscious will create symbols and metaphors during the dream state. Freud's dream analysis is the cornerstone for much of psychoanalytic theory.

Formation of Dreams:
1) An instinctual impulse which is ordinarily suppressed (an unconscious wish) -the source of the dream being the id
2) 'an image left over from waking life, a preconscious train of thought with all the conflicting impulses attached to it, finds reinforcement during sleep from an unconscious element.' -the source of the dream being the ego (Freud, p.39)

Function of Id in dream formation:
(a) 'Memory is far more comprehensive in dreams than in waking life. Dreams bring up recollections which the dreamer has forgotten, which are inaccessible to him when he is awake.'
(b) 'Dreams make an unrestricted use of linguistic symbols, the meaning of which is for the most part unknown to the dreamer. Our experience, however, enables us to confirm their sense. They probably originate from earlier phases in the development of speech.'
(c) Memory very often reproduces in dreams impressions from the dreamer's early childhood of which we can definitely assert not only that they had been forgotten but that they had become unconscious owing to repression. That explains the help-usually indispensable-given us by dreams in the attempts we make during the analytic treatment of neuroses to reconstruct the dreamer's early life.'
(d) 'Furthermore, dreams bring to light material which cannot have originated either from the dreamer's adult life or from his forgotten childhood. We are obliged to regard it as part of the **archaic heritage** which a child brings with him into the workd, before any experience of his own, influenced by the experiences of his ancestors.' (Freud, p.40)

Freud's dream theory discusses the human psyche, the 'id', 'ego', and 'superego'. The id is the location of the unconscious activities of the brain. The ego could be considered the personality of an individual (from

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interaction with others). The superego is the the location of the attributes gained from one's parents. Freud believed that the Id taps into inherited experience, inaccessible on a conscious level. During sleep,

"every dream that is in the process of fromation makes a demand uon the ego-for the satisfaction of an instinct, if the dream originates from the id; for the solution of a conflict, the removal of a doubt or the forming of an intention, if the dream originates from a residue of preconscious activity in waking life. (from the ego) " (Freud, p.42)

Wish fulfilment
Freud believed that the sleeping ego's desire is to maintain sleep, the ego attempts to be rid of the demand, or instinct by satisifying it.(Freud, pp.42-43)

The fulfilling of the **wish** represents the actual satisfaction of the desire. In other words, the instinct or desire has not been truly fulfilled in reality, but has been fulfilled metaphorically. Freud stated that the dream is the "guardian of sleep". (Freud, pp. 45-46) The dream attempts to satisfy the ego's desire to remain sleeping. The id and residual preconscious desires attempt to disrupt this sleep by broaching their needs with the ego. The dream therefore creates metaphoric imagery and situations attempting to satisfy these needs. In the event that the attempt fails, the individual might wake up. The dream, in the Freudian sense, becomes a metaphorical guardian for a metaphorical process.

This thesis recognizes the metaphoric process within Freudian theory. The imagery generated by the dream could differ in their metaphoric sense, depending on whether the dream was initiated by the id or the preconscious. Freud believed that if the preconscious initiated the dream, the metaphoric imagery could be specific to recent events in the individual's life. On the other hand, the id accesses humanity's "archaic heritage". Freud stated that the imagery would thus be universal, and it would be the interpreter's job to find the connection between the universal imagery and the individual being examined. Although I find it difficult to place complete authority of the dream process within the realm of Freud's theory, I do recognize the "archaic heritage".

Freud's Dream Theory can be useful for designer's when creating graphic imagery. By keeping in mind that there is possibly certain images that are universal to everyone, albeit with slightly differing meanings to each, designers can create graphic images that possess intimate meaning to the human species. Or, designers should at least be aware that the imagery they create could have more meanings and interpretations than predicted; a particulary potent image

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might trigger some sympathetic preconscious desire in the viewer. This is why I chose to include this theory of Freud's within the application. It shows that there is a possibility that the unconscious mind 'rules our sleep.' Advertising attempts to capture the interest and attention of viewers so as to sell a product. Some designer's may not realize why some advertisements are more effective than others. Certainly there are design principles that can be pointed to and said 'that is why the advertisement is more effective ...it uses this and this and this.', but if Freud's theory is correct, then graphic imagery affects not only the conscious mind of the viewer (who could then recognize aesthetic design principles), it could also affect the unconscious, where dreams are formed.

Freud's Dream Theory has similar attributes to Jung's theory of archetypes.

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Carl Jung

Jung's theory of archetypes was presented in the application as an alternative to Freud's dream theory. I personally find Jung's theory of **archetypes** to be more plausible as it states a wider variety of causes for dreams, not just sexual drives. Jung's theory of archetypes takes Freud's theory of an 'archaic heritage' a step further; Jung theorizes that dreams are humanity's attempt to compensate for its current lack of symbolic involvement with nature. Jung states:

'As scientific understanding has grown, so our world has become dehumanized. Man feels himself isolated in the cosmos, because he is no longer involved in nature and has lost his emotional 'unconscious identity' with natural phenomena. These have slowly lost their symbolic implications...
    This enormous loss is compensated for by the symbols of our dreams. They bring up our original nature-its instincts and peculiar thinking. Unforunately, however, they express their contents in the language of nature, which is strange and incomprehensible to us.' (Jung, p.85)

In *Psychological Types*, Jung discusses symbol in a way that 'was a clear indication that he was discussing...the ways in which 'archetypes' came into existence.' (Robertson, p.142) Regard these two statements:

'The concept of a symbol should in my view be strictly distinguished from that of a sign. Symbolic and semiotic meanings are entirely different things...so long as a symbol is a living thing, it is an expression for something that cannot be characterized in any other or better way. The symbol is alive only so long as it is pregnant with meaning. But once its meaning has been born out of it, once that expression is found which formulates the thing sought, expected, or divined even better than the hitherto accepted symbol, then the symbol is dead, i.e., it possesses only an historical significance. (Jung, 1971:814ff)

and:

'An expression that stands for a known thing remains a mere sign and is never a symbol. It is, therefore, quite impossible to create a living symbol, i.e., one that is pregnant with meaning, from known associations. For what is thus produced never contains more than was put into it. Every psychic product, if it is the best possible expression at the moment for a fact as yet unknown or only relatively known, may be regarded as a symbol.' (Robertson, p.142)

These three excerpts present a ground in which to discuss Jung's theory of archetypes. Jung discusses symbols as as means to get in touch with nature and therefore, ourselves.

Archetypes
'...it is impossible to give an arbitrary (or universal) interpretation of any archetypes. It must be explained in the manner indicated by the whole life-situation of the particular individual to whom it relates.' (Jung, p.87)

'Archetypes appear in practical experience. They are, at the same time, both images and emotions. Both must be simultaneous for the archetype to exist.' (Jung, p.87)

Instincts vs. Archetypes
'Instincts are physiogical urges and are perceived by the senses. But, they also manifest themselves in fantasies and often reveal their presence only by symbolic images. These manifestations are what I call the archetypes. They are without known origin; and they reproduce themselves in any time or in any part of the world.' (Jung, p.58)

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Jung comments on how the development of consciousness has separated humanity from nature. Primitive man, with his rituals and mystical understanding of the world, was in tune with nature. The consciousness that he had was able to assimilate and participate in a metaphorical world. The first quotation above from Jung, demonstrates how the world truly was a metaphorical place to live. Everything had allusions to something else. Men could speak to rocks or animals, and believe that he was understood. The rocks, the animals- much of the world, had symbolic/metaphoric significance. Jung believes that this communing with nature has been lost to modern man due to the further development of consciousness, which Freud would call the 'ego'. Mankind has separated itself from an integral part of its nature by denying itself metaphorical meaning.

In the second and third paragraphs listed above, Jung clarifies his point of the separation of man from nature. Jung states that a sign represents something that is comprehensible to humanity. A symbol goes beyond a sign. A symbol's full meaning cannot be grasped or understood, there is always some meaning or nuance that is yet to be comprehended. Jung creates the metaphor of a symbol being 'pregnant' with meaning. If, in some manner, a symbol should finally become understandable, or lose its 'divinity' or incomprehensibiliiy, then it loses it's 'symbol status', and becomes merely a sign; the meaning, or 'child' has left the symbol, and the womb, or symbol, is left empty.

Jung theorized that there were three categories for the 'totality of the human psyche.'

1. the personal consciousness
2. the personal unconscious
3. the collective unconscious

It is Jung's work in the area of the *collective unconscious"* that was relevent to this thesis. Jung states: 'The unconscious is...a static repository of personal and collective material...which serves and even anticipates the needs of consciousness.' (Robertson, p. 94) Jung initially defined the imagery generated by the collective unconscious as 'primordial images', and later termed the imagery, *archetypes.* (Robertson, p. 101) These archetypes, as metaphors/images for inherited tendencies,take different forms, such as Mother, Shadow or the Anima.

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Two examples of archetypes would be:
1. Shadow
All those parts of our personal life which have been deemed unsuitable and denied collect around a single archetypal core. Everything we regard as bad, as 'not us', accumulates around this center.
2. Anima/Animus
The attributes that comprise the 'self'. As in the yin/yang symbol, the anima/animus archetype represents the feminine attributes within a male, and the male traits within the female.

However, Jung stated that **archetypes** are 'often misunderstood as meaning certain definite mythological images or motifs. But these are nothing more than conscious representations.' (Jung, p.57) In other words, the universal, metaphoric imagery generated by an individual might resolve itself into an archetype which could be thought of as similar to rituals. (in that they are metaphors *for* an action, an event or an experience or with the *possibility* of an action, event or experience.)

Jung's theory of archetypes is relevant to this thesis in that 'archetypes' can be thought of as an inherited pool of tendencies and images. In dreams, people glimpse this imagery which is spilling from the unconscious. Analyzing and interpreting these images can lead to creative insights. For example:

'We find this in everyday life, where dilemmas are sometimes solved by the most surprising new propositions; many artist's, philosophers, and even scientists owe some of their best ideas to inspirations that appear suddenly form the unconscious. The ability to reach a rich vein of such material and to translate it effectively into philosophy, literature, music, or scientific discovery is one of the hallmarks of what is commonly called genius.' (Jung, pp.25-26)

Jung clarifies this statement with several examples, one of which is 19th century German chemist Kekule. He was attempting to discover the molecular structure of benzene. He had a dream where he envisioned a snake, in the shape of a circle, biting it's own tail. Upon waking, and intro-spection, Kekule realized what the structure of benzene was: a circular, closed carbon ring. (Jung, p. 25)

Jung's theories were presented in the application because some designers might think the distinction between the sign/symbol to be irrelevant. Jung would not. It is important for distinctions to be made between the variety of graphic imagery being created, if only for theoretical reasons. According to Jung, designers should understand that a symbol is difficult to create, for the symbol's full meaning can never be grasped. If Jung's theory were to be trans-lated into design, then most of the 'symbols' that designers create are actually 'signs'.

Graphic designers, when creating logos, identity-marks, etc., attempt to create a mark that effectively communicates some meaning to the viewer. A 'sign' would be appropriate

in this case, not a "symbol". A "symbol", by definition,
possesses too many innuendos and shades of meaning
to be effective as a direct mode of communication, unless
the intent of the designer was to represent graphically
something that is "ungraspable" (such as "God").

Also, the application emphasizes that designers should keep
in mind Jung's theory of "archetypes" when creating graphic
imagery. "Archetypal imagery" might evoke strong reactions
from viewers on an unconscious level. In the case of a
commercial product, a designer attempts to create
advertisements and imagery that will cause the viewer
to remember and desire the product. If Jung's theory of
"archetypes" is correct, then an advertisement that tapped
into the "archetypal imagery" might prompt a response from
the viewer's unconscious. A consumer might then desire/
remember a product because of an internal, unconscious
reaction to the advertisement.

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Jean Piaget

One of the objectives of the application is to present information from various fields that pertain to metaphor. The psychology section of the Hypercard stack was included for two reasons. The first reason is that the theories that are presented show how the human mind might work when it uses or processes imagery. As designers are concerned with imagery and how an audience will interpret imagery, becoming aware of these theories could be useful.

I chose to include research related to Piaget's theory of a child's use of imagery as part of the *semiotic function*. Piaget theorizes that a child viewing an image, stores the representation of the image *symbolically* in his/her memory. The image is not stored literally (the image is not 'seen' continually in the memory, like a photograph), rather, Piaget believes that the image is reconstructed according to the child's current level of understanding the world. The image can later be 'recalled' (if the child is asked to draw what was viewed, for example), but the image will have varied according to whatever interpretations/limitations the child's unconscious mind placed on the image when 'storing it.' Despite the variance, or maybe because of it, Piaget theorized that the viewed image becomes an essential part of thinking, as it is an essential part of the *semiotic function.* Piaget stated:

'...Are these concepts pure concepts? Or do they not rather derive from those forms of thought, so illuminating from the psychological and sociolog- ical viewpoint, which combine images and concepts, and which one can group under the generic term of symbolic thought?' (Piaget, pp.379-383)

'Words, then, merely designate conceptual articulations; and if they are used to describe a given object such as a square, they can designate it only as a conjunction of certain conceptual relations. The image, on the other hand, designates the object itself with its particular perceptual details and its concrete figural characteristics. The image's function, then is to designate, not to interpret.' (Piaget, p.381)

'...graphic expression, which of course is far superior (than language), but in any case belongs to the image category. But it is entirely indispensable to conserve a part of past experience in the memory, so that it can be drawn on as required for multiple purposes of adaptation. It is clear, therefore, that if one wishes to evoke in thought some past perception, it is necessary to supplement the verbal sign system with a system of imaginal symbols. Without some semiotic means it would be impossible to think at all. The image, then, is a symbol in that it constitutes the semiotic instrument necessary in order to evoke and think what has been perceived.' (Piaget, p.381-382)

Semiotic Function
'Only after discussing the problems of imitation, play, and unconscious symbolic thought can we then...place within the whole structure the beginnings of cognitive representation and draw the resulting conclusions as to the mechanism of representational activity or the symbolic function.' (Gruber, p.483)

Semiotic Function
'Any representational cognition (the term being taken in the broad sense of 'thought', as opposed to sensori-motor or perceptual cognition) presupposes the bringing into play of some symbolic function. It would be preferable to describe this function as 'semiotic', since it embraces arbitrary and social 'signs', motivated 'symbols' (resemblance between symbolizer and symbolized), individual 'symbols' (symbolic play, dream, etc.) and social symbols. Without this semiotic function thought could not be formulated, and consequently could not be expressed intelligibly either to others or to oneself (internal language, etc.) (Piaget, pp. 379-380)

'Only after discussing the problems of imitation, play, and unconscious symbolic thought can we then...place within the whole structure the beginnings of cognitive representation and draw the resulting conclusions as to the mechanism of representational activity or the symbolic function.' (Gruber, p.483)

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The above quotations from *Mental Imagery in the Child* by
Jean Piaget and Barbel Inhelder, allude that mental images
are required for effective communication.

Piaget is making his case for mental imagery being a
mandatory aspect of the cognitive process. Language
alone will not suffice to convey meaning from one individual
to another. He states that "without some semiotic means
it would be impossible to think at all.", which is obvious.
Without some means of interpretation and rendering
sensible the input people receive from their internal and
external processes, people would not possess a conscious-
ness. There would be no discriminating semiotic functions
ocurring to digest and initiate intelligible communication.
Piaget states that associationists have opposed this theory.
They believe that "the image is a simple prolongation of
perception." (Piaget, p.381) Piaget negates this statement
by testing with children. In this case: "(1) the subject is not
conscious of handling a symbol when he "looks at" an inter-
nal image, and (2) this image is frequently very accurate,
whereas a symbol merely represents the thing symbolized"
(cf. Freudian symbols). Piaget then, believes that the
"mental image" is a metaphorical process "necessary in
order to evoke and think what has been perceived." The
human mind constructs symbolic imagery to represent a
previous perception. These visual, symbolic images are the
components of human "visual" memory.

Piaget's theory of "mental imagery" was included in the
application to show how a cognitive psychologist uses
metaphor in theory. Also, by presenting this theory, I hoped
to make the users of the application aware that a child could
interpret an image much differently than adults, or even
other children. The human mind metaphorically stores and
recalls images; remembered imagery is not a "photographic
snap-shot." Designers might strive to create imagery that is
"cognitively stored accurately".

■ Research Related to Philosophy

The *Dictionary of Philosophy* lists the following
definition of metaphor:

METAPHOR, (alienation, transference, imagery):
The use of a term in the broader sense, in as far as it is applied by
comparison to other things than according to its strict linguistic
meaning. E.g. Clemenceau was the political 'tiger' of the first World War.

The *Encyclopedia of Philosophy* illustrates this elusive
definition when it states

'Metaphor is a linguistic phenomenon of peculiar philosophical interest
and importance because its use in various domains raises puzzling
questions about the nature and limits of language and knowledge.'
(Edwards,p.284)

The Encyclopedia then limits its exploration of metaphor
to '...cognitive aspects of metaphor, that is, problems about
its functions in the acquisition and communication of
knowledge.' (Edwards,p.284) Therefore, brief descriptions
of the theories are presented. (see appendix C)

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Friedrich Nietzsche

In the following five statements, Nietzsche puts forward some of the ways in which art is not to be seen, but how or what art *is*. These statements on art become more than merely Nietzsche's opinion of art, but a commentary on what Nietzsche perceives as the superior, the quality, the elite of man. In other words, although 'the artist' is not literally mentioned, 'the artist' is seen by Nietzsche as 'the man of knowledge', 'the man of action', and 'the sufferer'; in other words, himself.

'Art and nothing but art! It is the great means of making life possible, the great seduction to life, the great stimulant of life.

Art as the only superior counterforce to all will to denial of life, as that which is anti-Christian, anti-Buddhist, antinihilist *par excellence*.

redeem:
1. To set free; rescue. 2. To save from sin.
3. To make up for
redemption 1. The act of redeeming

Art as the **redemption** *of the man of knowledge-* of those who see the terrifying and questionable character of existence, who want to see it, the men of tragic knowledge.

Art as the *redemption of the man of action-*of those who not only see the terrifying and questionable character of existence, who want to see it, the men of tragic knowledge.

Art as the redemtion of the sufferer-as the way to states in which suffering is willed, transfigured, deified, where suffering is a form of great delight.' (Nietzsche, p.452)

I initially assumed that Nietzsche was commenting on the act of creating art as the redeeming aspect of humity. However, I came to see the error of this belief. Apparently these statements were not intended for the benefit of humanity. Rather, Nietzsche was twisting the meaning of redemption (from religious doctrine) into an artistic construct from which he could glorify himself. Thus, redemption becomes symbolic for a 'divine', *artistic* salvation, rather than a religious salvation. Nietzche is proposing that the elitest man (himself, for one) can achieve this state of 'artistic redemption' through the creation of 'art.'

'Art', however, is not intended as fine art, but rather as any superior, creative and intellectual activity. Nietzsche therefore removes any need for a deity of any type as the elitest man can achieve redemption through his own efforts. Man, in essence, becomes his own deity.

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Nietzsche continues:

"One will see that in this book pessimism, or to speak more clearly, nihilism,
counts as 'truth.' But truth does not count as the supreme value, even less
as the supreme power. The will to appearance, to illusion, to deception,
to becoming and change (to objectified deception) here counts as more
profound, primeval, 'metaphysical' than the will to truth, to reality, to mere
appearance." (Nietzsche, pp. 452-453)

"...art is worth more than truth...'art as the real task of life, art as life's
metaphysical activity-" (Nietzsche, p.453)

The "artist" ("elitest, superior man), is a being participating
in the "supreme power", which is "worth more than truth"
because "art is life's metaphysical activity."; the act of
creating art is metaphorical for deifying oneself. The "artist"
is superior to lesser abstractions, such as "truth", or "God".

These "five statements on art", really have nothing to do with
art, and everything to do with Nietzsche. Nietzsche is using
the creative act of "art" as a metaphor for the "great means
of making life possible" in his life; it is *his* redemption.
"Art" was metaphorical for the superior creative activity of
man. (and therefore, only a few, elitest men are capable of
it). "Redemption" was metaphorical for a form of personal
deification, in an artistic sense, denying any deity a
participating role in the redemptive act. I originally
mistook Nietzsche's statements as affirming *any* artist's
work, and that is how it was presented in the application.
A later modification to the application would correct this
misunderstanding.

My research on Nietzsche's five statements led to some
observcations about the nature of metaphor. Metaphor is
used by humanity everywhere in every observation. Time
is a metaphor. Money is a metaphor. A lifetime is a meta-
phor. Nietzsche placed metaphor/art as more powerful
than "truth" because of its universal nature of representation
and allusion. If everything can represent something else,
then there is no universal "truth", merely what people
may choose to be *their* "truth". "Truth" is therefore
subjective. Metaphor is greather than "truth" because
metaphor encompasses the reality of appearance,
illusion, deception and change.

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Aristotle

Aristotle stated that "Art imitates nature", and this phrase has "been repeated and has passed current as a summary of the Aristotelian doctrine of fine art." (Butcher, p.116)

"...nature in Aristotle is not the outward world of created things; it is the creative force, the productive principle of the universe." (Butcher, p.116)

However, "to imitate nature," in the popular acceptation of the phrase, is not for Aristotle the function of fine art. The actual objects of aesthetic imitation are threefold:" (Butcher, p. 122-123)

1. characteristic moral qualities, the permanent dispositions of the mind, which reveal a certain condition of the will
2. transient emotions, the passing moods of feeling
3. actions in their proper and inward sense...an inward process, a psychical energy working outwards; deeds; incidents, events, situations, being included under it so far as these spring from an inward act of will, or elicit some activity of thought or feeling." (Butcher, p.123)

Therefore, "the common original, then, from which all the arts draw is human life, - its mental processes, its spiritual movements, its outward acts issuing from deeper sources; in a word, all that constitutes the inward and essential activity of the soul. On this principle landscape and animals are not ranked among the objects of aesthetic imitation. The whole universe is not conceived of as the raw material of art." (Butcher, p.124)

"A work of art is an idealised representation of human life-of character, emotion, action-under forms manifest to sense 'Imitation,' in the sense in which Aristotle applies the word to poetry, is thus seen to be equivalent to 'producing' or 'creating according to a true idea,' which forms part of the definition of art in general." (Butcher, p.153)

I travelled a twisting path of thought to how this statement should be correctly interpreted or used. My first assumption (incorrectly) was that Aristotle meant something similar to "Art is like nature", from which I could extract somehow that "Art is nature" Then I realized that I was approaching the problem from the wrong end. Aristotle states that art does not imitate nature, but the three objects that he lists. Therefore, *nature* is being used as a metaphor for the representation of human life; of character, emotion and action-under forms manifest to sense.

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This discourse was included in the application as a demonstration of how philosophy makes use of metaphor, and how the metaphor can sometimes be miscontstrued. The discourse was also presented in the hope that designers would realize that the same misconceptions can occur with a metaphor used in graphic imagery. It is important to choose a metaphor that the audience will interpret in the manner that is intended. To insure correct interpretation, it becomes necessary to use clear wording/ imagery. For example, the misunderstanding of Aristotle's statement 'Art imitates nature' could have been avoided if it had been interpreted as 'Art imitates *human nature.*'

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Nelson Goodman

When is Art? Nelson Goodman presents five symptoms of
the aesthetic as an indication of when a work of art is indeed
functioning as a work of art: (Goodman,pp.67-68)

1. syntactic density, where the finest differences in certain respects
constitute a difference between symbols-for example, an ungraduated
mercury thermometer as contrasted with an electronic digital-read-out
instrument.

2. semantic density, where symbols are provided for things distinguished
by the finest differences in certain respects- for example, not only the
ungraduated thermometer again but also ordinary English, though it is
not syntactically dense

3. relative repleteness, where comparatively many aspects of a symbol
are significant -for example, a single-line drawing of a mountain by Hokusai
where every feature of shape, line, thickness, etc. counts, in contrast with
perhaps the same line as a chart of daily stockmarket averages, where all
that counts is the height of the line above the base

4. exemplification, where a symbol, whether or not it denotes, symbolizes
by serving as a sample of properties it literally or metaphorically possesses

5. multiple and complex reference, where a symbol performs several
integrated and interacting referential functions, some direct and some
mediated through other symbols.

Goodman poses the question of "What is art?" He responds
by saying that it is an incorrect question. "When is art?"
is a more appropriate question. He states that this is
determined by the symbolic function of a work of art.

"...that whether an object is art-or a chair-depends upon intent or upon
whether it sometimes or usually or always or exclusively functions as
such...A salient feature of symbolization, I have urged, is that it may come
and go. An object may symbolize different things at different times, and
nothing at other times." (Goodman, p.70)

A couple useful deductions might be made from Goodman's
symptoms. If a symbol can possess metaphorical qualities,
as indicated in symptom four, then the metaphor might also
be subject to the symbolic function of a work of art. In other
words, the salient features of metaphors in works of art,
will fluctuate depending upon the context in which they are
presented. An object may serve as a sample of properties it
metaphorically possesses to different things at different
times. It becomes paramount, therefore, to ensure that the
viewer of the work of art is aware of the salient features
that the artist is attempting to communicate.

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The application presents Goodman's theory in the hope
that designers, as visual communicators, should become
especially aware of this. Graphic imagery might have
some specific meaning in a given location, or context of
being viewed. If the context or locale is changed, does
the imagery, whether it be an identity-mark, or an
advertisement, convey a different message to the viewer?
Cultural differences would be an obvious example of how a
graphic image's meaning might change in a different locale/
context. For example, a white image in western culture
might exemplify life and rebirth, whereas in some eastern
cultures, white represents death and mourning.

Also, "exemplification" was focused on in the application
as it brings up an interesting point for designers: When
could a graphic image exemplify certain attributes that
the designer intended, and when could it exemplify
other attributes? Designers should be aware that the
context in which image is displayed (such as a country,
a location, a magazine, etc.) could alter the qualities that
are communicated to a viewer. An example of under-
estimating exemplification would be with the "Nova"
automobile advertisements in South America. In this
case, "Nova" exemplified speed, power, etc. as in *super-
nova* (an exploding star). However, in South America,
the spanish language is used, not english. The
difference in culture, and language, in the context
relating it to an automobile, caused the name "Nova" to
be interpreted as "No va", or "No go." Needless to say,
the vehicle did not sell well.

■ Ideation

When deciding which medium would be most appropriate for the final application, Hypercard seemed an appropriate choice. An interactive-media program would be ideal for involving a predominantly media-oriented audience. I believed that undergraduate students would be easily able to identify with the computer/video format. Hypercard would afford me with:

1) the capability of audience involvement and interaction
2) the ability to incorporate sounds and imagery
3) the means to provide a learning experience for students

Informational posters were briefly considered as a possible alternative to the Hypercard Stack, but were found deficient in their ability to appeal as well to a young, media oriented audience. Hypercard provided an inviting, participatory medium for students to interact with.

Deciding on Hypercard as the medium for the application, I then considered which metaphoric vehicle could best suit my purposes. Since the intent of the application is to educate and expand the understanding of students about metaphor, I thought it prudent to use a metaphor as a working example within the stack itself. One of the first possibilities I explored was using a farm as a metaphor for a creative process. For example, the barn would be the center point of focus. Different planting fields would represent 'Different fields' such as philosphy, etc. The user of the stack would be the farmer that would visit his fields, then go to the market when he had a productive crop, or creative work. The evaluation could be based upon selling the crop at the market and returning to the farm for sowing new crops (revisions and further knowledge). This could have been a strong metaphor for the stack, but was determined inappropriate for an urban center of learning. Other metaphors were also considered as possible comparisons with the creative process, such as the functioning process of an automobile, the process of attending college and graduating, the functioning conditions of a city or factory and finally the process of going on a voyage, or taking a vacation. I decided on the vacation as an appropriate metaphor for a college audience. Almost everyone likes to take a vacation. Students are used to thinking of vacation as a time of relaxation and fun.

Expansion of the Benefits of Hypercard:
1. Hypercard is designed to involve the user of a 'stack', or a collection of index cards (itself an abstract and visual symbolic metaphor), to interact with it.

2. Hypercard is flexible enough to support scanned black and white and color imagery. Movie clips and animations can also be displayed. Recorded sound effects and voice overs are also possible.

3. Hypercard is a video media. Students raised in western culture, specifically american culture, are comfortable with the Hypercard format.

I hoped students would have positive associatons with this metaphor. I proceeded to analyze the **process of going on a vacation**. I asked myself such questions as "How could luggage be compared to a stage in the creative process?" or "How could flying be compared to a stage?" Luggage eventually became a metaphor for the knowledge or research accumulated during ideation. After breaking down the process of going on such a vacation, I determined that there were five stages that were most relevant. Appendix D shows how the steps of travelling relate metaphorically to a creative process.

Having decided upon the metaphoric vehicle, and its relationship to the creative process, it became apparent how the stack design could be modeled upon the metaphor of a vacation. I began the stack design by creating a map that would provide underlying structure. (see appendix E) Initially, the sections of the stack were different than the five steps of the Travel process. It did not occur to me until later that a more elegant solution to the organization problem would be to use the metaphoric steps as the actual headings for the stack. Initially, however, the headings were: *Introduction, Contents of Pathways, By Type of Metaphor, Tutorial, Instructional, Case Studies and History of Metaphor.*This organization was clumsy and failed to communicate vacation as a metaphor for the creative process.

The organization that developed was:

1. Home	**3. Flying**
2. Airport	**4. Destination**
	5. Reminiscing

These final five headings were different than the previous headings (seen in left margin), in that they simplified the process, and were more specific in their metaphoric meaning. (i.e, *Reminiscing about a vacation = evaluation, vs. Return Trip = evaluation.*) This accomplished two tasks: First, it communicated the metaphoric vehicle on an easily understood level. Second, it presented me with an organization method for the stack. I wanted to communicate to the audience that the metaphor that was developed for the application strengthened both the *structure* and the *message* of the stack.

Original Process Notes on Vacation Steps:
Five Steps In Travel Process:

1. Home
a. Taxi / Car
  - travelling to airport
  - first step on actual journey
  - requires money
  - transportation
  - destination
  - committed to goal
b. Parking Lot
  - temp. rest stop
  - block to objective
  - cross to next goal
  - how best to proceed?
c. < Shuttlebus >
  - on track again
  - moving
  - transported
  - carried
  - relocated
  - vehicle
  - automated
d. Entrance
  - door
    hindrance
    entrance
  - gateway
  - passage
  - tunnel
  - beginning
  - ending
e. To Airport

2. Airport
a. luggage
  - research
b. ticket
  - progress
  - green light
  - confirmation
  - need recognized
c. arrival/depart. monitor
  - time table
  - on schedule?
  - workable objectives?
d. waiting area
  - time-outs
  - rest breaks
  - focus
  - personal evaluation
  - review
  - introspection
e. restaurant
  - satisfies need
f. news stand
  - information
  - resources
  - exchange
g. security
  - test
  - security
h. platforms
  - heading out
  - path
  - springboard

3. Plane (etc)
4. Vacation (etc)
5. Return Trip (etc)

Application: Metaphor Vacation

■ Research: The Creative Process

The creative process, as proposed by Kromberg, contains seven steps. Obviously, the number of steps in any creative process will change from individual to individua. For the purposes of my application, only five steps ('steps' being metaphorical for all of the processes the individual undertakes in a given series or sequence) were necessary, these five steps were:

1. Accept Situation and Analysis
These steps are the initial intentions of a creative project, accepting them, and becoming familiar with the problem.
2. Define and Ideate
These steps are clarifying issues and searching for alternatives
3. Select
This step is choosing one of the alternatives presented.
4. Implement
This step is working towards an application.
5. Evaluate
This step is determining the meaning, progress or value from the entire process.

Accept Situation:
Defining and understanding the nature of the problem

Analyse and Defining:
Systematic Inquiry - Discover facts or relationships that may aid in solving the problem.

The steps in the creative process, **Accept Situation** and **Analyse and Defining**, are the stages that deal with becoming familiar with definitions, concepts and goals previously unknown. These steps are equated with *Home* and *Airport*, in the travel process.

The Travel Process

1. Home
The first part of the stack, *Home*, became devoted to explaining the purpose of the stack and how to operate the stack on a basic level. Some examples of psychological types of metaphor are also demonstrated. (see appendix E)

2. Airport
The *Airport* step affords the user the ability to look for definitions and clarification of topics. The *Airport* step affords the user with a place to retreat to for a clear definition. It also contains relevant excerpts from Synectics

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and Philosophy that help explain the respective fields' (or process) use or explanation of metaphor. The first two steps should therefore serve to introduce the users to the stack itself and assist them in comprehending the examples and discussions of metaphor throughout the rest of the stack.

3. Flying

The third step, *Flying*, is a metaphor for having decided upon a path to follow in the creative process. A menu appears that asks the user to select a field of study. If, for example, Graphic Design is chosen, then the user will be exposed to information about each of three designers: Charles Coiner, Will Burtin and William Golden.

A condensed biography is provided for each designer, with examples of the designers work. A menu at the top of the screen allows the user to search for four types of metaphors. (**From the Hierarchy of Access:** *Symbolic Metaphoric, Synergic-Comparative, Integrative Metaphoric, and Inventive Metaphoric*) If the example of the artist's work makes use of one of the types of metaphor then a field will appear that reveals the metaphor being used. Also, the Charles Coiner section has an extended analysis of metaphoric content on the NRA's 'Blue Eagle.' This case study is located in the *Destination* step, but can also be accessed from the artist's info card.

This structure remains true for the other three disciplines represented as well: Philosophy, Psychology and Synectics. For each of these disciplines there is an example and/or discussion of each author's work.

4. Destination

The *Destination* step for these other fields contains an appropriate example from one author of each discipline. The following is a compilation of the people listed in the *Flying* and *Destination* steps:

Graphic Design	Psychology	Philosophy	Synectics
Charles Coiner*	Sigmund Freud*	Friedrich Nietzsche*	WilliamGordon*
Will Burtin	Jean Piaget	Aristotle	
William Golden	Carl Jung	Nelson Goodman	

* = used for the case study in the Destination step

5. Reminiscing

"Reminiscing" is a metaphor for the evaluation step. When the user arrives at this card, a brief, five question evaluation will appear. (see appendix G) The evaluation tests the success of my three objectives. (see page 2) Once the form is filled in, the data is stored in a hidden field, where it could be obtained at need for later study.

Evaluation

Before I discuss the evaluation of the application itself,
I would like to discuss aspects of the project that surprised
or illuminated me. Initially, my perception of the project
was to 1) research metaphor in various fields, and 2) place
this information into a Hypercard stack in such a way that
fulfilled my objectives. I believed this would be a simple
matter of doing research and then applying it to my
application. This was not the case. Metaphor is used in
a variety of ways. Jung's discourse in *Man and His Symbols*
was for lack of a better word, "exhillarating" to read. Jung
incorporates metaphor into his discussion on the nature of
man. The development of consciousness could almost be
seen as a "fall from grace" My point is that the information
I was learning was not dry, stale data to be presented and
forgotten; it was important discourse to remember and
think about. Some of the students who tested the stack
became very excited, and interested in the many ways
metaphor is used. Judging from their enthusiasm, the
stack was successful in encouraging students to get
excited and involved with the application.

Also, at some point it became apparent to me how
relevant an interactive media platform is for researching,
incorporating and presenting metaphor. The manner in
which information is utilized, presented and then processed
in Hypercard is similar to the way metaphor works.
Metaphor makes connections/associations by representing
or alluding, or directing one's attention to something else.
(e.g. "The *man* is a *lion*.") Also, the interactive-media platform
(on a Macintosh) uses metaphors to facilitate it's use by
the user. (i.e. "desktop", "trash", "folders", "buttons", etc.)
The Hypercard stack, then, is presenting information about
metaphor through a metaphoric process and a metaphoric
state. The user perceives Hypercard as a set of "index
cards", or a "computer program". The process of going
through the stack is metaphorical for the way learning
occurs, how language works and how metaphor works.
This foundation of hidden metaphoric understanding eased
the process of creating and developing the final application.

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To reiterate my formal objectives:

1) assist students in beginning to understand and recongnize metaphor
2) demonstrate how metaphors are used and ways of analyzing their use
3) educate students about the multi-disciplinary use of metaphor

The application does assist students in beginning to under-
stand and recognize metaphor, by definitions and examples.
The stack was divided into several sections which dealt
specifically with psychology, philosophy, graphic design and
synectics, and their theories and applications of metaphor.
Introducing students to these different fields of study in the
Hypercard application was successful to a point. Students
agreed they had learned something of how the fields of
philosophy, psychology, synectics and graphic design use
metaphor both in theory and application. However, some
stated that they did not feel the information was presented
in a manner that was easily accessible. Many students
passed over information that appeared too wordy, or dense.

In future attempts, I would make a conscious effort to
simplify the presentation of the theory and concepts in the
disciplines to facilitate accesibility. This would not mean a
simplification of the theories, but a restructuring of the order
and manner the information is displayed. I had recognized
that Hypercard afforded a manner in which students could
interact and participate with the application. However, I did
not take full advantage of the ways that Hypercard allows
this interaction to occur. For example, where there are
large text blocks, or scrolling fields, the text could have
been distributed over several cards, reduced, or placed in
hidden fields (only revealed, perhaps, if the user clicked on
the screen to view it).

I believe I have fulfilled the first objective (listed above). The
stack lists definitions and articles that educate students and
increase their awareness of the different uses of metaphor.
Student response to the stack has also been mostly positive.
Most answers were in the 'I agree' category. I have printed
out the evaluation field, and placed it in appendix G.

Another aspect of the evaluation is located in the
Reminiscing part of the stack as described on page 23.
This part is a brief evaluation form of five questions that
ask the user to respond to whether or not the stack met my
objectives. The results of the evaluations are then stored in a

hidden field, where it will grow to comprise a sizeable data base of completed evaluations. The evaluations include the name of the student, year of school, and responses to the five questions listed in appendix F (ranging from an answer of strongly agreeing to strongly disagreeing.) Over twenty-two students completed the evaluation. They ranged from freshmen to graduate students. Thirteen of the twenty-two students were graphic design majors.

Interactive applications can be tested as they are created. People testing the stack verbalize their internal processes as they use the interface; this is known as a Talk-Aloud-Protocol. By observing how people interacted with the stack, and verbalized their difficulties, I was able to determine areas of weakness. For example, several discoveries resulted from the Talk-Aloud-Protocols. One of the things that needed to be changed were the small arrows used with the directional buttons along the bottom of the screen. The arrows were originally ornamental elements. However, many people tried to click on these arrows to continue, rather than the intended location. Also, the ambiguity of the travel process as a metaphor for the creative process was evidenced after people stated their confusion.

Overall, the response to the stack was positive. There was hardly any difficulty navigating the stack, and students quickly grasped that the contents card was the central navigation point. Also, the frequency of student response increased when I specifically asked each student to do so. The comments were helpful as they reinforced many of the comments received during the Talk-Aloud-Protocols, such as reducing the size of text blocks, and increasing the point size of the text to increase legibility.

Conclusion

A structure became apparent to me during the process
of this project. Each of the fields contributed to an aspect
of how metaphor is used. I presented this information in
the application within each of the sections. For example:
Synectics provided the user with an example of how
to approach and solve problems with metaphor. The
psychology part of the Process section presented ways
in which people cognitively process and understand
metaphor. The philosophy section demonstrated how
metaphor can be misunderstood or used incorrectly.

In the application I attempted to convey this information
so as to increase the awareness of designers about the
application and theory of metaphor. I also attempted to
illustrate how metaphor can be used in a Hypercard
application by representing the creative process with
the process of going on a vacation.

By researching other fields of study, I have observed
that metaphor can increase the speed and accuracy of
communication. It can also confuse and disorient.
Whenever designers create a graphic image such as an
identity-mark, they are creating a metaphor that represents
someone or something. Designers must take care that the
metaphor is chosen carefully and that it communicates the
designer's objectives appropriately and effectively.

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Appendix A

Thesis Proposal

Thesis Proposal

Cross-Disciplinary Use of Metaphor
College of Imaging Arts and Sciences
Rochester Institute of Technology

Jeff Arbegast
Rochester, New York
November, 1992

Project Title

Client and Address

Designer Address

Problem Statement

Cross-Disciplinary
use of Metaphor

Graphic designers
R.I.T. archive (possibly)
shareware (possibly)

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Fairport, NY 14450

The thesis will develop a methodology
for examining cross-disciplinary usage
of metaphor through an interactive-
media program that will demonstrate
the value of metaphor for problem solv-
ing in design; use of metaphor in my-
thology, philosophy, and interactive-
media will be researched and shown
how it can apply to graphic design.

■ This thesis will assist designers in improving the quality of graphic communications by providing an interactive interface to aid in recognizing, clarifying and implementing metaphors in the design process.

■ Initial Assumptions:

- Graphic Design currently implements certain brainstorming techniques (i.e. mind map ping, lists, flow-charting, etc.

- Use of metaphor is currently widely used and accepted in Literature (poetry), Philosophy and Mythology as a means of comparison, expression and creativity.

- Using metaphors, as demonstrated in other disciplines, can be a valid method of problem solving in graphic media for dynamic and innovative ideas.

■ Importance of Study:

- The direction and use of metaphors is readily apparent in Literature as seen in poetry. Metaphors create unique experiences and images in the readers/listener's mind. It is also used in Mythology and Religion as "poetic truth". The connection need not be literal, but figurative.

- Designers need to incorporate metaphorical thinking in the creative process. By carefully designing in a metaphorical manner, the imagery discovered will have tremendous impact and depth of meaning. The audience will be able to make conscious/subconscious connections with the image or text that will convey information on a deeper level of understanding.

Goals   **Objectives**   **Strategies**

■ To explore the purpose, value and nature of metaphor through contemporary,historical and cross-disciplinary research.

    ■ 1. To aquire information through literary research.
       2. To observe and contemplate existing data on metaphors.

        ■ 1. (a) To gather books, magazines, images (research) regarding metaphors.
            (b) To familiarize myself with construction, recognition, and use of metaphor
            (c) To interview authors, professors, experts in fields involving metaphor
         2. (a) To examine the connections of metaphor between disciplines.
            (b) To analyze exisIing uses of metaphor and see how they can be used in methodology.
            (c) To separate valuable research from chaffe.

■ To analyze research and to integrate material and learning into an interactive learning tool.

    ■ 1. To identity valuable research
       2. To create methodology foundation for interactive program

        ■ 1. (a) To discern the particular properties of successful metaphor usage.
            (b) To provide examples of successful, alternate uses of metaphor
            (c) To compare cross-disciplinary applications of metaphor and note (dis)similarities.
         2. (a) To design the flow and logic for methodology.
            (b) To assemble interactive program as medium for presentation of methodology.
            (c) To incorporate imagery, video, research, etc. into application

■ To assist users in defining a metaphor that is appropriate to any given problem.

    ■ 1. To provide necessary vocabulary for understanding metaphors
       2. To present possible presentation methods for metaphor solutions

        ■ 1. (a) To provide vocabulary to understand and explain metaphorical solution
            (b) To illustrate possible uses of metaphor in design
            (c) To explain use of metaphor and to define metaphor and possIble Interpretations of metaphor
         2. (a) To design interaction that provides a source for using existing methodologies.
            (b) To use metaphors as tool for evoking definIng qualities for design solutions
            (c) To create reference for finding historical and contemporary metaphor resources

■ To help users develop and achieve communications objectives through metaphors via the interactive methodology.

    ■ 1. To facilitate use of application by designers
       2. To create methodology to help designers use metaphors

        ■ 1. (a) To incorporate research into system design to design easily usable application
            (b) To utilize Hypercard, MacroMind and QuickTime in application as learning aids
            (c) To assist users with vocabulary and basic user-skills for application
         2. (a) To build methodology based on existing uses of metaphor
            (b) To use design theory and research to create methodology
            (c) To access cross-disciplinary data to integrate in methodology.

■ To evaluate the direction and success of the thesis and progress towards a final application based on the evaluation.

    ■ 1. To evaluate progress and success of thesis
       2. To discern areas that need improvement and correction

        ■ 1. (a) To make use of a microphone and camera to record responses of 'testers'
            (b) To contact committee members and evaluate thesis work
         2. (a) To watch subjects testing application and adjust work in areas of trouble
            (b) To record results of evaluations and identify patterns of difficulty

Dissemination

Pragmatics

■ The thesis will evolve into a Hypercard application that will be displayed on a Macintosh computer. The final application will be viewed by the thesis committee. No other distribution is currently planned.

■ Budget

Syquest Cartridges (2)	$140.00
Laser Paper (Hammermill)	$ 15.00
Disks (high density)	$ 10.00
Manuals (Hypercard)	$ 45.00
Copying Costs (Color)	$ 30.00
Papers	$ 25.00
Travel Expenses	$200.00
Art Supplies	$100.00
Miscellaneous	$200.00
Total	$765.00

■ Resources

Facilities, faculty and fellow students at the following colleges and universities:

University of Rochester
Prof. Turbayne

Rochester Institute of Technology
Prof. Remington
Prof. Beardsley
Prof. Goodman
Prof. Engstrom

Nazareth College of Rochester
Prof. Donlin-Smith
Dr. Pestino

I will be making use of the Graduate Studio at R.I.T., implementing the computer facilities available within.

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    by Apple Computer, Inc.
    Addison-Wesley Publishing Company, Inc. Massachusettes 1989

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    by Charles Colbert
    Pendaya Publications Inc., 510 Woodvine Ave. Metairie, Louisiana 1987

The Inner Reaches of Outer Space: Metaphor as Myth and as Religion
    by Joseph Campbell
    Harper and Row, Publishers, New York 1988

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Metaphor and Religious Language
    by Janet Martin Soskice
    Call Number: P301.M48 S6   1987

Metaphors We Live By,
    by George Lakoff and Mark Johnson
    Call Number: P106.L235

Metaphors of Evil
    by Bosmajian
    Call Number: PT405.B625

Mind Design
    by John Haugeland, editor
    Call Number: Q335.5 .M49

Myths of the Hindus and Buddhists
    by Coomaraswamy and Sister Nivedita
    Dover Publications, Inc., New York

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    by Ulli Bier (editor)
    Heinemann Educational Books Ltd, 22 Bedford Square, London WC1B 3HH
    P.M.B. 5205, Ibadan · P.O. Box 45314, Nairobi
    (Made and printed in Great Britain by The Chaucer Press, Suffolk, 1986

Physical Anthropology and Archeology
    by Clifford J. Jolly and Fred Plog
    Alfred A. Knopf, New York 1987

Planning for industry, art & education
    by Pieter Brattinga
    Call Number: NK1510.B776   1970

The Principles of Pattern
    by Richard M. Proctor
    Call Number: NK1505.P7   1969

The Prose Edda of Snorri Sturluson
    by Jean I. Young (editor)
    University of California Press, Berkeley, Los Angeles, London

The Role of Analogy, Model and Metaphor in Science
    by Leatherdale
    Call Number: Q175.L334

Visual Awareness and Design
    by Philip Thiel
    Call Number: NK1510. T49

Visual Metaphors
    by Evelyn Payne Hatcher
    Call Number: E99.N3 H353 1974

World Mythology (Larousse)
    by Pierre Grimal (editor)
    Call Number: Over BL311. L3713   1973

Accident A universal relation implied when something is attributed to a species as that which belongs contingently to that species and to the individuals of that species.

Acheulean tradition the tool-making tradition associated with the hand-axe technology; more broadly, the term "Acheulean" is used for the culture of human populations in the areas where this tool-making tradition flourished.

Adaption the process of adjustment of a species to a specific environment, or a particular trait that makes a species more suited to and successful in its environment.

Answer (Hypercard) command brings up the Macintosh's Standard GetFile dialog so that you can select the name of a file. Optionally, the script can specify a filter so only the names of files of a particular type (applications, stacks, textfiles, etc.) are displayed.

Archeology the study of culture and of the processes of cultural evolution, using the material remains of societies.

Ask (Hypercard) command puts up a dialog box with a one-line question at the top, an optional preset answer selected in a typeable text window, and two window, and two buttons-one labeled "Cancel" and one labeled "OK"

ClickChunk (Hypercard) function returns the positions of the starting and ending of the word or group most recently clicked in a locked field.

ClickLine (Hypercard) function returns the location of the most recently clicked in a locked field.

ClickLoc (Hypercard) function returns the location of the most recent mouse click.

CloseCard (Hypercard) is the system message that HyperCard sends when you leave a card because of a go command, Quit HyperCard menu choice, or because a stack was deleted.

Cultural anthropology the study of variations among human cultures of the present and the recent past

Culture the system of shared meanings that people learn from their society for use in interacting with their surroundings, communicating with others, and coping with their world.

Debug (Hypercard) command (1) modifies the Compact Stack menu command such that the user can modify the effectiveness and efficiency of the find command by changing the way that HyperCard stores compressed information about the textual content of cards; (2) makes HyperCard use QuickDraw instead of its own drawing routines when it moves graphical information from an internal buffer onto the screen in order to overcome problems sometimes associated with third party monitors; and (3) temporarily halts execution of the handler containing this command and enters the Debugger with this command boxed.

Genus a relation of universality in virtue of which something one can be said of many that differ specifically

Get (Hypercard) command puts the value of any source or expression into the variable It.

Global (Hypercard) keyword creates one or more global variables, or imports values for existing ones.

Hilite (Hypercard) property reflects whether a button appears normal (false) or hilited (true) under a variety of conditions.

Icon (Hypercard) reflects what icon (if any) HyperCard uses as the graphic for a particular button.

Language (Hypercard) property reflects the language in which you read and write scripts.

Linguistic anthropology the study of the structure, use, and development of human languages.

Logograph a sign or picture that represents a word

Phoneme a basic unit of spoken sound

Physical anthropology the study of the biological evolution of Homo sapiens and of physical variations in contemporary human populations.

Picture (Hypercard) command (actually an XCMD) displays a black and white or color PICT or MacPaint image up to 32-bits in its own window.

Play (Hypercard) command sends one or a series of digitized sounds to the Macintosh speaker (or to the sound port if anything if plugged into it), or terminates playing sound.

Property a relation of universality in virtue of which something is said of a species as belonging only, necessarily, and always to that species and to every individual of that species.

Glossary

Ritual   religious ceremonies involving symbolic actions and objects.

Science   a precise and systematic understanding of the natural world and the operation of cause and effect in it

Species   a relation of universality in virtue of which something one can be said of many that differ only in number

Specific Difference   a relation of universality in virtue of which something is predicated in a way that sets one thing apart from another, not just as distinct in number but as different in kind.

Startup   (Hypercard) is the system message that HyperCard sends when the Hypercard application opens.

Syllabic writing use of pictures to represent segments of words or ideas

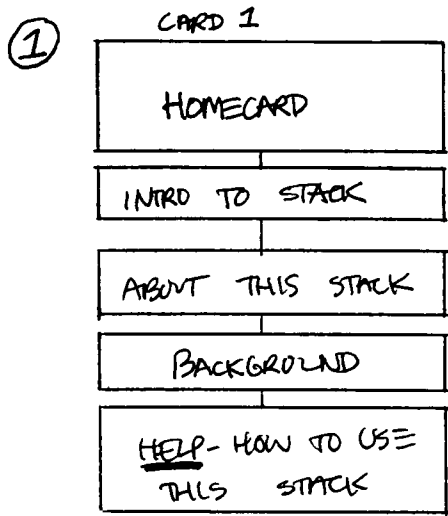**Technology**   human tools and knowledge of how to use them
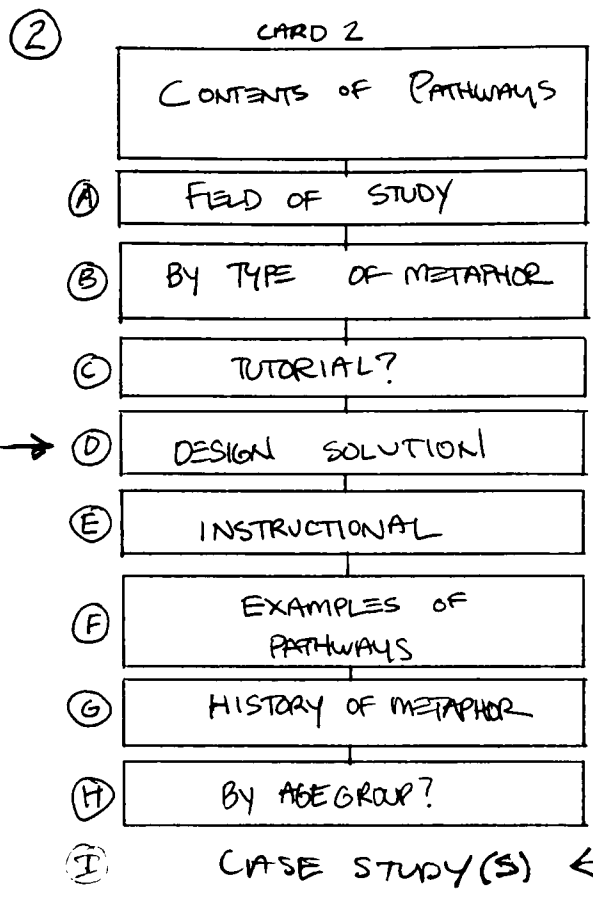
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Appendix B

Flow (maps, flow-charting,etc.)

① CARD 1

- HOMECARD
- INTRO TO STACK
- ABOUT THIS STACK
- BACKGROUND
- HELP- HOW TO USE THIS STACK

FIRST CARD SEEN WHEN PROGRAM STARTS - INTRODUCES STACK

② CARD 2

- CONTENTS OF PATHWAYS
- Ⓐ FIELD OF STUDY
- Ⓑ BY TYPE OF METAPHOR
- Ⓒ TUTORIAL?
- → Ⓓ DESIGN SOLUTION
- Ⓔ INSTRUCTIONAL
- Ⓕ EXAMPLES OF PATHWAYS
- Ⓖ HISTORY OF METAPHOR
- Ⓗ BY AGE GROUP? ✱
- Ⓘ CASE STUDY(S) ←

THIS CARD WILL LIST THE VARIOUS METHODS/PATHS THAT THE USER WILL BE ABLE TO NAVIGATE THROUGH THIS STACK.

②Ⓐ

- FIELDS OF STUDY
- Ⓐ1 GRAPHIC DESIGN
- Ⓐ2 PSYCHOLOGY
- Ⓐ3 PHILOSOPHY
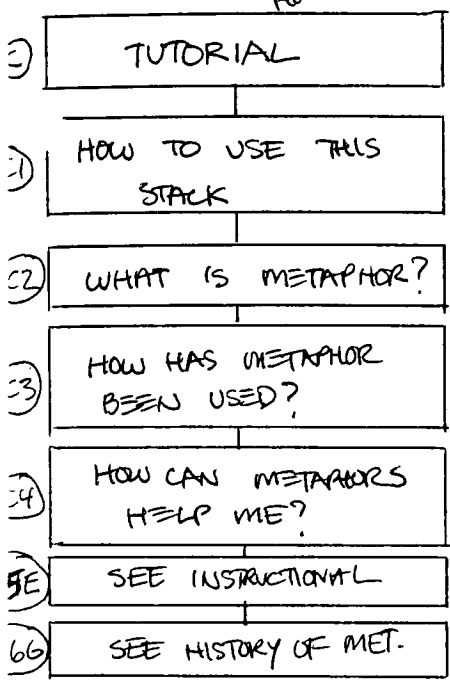- Ⓐ4 ENGLISH LITERATURE
- Ⓐ5 BUSINESS
- Ⓐ6 SYSTEM DESIGN
- Ⓐ7 CREATIVITY IN GENERAL
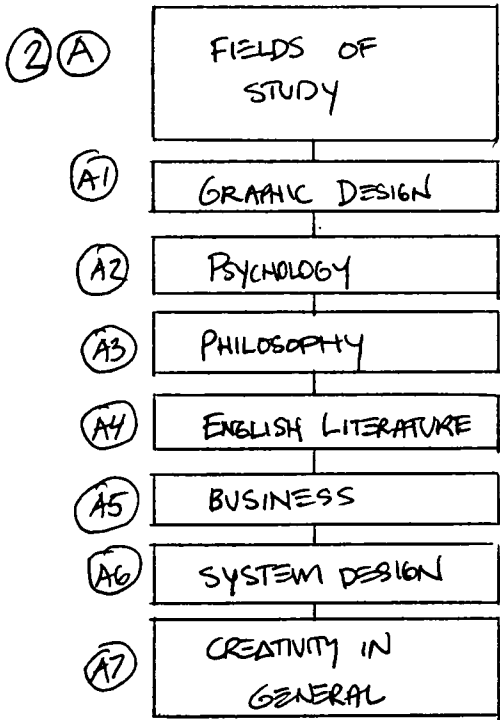
THIS CARD WILL PRESENT A METHOD OF NAVIGATING THE STACK BY FIELD OF STUDY? (IT ISOLATES INFO BASED ON FIELDS/RELATED FIELDS)

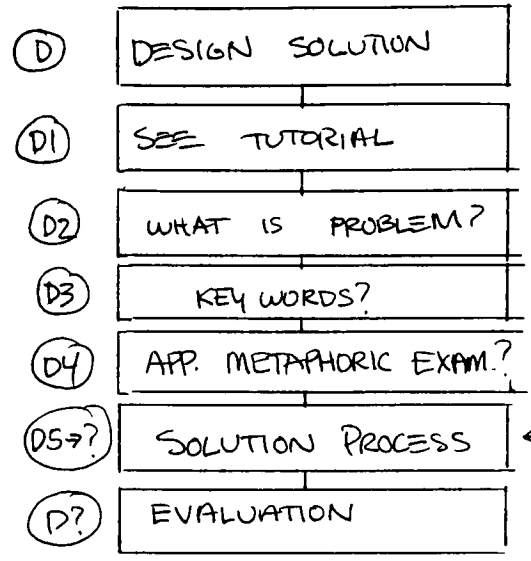**Ⓑ**

- BY TYPE OF METAPHOR
- Ⓑ1
- Ⓑ2
- Ⓑ3
- Ⓑ4
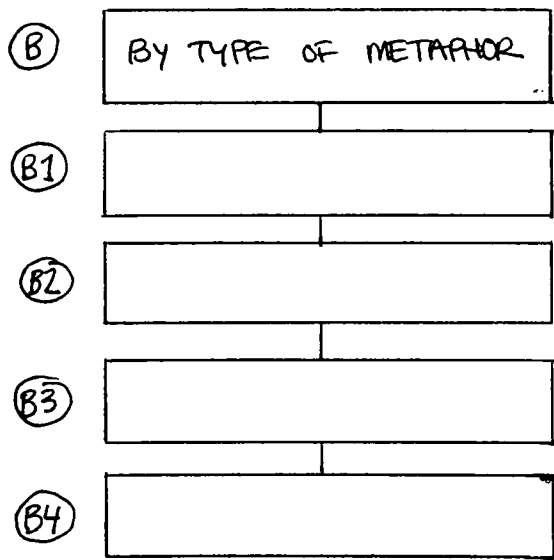
Ⓐ THIS CARD STACK WILL PRESENT TYPES OF METAPHOR BASED ON COG. PSYCH STUDIES AND OTHER TYPES OF METAPHORS WITHIN THOSE GROUPS.
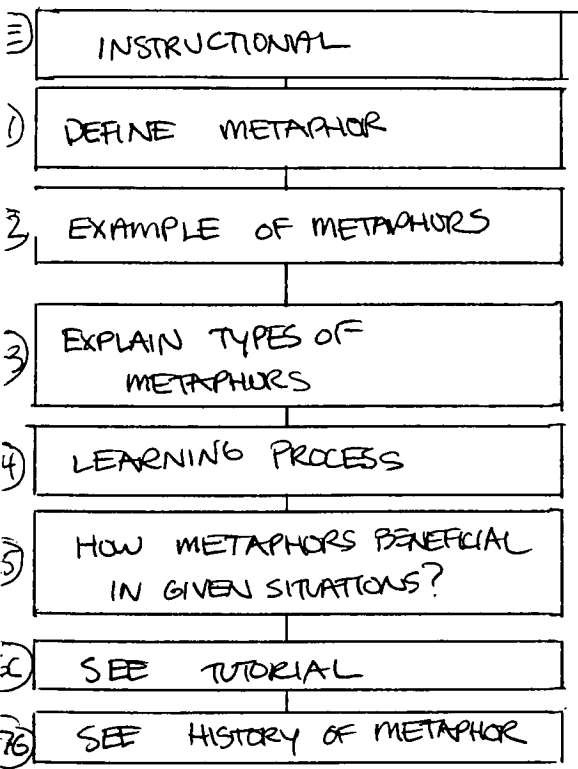
Ⓑ NAVIGATE BY TYPE OF METAPHOR

E) | TUTORIAL |

1) | HOW TO USE THIS STACK |

FOCUS ON HOW TO USE STACK

C2) | WHAT IS METAPHOR? |

C3) | HOW HAS METAPHOR BEEN USED? |

C4) | HOW CAN METAPHORS HELP ME? |

5E) | SEE INSTRUCTIONAL |

6G) | SEE HISTORY OF MET. |

D) | DESIGN SOLUTION |

D1) | SEE TUTORIAL |

THIS IS THE MAIN THRUST OF THE STACK AS STATED IN MY THESIS PROPOSAL.

D2) | WHAT IS PROBLEM? |

D3) | KEY WORDS? |

D4) | APP. METAPHORIC EXAM.? |

D5→?) | SOLUTION PROCESS | ←

D?) | EVALUATION |

E) | INSTRUCTIONAL |

1) | DEFINE METAPHOR |

2) | EXAMPLE OF METAPHORS |

FOCUS ON WHAT IS METAPHOR? (CONTEMPORARY)

3) | EXPLAIN TYPES OF METAPHORS |

4) | LEARNING PROCESS |

5) | HOW METAPHORS BENEFICIAL IN GIVEN SITUATIONS? |

C) | SEE TUTORIAL |

7G) | SEE HISTORY OF METAPHOR |

INSTRUCTIONAL IS DIFFERENT THAN TUTORIAL AS IT FOCUSES ON THE EXPLAINING OF WHAT IS METAPHOR? ~~.....~~ WILL BE? ETC.?

F) | EXAMPLES OF PATHWAYS |

F1) | DIAGRAMS OF POSSIBLE PATHS THROUGH STACK. (SEVERAL) |

F2C) | SEE TUTORIAL |
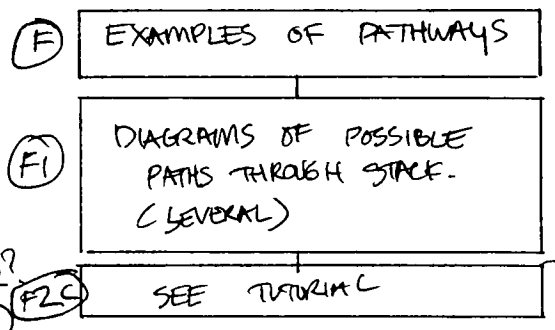
THIS SECTION WILL PRESENT IN DIAGRAM FORM THE VARIOUS POSSIBLE WAYS OF NAVIGATING THIS STACK

G) | HISTORY OF METAPHOR |

G1A) | BY FIELD |

G2E) | SEE INSTRUCTIONAL |

G3C) | SEE TUTORIAL |

G4B) | SEE BY TYPE OF METAPHOR |

G5) | TIME PERIODS |

G6) | 'DEFINITIONS' |
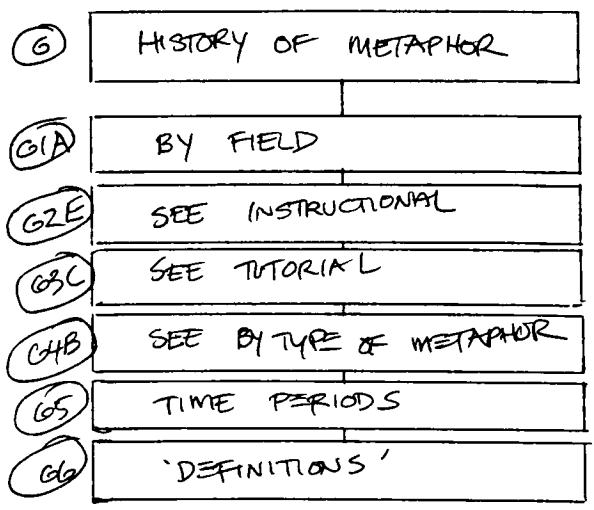
FOCUS ON HISTORICAL USES AND EXAMPLES OF METAPHOR

THIS SECTION WILL CLASSIFY, EXPLAIN, PRESENT, DEMONSTRATE VARIOUS HISTORICAL EXAMPLES OF METAPHOR

(H) BY AGE GROUP?

(1) BREAKDOWN BY
COG. PSYCH STUDIES
OR EASE OF
METAPHOR USAGE

(2)
(3)
(4)
(5)

(6)
(7)
(8)
(9)

POSSIBLE WAY OF
BREAKING STACK INTO
3 OR 4 AGE GROUPS
SUCH AS HIGH SCHOOL
COLLEGE, ADULT, CHILD,
ETC.

PIAGETS THEORIES,
PROBABLY DISCONTINUED FOR
THIS STACK BECAUSE AGES
TOO YOUNG

HIERARCHY OF AGES
— A GOOD POSSIBILITY AS NO
"AGE GROUP" DEFINED,
BUT ANY ACCESSIBILITY
TO THE USAGE OF METAPHORS.

METAPHORIC VEHICLE FOR HYPERCARD STACK/METHODOLOGY

- METAPHOR
- AUDENCE
- HYPERCARD SKELETON

POSSIBLE VEHICLES:

AIRPORT
AUTOMOBILE
COLLEGE ITSELF
CITY
FACTORY
PLAYING A GAME (FUNCTIONALITY → EMULATE A GAME)

AUDIENCE - ?

DEFINITELY STUDENTS, LET'S SAY AT R.I.T. UNDERGRAD → GRAD,
IT DOESN'T REALLY MATTER, BUT I'LL TARGET UNDERGRAD FOR PREVIOUSLY
STATED REASONS.

SO: R.I.T. UNDERGRADUATE STUDENTS → FIELD OF
PARTICULAR STUDY IS NOT NECESSARILY IMPORTANT
AS THE APPLICATION WILL TARGET SEVERAL OTHER
DISCIPLINES. A FURTHER BREAKDOWN OF AUDIENCE
WOULD COVER ONLY THE DISCIPLINES DISCUSSED IN
THESIS, (BUT THEN I WOULD BE EXCLUDING POTENTIAL
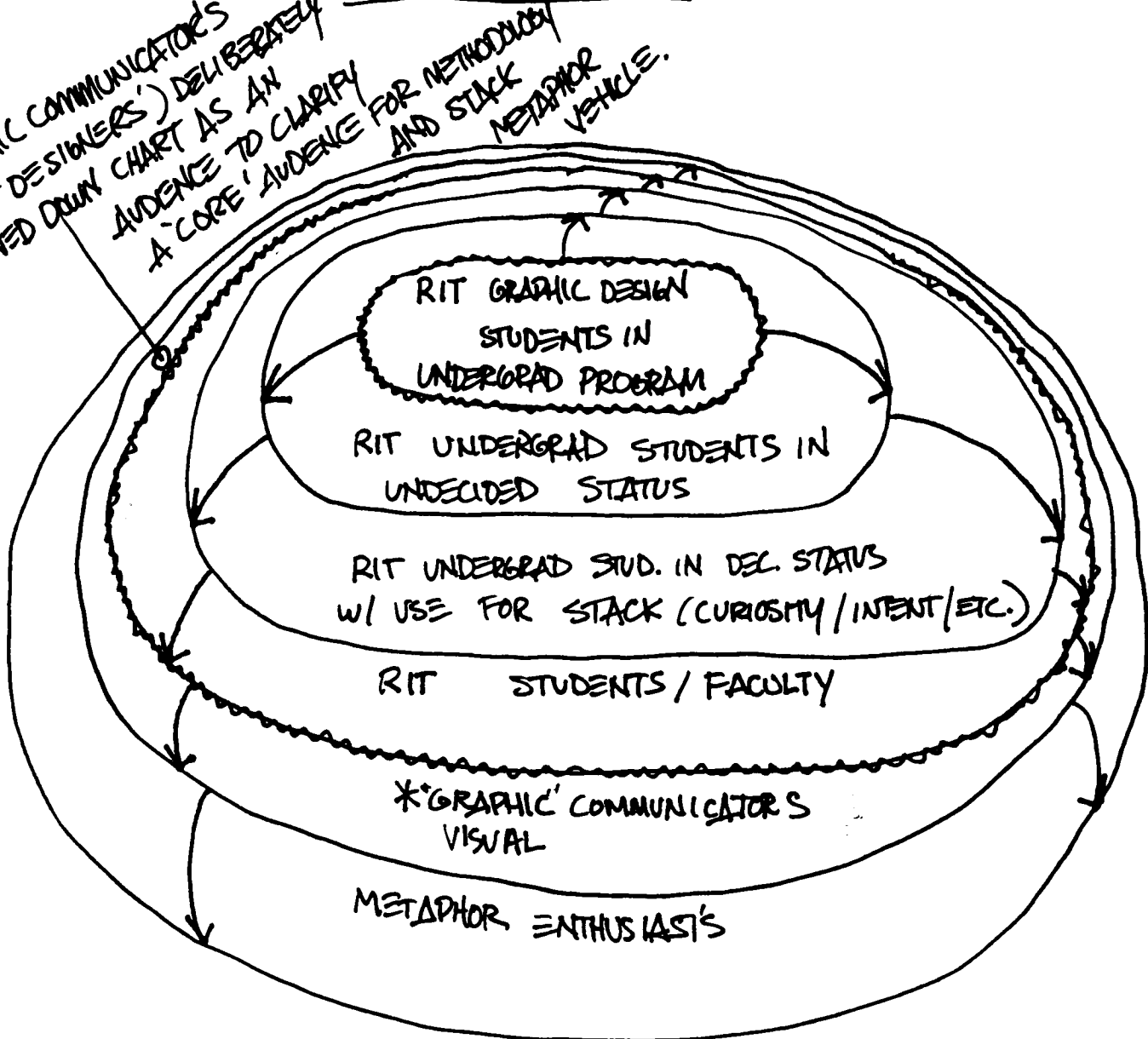AUDIENCE PARTICIPANTS) →

AUDIENCE (CONT.)

    SO FAR: R.I.T UNDERGRAD STUDENTS.

THE CORE OF THE APPLICATION WAS ORIGINALLY ENVISIONED FOR A DESIGN ORIENTED AUDIENCE. CAN APPLICATION TO ASSIST DESIGNERS TO LEARN ABOUT METAPHORS AS THEY ARE DEMONSTRATED IN OTHER DISCIPLINES, AND TO CREATE A METHODOLOGY THAT WOULD HOPEFULLY BREAK NEW GROUND IN SOME MANNER CONCERNING DESIGN + METAPHOR.

AUDIENCE CHART

* GRAPHIC COMMUNICATORS
(I.E. DESIGNERS') DELIBERATELY
MOVED DOWN CHART AS AN
AUDIENCE TO CLARIFY
A 'CORE' AUDIENCE FOR METHODOLOGY
AND STACK
METAPHOR
VEHICLE.

RIT GRAPHIC DESIGN STUDENTS IN UNDERGRAD PROGRAM

RIT UNDERGRAD STUDENTS IN UNDECIDED STATUS

RIT UNDERGRAD STUD. IN DEC. STATUS W/ USE FOR STACK (CURIOSITY / INTENT / ETC.)

RIT STUDENTS / FACULTY

* 'GRAPHIC' COMMUNICATORS VISUAL

METAPHOR ENTHUSIASTS

THIS DIAGRAM FIRMLY ESTABLISHES R.I.T. AS THE CORE AUDIENCE FOR THE PURPOSE OF THE METAPHORIC VEHICLE. THE STACK IS STILL INTENDED FOR DESIGNERS, AND WILL DEAL SPECIFICALLY WITH MANY DESIGN PROBLEMS / QUESTIONS / PRAGMATICS, ETC. ~ BUT WILL DEAL WITH THE FACT THAT R.I.T. WILL BE THE MOST LIKELY CANDIDATES TO USE THE STACK.

- AS SUCH, ANOTHER ASPECT OF THE STACK WILL BE THE INSTRUCTIONAL PORTION. STUDENTS WILL OBTAIN GLIMPSES OF SEVERAL OTHER DISCIPLINES. PERHAPS THESE GLIMPSES COULD ENDOW VALUABLE INSIGHTS INTO OTHER DISCIPLINES + ASSIST UNDECIDED STUDENTS. HOWEVER, THIS IS A POSSIBILITY. THE OPTIONS WILL BE AVAILABLE FOR THIS TO OCCUR, BUT THE DOMINANT FOCUS OF THE STACK WILL BE TO ASSIST GRAPHIC COMMUNICATORS (PRIMARILY @ R.I.T.) TO USE, UNDERSTAND AND EFFECTIVELY RECOGNIZE GOOD METAPHORS IN DESIGN SOLUTIONS.

POSSIBLE VEHICLES

CITY (URBAN = ROCHESTER / R.I.T CLOSE BY)

ITEMS ASS. w/ A CITY :

POST OFFICE	FACTORIES	SCHOOLS
POLICE	APPARTMENTS	THEATRES / CULTURE
CITY HALL	SUBURBS	HOSPITALS
GOVERNMENT	URBAN	CLUBS
LAWS	TRANSPORT SYSTEM	BARS
JUDICIAL PROCESS	GAS + ELECTRIC	BANKS
FIREMAN (DEPT.)	OFFICES	STADIUMS
	COMMERCIAL BUILDINGS	
	PROPERTY	CONSTRUCTION STORES
	PARKS	MARKET (FOOD)
	CEMETERIES	MARKET (FLEA)
	MALLS	MARKET (STOCK)
	FARMS	

↗ AIRPORT (FOR A TRIP)

PLANES
TICKET COUNTER
TAXIS
PARKING LOTS
SHUTTLE BUSES
RESTAURANTS
RESTROOMS
WAITING AREAS
RUNWAYS
LUGGAGE
CHECK IN COUNTER
ARRIVAL / DEPARTURE MONITOR
SECURITY

CONCESSION STANDS
NEWS STANDS
`TOWER' (RADIO)
WINGS
BAGGAGE CLAIM
NO SMOKING
PLATFORMS
LAY-OVERS
TRANSFER

NEED

MAP
MONEY
TICKETS
RESERVATIONS
SEAT (WINDOW?)
LUGGAGE
APP. CLOTHING
HOTEL RES.
DIRECTIONS
SOMEONE TO MEET YOU
TIME-OFF

* / AUTOMOBILE (DRIVING)

AGE
LICENCE
PHYS./LEG. VISION
ABILITY TO STICK? AUTOMATIC?
DRIVE
↓
KEY TYPE OF CAR?
↓
OPEN DOOR → KEY → IGNITION → CLUTCH → BRAKES → LIGHTS → RADIO → AIRCONDITIONING →
↑ SEATBELT
FIFTH   FOURTH   THIRD   SECOND   FIRST ← WHICH GEAR? ←
↑ CLUTCH ↑ CLUTCH ↑ CLUTCH ↑ CLUTCH ←
→ LIGHTS? (TRAFFIC) → (WHERE GOING?) → HOW LONG? → HOW FAR? → STEERING WHEEL
RAIN ← WIPER FLUID ← OIL ← SEATS ← ENGINE ← BRAKES
→ WIPERS → LIGHTS → TIRES → MIRRORS → AXLE → DASH → TRUNK
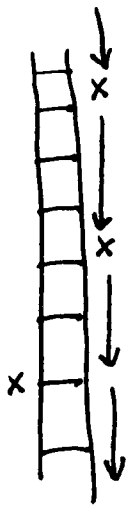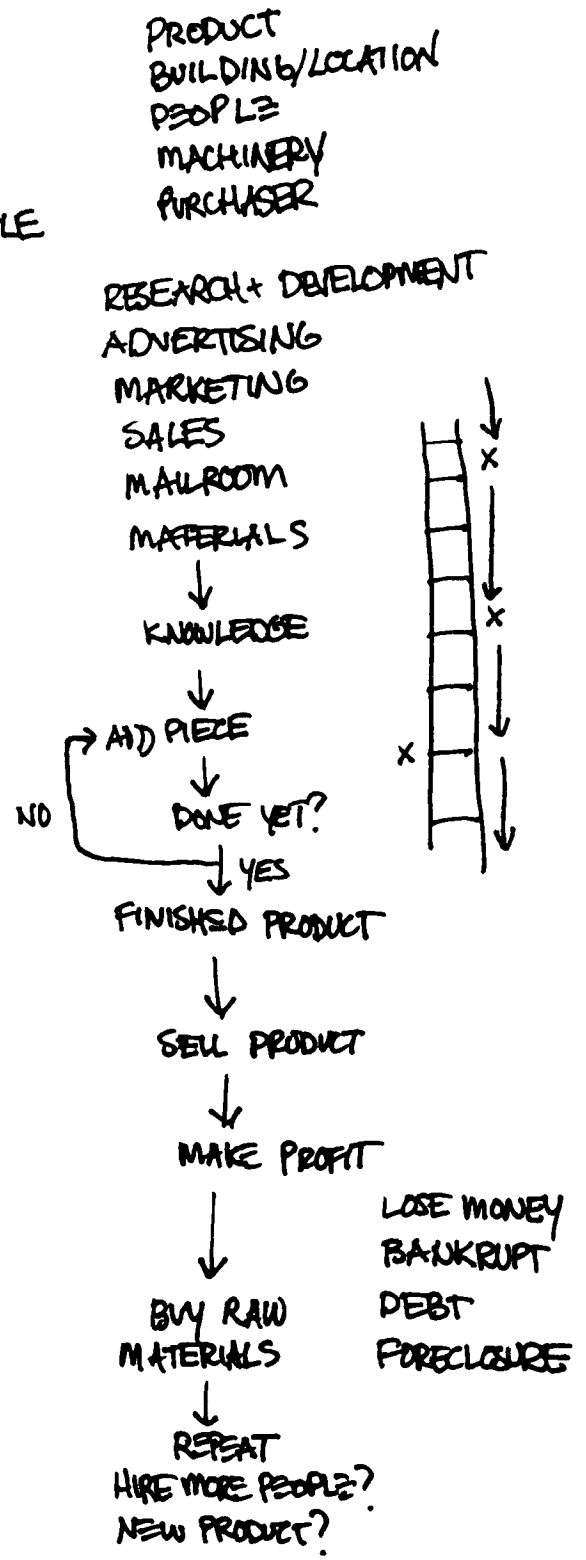
COLLEGE

HIGH SCHOOL
↓
GRADUATION
↓
DENIAL → ENROLLING / APPLYING
↓
ACCEPTANCE
↓
REGISTRATION
↓
PICKING COURSES
↓
DROP / ADD
↓
CHOOSE MAJOR
↓
UNDECIDED / DECIDED
↓
PASS / FAIL
↓
GRADES
↓
NEXT QUARTER
↓
NEXT YEAR
↓
GRADUATION
↓
GET JOB
↓
GET A LIFE
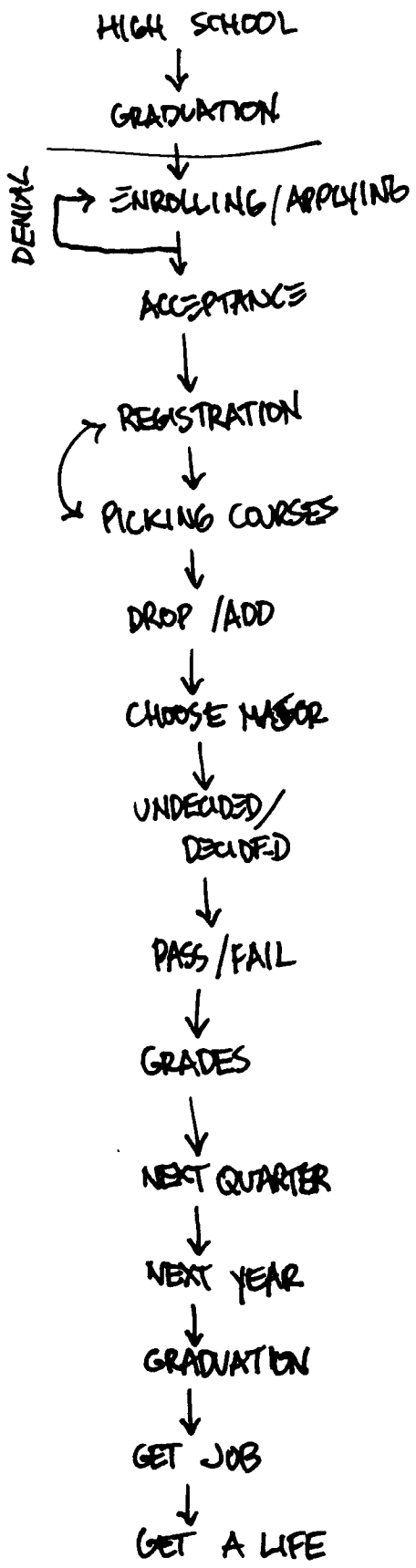
HOMEWORK
ASSIGNMENTS
BUY BOOKS
MOVE INTO DORM
PARTY
MEET NEW PEOPLE
LEARN

PLACES:
LIBRARY
REGISTRAR
BURSAR
BOOKSTORE
ART DEPT.
LIBERAL ARTS
ENGINEERING
BUSINESS
SCIENCE
HISTORY
DORMS
RINK / GYM
CLASSES
CAFETERIA
PARKING LOTS
FIELDS

FACTORY

PRODUCT
BUILDING / LOCATION
PEOPLE
MACHINERY
PURCHASER

RESEARCH + DEVELOPMENT
ADVERTISING
MARKETING
SALES
MAILROOM
MATERIALS
↓
KNOWLEDGE
↓
ADD PIECE
↓
NO → DONE YET?
↓ YES
FINISHED PRODUCT
↓
SELL PRODUCT
↓
MAKE PROFIT
↓
BUY RAW MATERIALS
↓
REPEAT
HIRE MORE PEOPLE?
NEW PRODUCT?

LOSE MONEY
BANKRUPT
DEBT
FORECLOSURE

PROJECT ENVIRONMENTS
(BUSINESS)

"CONSULTING PROCESS"

1. IDENTIFY NEED

2. PLAN PROJECT

3. COLLECT FACTS

4. ANALYZE DATA

5. DEVELOP ALTERNATIVES

6. PRESENT RECOMMENDATIONS

SYNECTICS (WILLIAM GORDON)
- formal classification for the way METAPHORIC MIND might function
- leave linear thinking & explore divergent thinking

SERIES OF ANALOGIC THOUGHT PATTERNS

I. DIRECT - DIRECT COMPARISON
EX: CLOUDS + COTTON

II. PERSONAL - PHYSICALLY BECOME A PART OF
EX: DANCING LIKE A TREE

III. SYMBOLIC - USE OF SYMBOL SUBSTITUTION
EX: FEMA

IV. FANTASY - WISH FULFILLMENT, ROLE-PLAYING
EX: ROLE PLAYING

ADULT	CHILDREN
PROGRAMMED SOLUTIONS	CREATIVE SOLUTIONS
'EXPERIENCE'	'FRESH'
SOLUTION HABITS ↓	
EXPERTS 'DEEPEST RUTS OF SOLUTION HABITS'	NO HABITS 'EACH CHILDREN TACKLE EACH PROBLEM TOTALLY FRESH'

JEAN PIAGET

① SENSORI MOTOR   BIRTH → 2 YEARS
      NO ABSTRACT THINKING

② PREOPERATIONAL   2 → 5 YEARS
      ABS. THINKING, PER. VIEW OF WORLD

③ CONCRETE OPERATIONAL   5 → 12 YEARS
      ABS. LOGICAL THINKERS

④ FORMAL OPERATIONS   12 YEARS → ON
      2 OR MORE ABS. SIMUL.

COGNITIVE PSYCHE

HIERARCHY OF ACCESS

I. SYMBOLIC METAPHORIC MODE

  ▪ ABSTRACT - LEFT HEMISPHERE
          KATAKANA - JAPANESE ABS. VIS. SYM.

    VISUAL - RIGHT HEMISPHERE
          KANJI - JAP. COUNTERPART. TO CHINESE
                        VISUAL LANGUAGE

II. SYNERGIC-COMPARATIVE METAPHORIC MODE
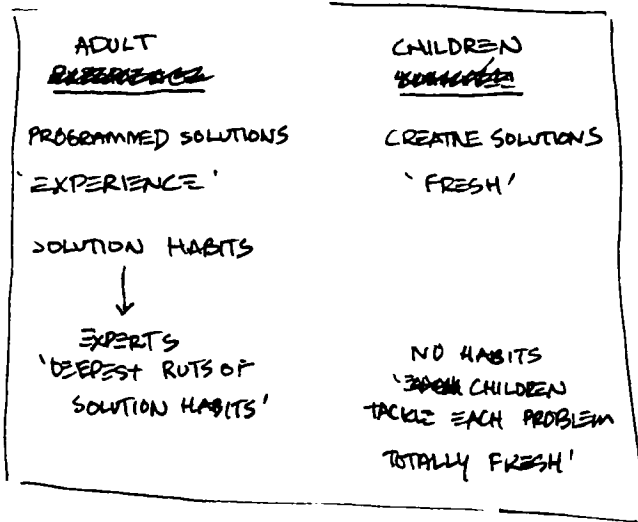
    SYNERGY WITH EXTERNALITY
          -EX. VW 'BUG'
          insectness vs. automobileness

III. INTEGRATIVE METAPHORIC MODE
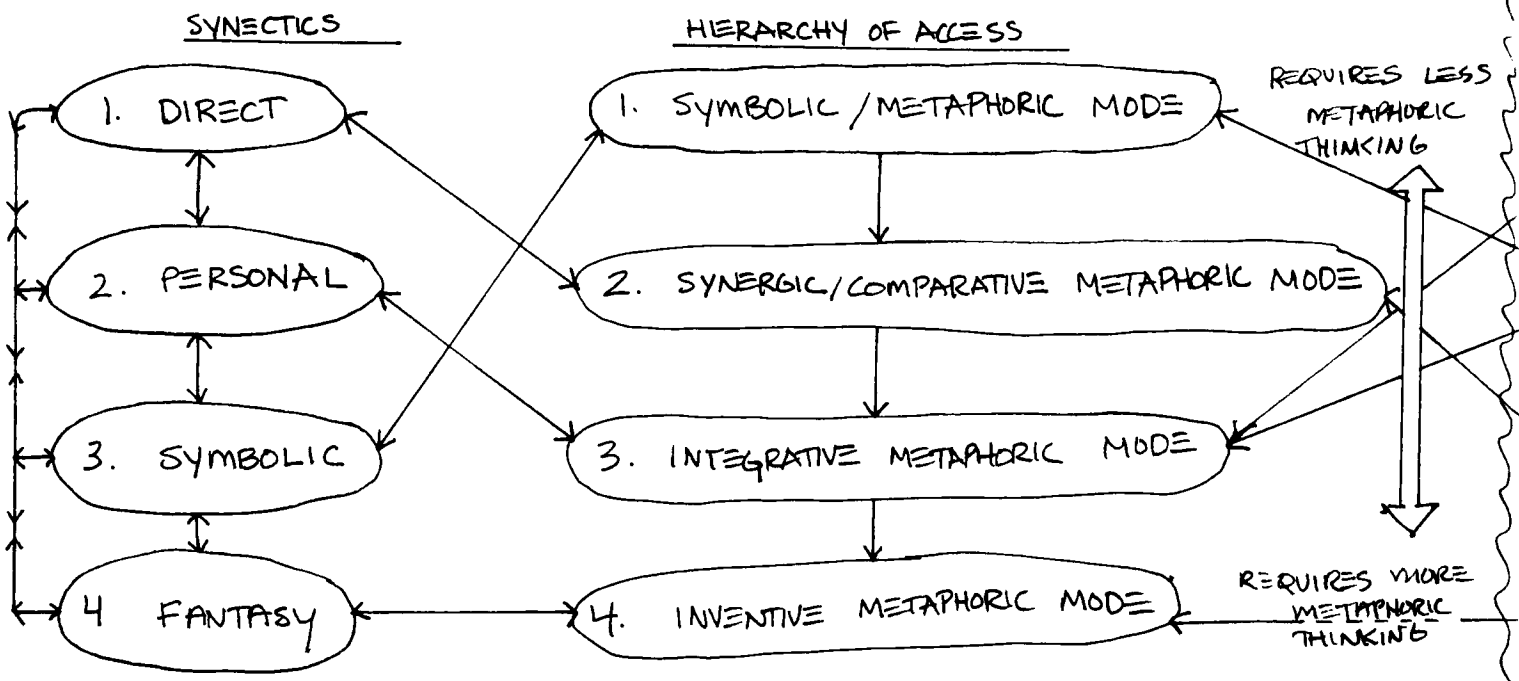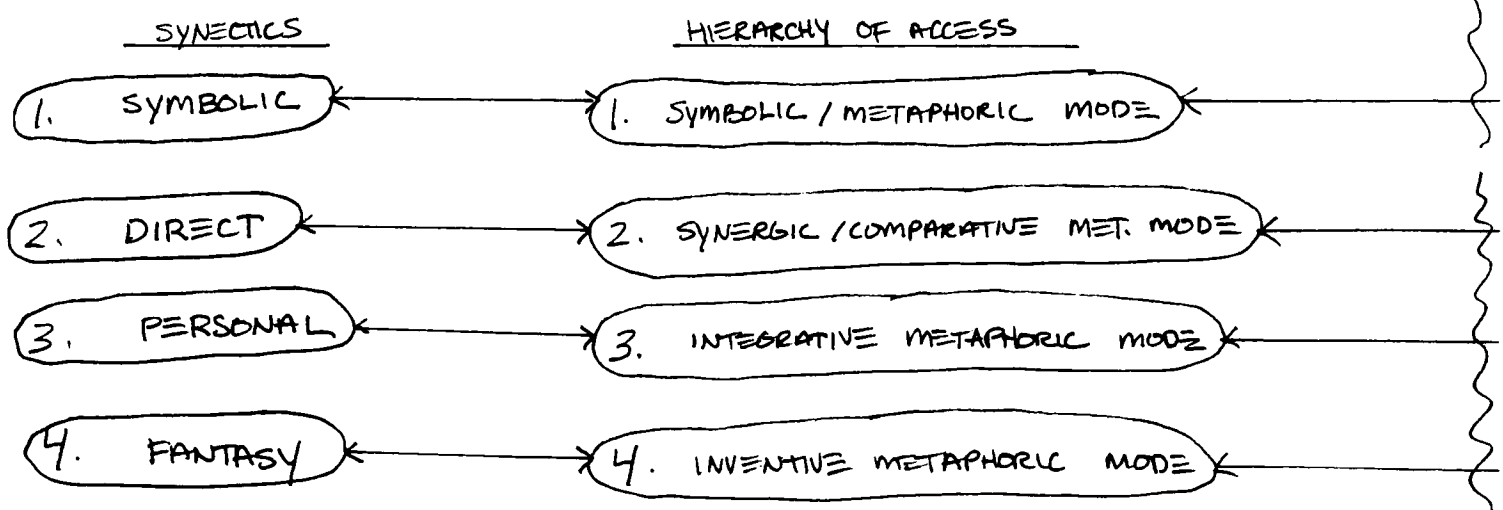   INTERNAL EXP.

IV. INVENTIVE METAPHORIC MODE
          CREATES - INVENTION

1 RELATIONSHIP CHART

SYNECTICS

HIERARCHY OF ACCESS

1. DIRECT

2. PERSONAL

3. SYMBOLIC

4 FANTASY

1. SYMBOLIC / METAPHORIC MODE

2. SYNERGIC/COMPARATIVE METAPHORIC MODE

3. INTEGRATIVE METAPHORIC MODE

4. INVENTIVE METAPHORIC MODE

REQUIRES LESS METAPHORIC THINKING

REQUIRES MORE METAPHORIC THINKING

1. ACCESS ALL LEVELS AT ANY TIME. – NO HIERARCHY (APPARENT)

1. EASE OF ACCESSIBILITY HIERARCHY FROM TOP TO BOTTOM (EASY → HARD)
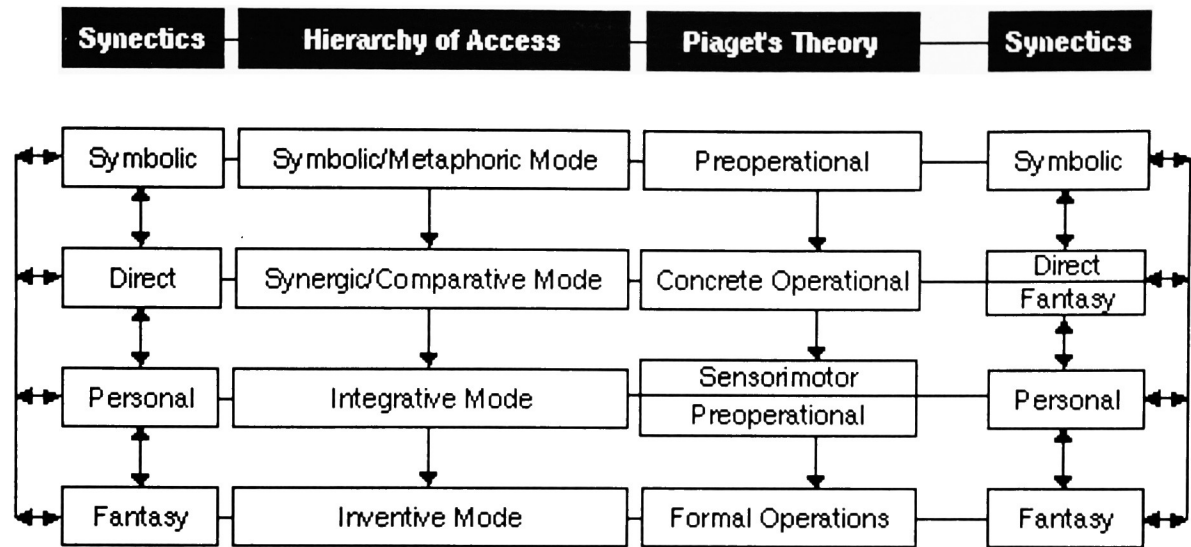
2 RESTRUCTURED CHART

SYNECTICS

HIERARCHY OF ACCESS

1. SYMBOLIC

2. DIRECT

3. PERSONAL

4. FANTASY

1. SYMBOLIC / METAPHORIC MODE

2. SYNERGIC / COMPARATIVE MET. MODE

3. INTEGRATIVE METAPHORIC MODE

4. INVENTIVE METAPHORIC MODE

⚹ THIS WOULD IMPLY
(A) THERE IS A HIDDEN LEVEL OF ACCESS TO SYNECTICS.
– ACCESSIBLE THROUGH THE LAYERS SOCIETY.

1. Relationship Chart

Synectics	Hierarchy of Access	Piaget's Theory	Synectics
Direct	Symbolic/Metaphoric Mode	Sensorimotor	Direct
Personal	Synergic/Comparative Mode	Preoperational	Personal
Symbolic	Integrative Mode	Concrete Operational	Symbolic
Fantasy	Inventive Mode	Formal Operations	Fantasy
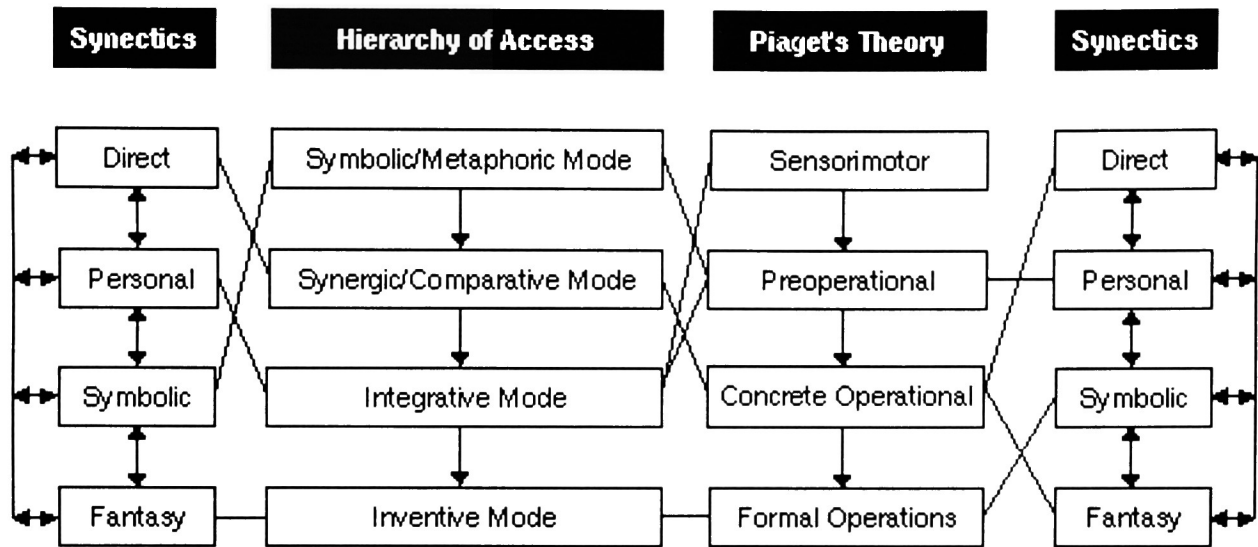
1. Relationship Chart (Organized by Similarity)

Synectics	Hierarchy of Access	Piaget's Theory	Synectics
Symbolic	Symbolic/Metaphoric Mode	Preoperational	Symbolic
Direct	Synergic/Comparative Mode	Concrete Operational	Direct Fantasy
Personal	Integrative Mode	Sensorimotor Preoperational	Personal
Fantasy	Inventive Mode	Formal Operations	Fantasy

DODGE VIPER → "The car is a Viper"

- VERBAL + VISUAL METAPHOR
  ① ICONIC - looks like eyes of a snake, curving vehicular body reminds one of the flowing, moving snake
  ③ SYMBOLIC - emotional reaction - sleek, speed, quietness, strength

(TOPIC) ⇒ CAR   (VEHICLE) ⇒ VIPER

WHAT IS BEING SAID?

SEMANTIC ASPECTS
AUTOMOBILE
QUICK
SPORTY
TRAIN STORAGE

SEMANTIC ASPECTS
SNAKE   SPEED
QUICK   DEADLY
SLEEK   POISONOUS
SCALY

TRANSFORMATIVE STATEMENT/INTERPRETATION:

"THE CAR HUGS THE GROUND"   "THE CAR IS ~~SNAKE~~ SCALY, (REPTILE)" "THE CAR IS QUICK"

PSYCHOLOGICAL INTERPRETATION:

"THE CAR IS ~~BAD~~ VICIOUS"   STREAMLINED
INSTANTIATION OR CONCEPTUALIZATION:
    "THE CAR IS FLASHY" (THE LOOK)

VEHICLE FACETS (SEE ABOVE UNDER 'VIPER')

MAPPING OPERATORS - mental jumps... how do I think?

SYNECTICS: DIRECT: only slightly - "eyes", front of vehicle reminds me of boa constrictor
    → SYMBOLIC ------→
        +   (APPROPRIATE) VIPER = CAR
      FANTASY ------ → imagining the car is a viper

HIERARCHY OF ACCESS

    - INCORPORATES (SYMBOLIC / METAPHORIC) MODE
        CAR   VIPER IS SUBSTITUTED
          ↖   MAKES LEAP BETWEEN
        ABSTRACT AND VISUAL.
    - '' (SYNECTIC/COMPARATIVE)
        "DODGE VIPER"
    AUTOMOBILENESS → SNAKENESS

Jeff S. Arbegast
May 1993

Appendix C

Theories and Definitions

Graphic Design
Definitions

Acceptance - The first step in the problem solving process. Designer must agree to become engaged in the project.

Analysis - is the step in the problem solving process in which the designer reviews information and materials, with respect to their nature, proportion, function, interrelationship, etc. Analysis of data is important prior to problem definition.

Application - Application refers to the process and form directed to a graphic design image made for a specific purpose. A poster is an example of an application in graphic design.

Code - is everything. Everything is coded in that it conveys meaning. We express things indirectly through signifiers (codes). We go through life trying to uncode things.

Concept - The idea which supports a design image and provides direction for development and functioning.

Evaluation - There are two techniques for evaluation: *objective* - can be quantified with numbers and *Subjective* - is quatlitative. The Objective measures 1. Color 2. Length 3.Time Subjective measures 1. first formulate the question

Gestalt -(Gregg Berryman) means that parts of a visual image may be considered, analyzed and evaluated as distinct components. 2. The whole of an image is greater than and different from the sum of its parts.

Holistic View - is a "morphological" approach to graphic design methodology in which options and directions are identified first and then the design is determined by selecting pathways from the options that are visible.

Implementation - Refers to a step in the problem solving process in which the designer begins actual work on the project according to a project definition and plan.

Methodology - This refers to the process or method by which a designer works. It may be

systematic, intuitive or a combination.
Methodology is also referred to as a systematic
and logical process for controlling change.

Noise - is anything that interferes with the
audiences reception and recognition of the
message. Noise usually occurs within the medium
of transmisson.

Problem Solving - Problem solving is a way of
characterizing an important role of the graphic
designer. Because of the special sensitivities
to aesthetics, information and orgonization, the
graphic designer brings important assets to any
team effort.
     Problem solving is often seen as a process
which involves component steps such as
acceptance, onalysis, definition, ideation,
selection, implementation and evaluation.

Redundancy - is using form and organization
in ways that information is repeated, thereby
becoming more coherent. Often meanings are
used on many different levels to help ensure
understanding.

Semiotics - The theory of sign and symbol and
their function in both artificially constructed and
naturally constructed languages comprising:

syntactics - visual grammar
semantics - meaning
pragmatics - context

Semiotics - is the study of signs and sign theory.
A sign is anything that conveys meaning, it
communcates, it persuades. In graphic design
we are concerned with visual signs - if you know
the code, it becomes a sign, therefore it has
meaning. If the physical object of the sign isn't
understood then it isn't a sign. Context of the
code or sign is very important when trying to
communicate

Signs - There are three ways to represent
signs. 1. *Iconic*: likeness 2. *Indexic*: "points" to
something / fingerprint, smell, trock 3. *Symbolic*:
agreed upon convention. The interpretont is the
audience. The Design is the representation or
signifier. A good design has all three types of
signifiers built in. This is the redundancy thot
counters the noise. The idea or object is
whot is trying to be communicated.

Synesthesia: The process in which one type of

stimulus produces a secondary, subjective sensation, as when a color evokes a specific smell.

Synthesis - This means the bringing together of ideas, images or elements into an integrated whole.

Translation - Translation refers to a type of form study in which an object is visualized, using formal visual language, into a new graphic entity or essence.

Philosophy Definitions:

The following is a direct excerpt from
The Encyclopedia of Philosophy

On Metaphor:

"Metaphor is a linguistic phenomenon of peculiar philosophical interest and importance because its use in various domains raises puzzling questions about the nature and limits of language and knowledge. The study of metaphor in its aesthetic aspects belongs to rhetoric and poetics. The present article is limited to what may be called, in a broad sense, the cognitive aspects of metaphor, that is, problems about its functions in the acquisition and communication of knowledge.

The term "metaphorical," as contrasted with "literal," is applied to words, uses of words, meanings, and sentences. For present purposes, the term "attribution" will be convenient and may be allowed to include both phrases and declarative sentences (statements). Thus, "Time is a child at play" (Heraclitus) will be called a metaphorical statement, or (equivalently) "child at play" will be said to have a metaphorical sense in this context. And "the river of time" will be called a metaphorical phrase, or (equivalently) "river" will be said to have a metaphorical sense. The noun "time" in both these attirbutions will be called the subject in the metaphor, and time itself will be called the subject-thing. The metaphorical predicate or term, whether noun or adjective, will be called the modifier. Grammar does not always decisively indicate which is the subject and which is the modifier; in "logical space" (Wittgenstein), "logic" is the (implied) subject and (space" is the metaphorical modifier. Every metaphor consists of, and can be analyzed into, these two parts. Compound metaphors may contain several pairs of parts: for example, when Plato, in the *Timaeus*, writes, "intelligence, controlling necessity, persuaded her to lead towards the best the greater part of the thing coming into being." we may say that intelligence metaphorically controls and persuades, necessity is metaphorically controlled and persuaded, and necessity metaphorically leads; so that there are five distinct metaphors in this passage. (The widely used terms "tenor" and "vehicle," introduced by I.A. Richards in the *Philosophy of Rhetoric* , Oxford, 1936, Ch. 5, are not adopted, because of their tendency to vary in sense.)

By common definition, and by etymology, a metaphor is a transfer of meaning, both in intension and extension. The metaphorical modifier acquires a special sense in its particular context (when conjoined with "logical," the word "space" means something different from what it means in its usual contexts.); and it is applied to entities different from those it usually applies to, in any of its normal senses. Both of these features of metaphor have long been recognized, and some attempts have been made to explain them. The problem is to understand how that radical shift of intention comes about; how we know that the modifier is to be taken metaphorically; and how we construe or explicate its meaning correctly. The answers to these questions, and others are in some dispute, and no fully satisfactory theory has been devised.

Philosophy Definitions:

The following is a direct excerpt from
The Encyclopedio of Philosophy

Theories of Metaphor.

Emotive Theory
Comparison Theory
Information Theory
Iconic Signification Theory
Verbal-Opposition Theory

An adequate theory of metaphor must explain the two properties of metaphor that are generally acknowledged to be most fundamental. First, a metaphorical attribution differs from a literal one by virtue of a certain tension between the subject and the modifier: we are alerted by something special, odd, and startling in the combination. Metaphor is a species of what Paul Ziff has termed "deviant discourse," in *Semantic Analysis* (Ithaca, N.Y., 1960, Ch. 1). This tension, difficult to describe and analyze, is present in the phrase "logical space" but not in "Minkowsky space." Where it is very weak, we are on or near the imprecise border between metaphorical and literal attributions. Second, a metaphorical attribution is not merely an odd conjunction, for it is intelligible. In nonsense combinations, the oddity is there, but the opening-up of meaning is not. It is very difficult to be certain that attributions involving "space" and "time" are utterly nonsensical, because both of these term are so basic and abstract, but perhaps "ungrammatical space" and "Time is an uncle" will serve as examples of nonsense combinations.

Emotive Theory
One conceivable theory of metaphor, which has been broached, although never very thoroughly worked out, is the **Emotive Theory**. A number of philosophers, including some inclined toward logical positivism, have suspected that metaphorical statements are not capable of verification and hence, by their criterion, not genuinely meaningful. The nonsense examples above show that individually meaningul words can be combined into expressions that are not meaningful as a whole. The Emotivist suggests that the difference between acceptable and unacceptable deviant discourse ("the abating shadow of our conscript dust" versus Bosanquet's remark that "when the Absolute falls into the water, it becomes a fish") is that the former, but not the latter, somehow acquires a powerful emotive meaning in the process of relinquishing its cognitive, or descriptive, meaning. But since it is evident that metaphors do in fact differ cognitively from nonsense phrases, and since the Emotive Theorists do not explain how emotive meaning can rise out of the ruins of cognitive meaning, this theory does not seem very promising.

Comparison Theory
A second theory apparently fails for the opposite reason: it accounts for the intelligibility, but not for the tension, of metaphor. This proposal goes back to Aristotle, who suggested (Rhetoric, III,iv. 1-3;cf. x) that "the simile also is a metaphor; the difference is but slight." A metaphor, in this view, is an elliptical simile, that is, a collapsed comparison from which "like" or "as" has been omitted, for convenience

or for heightened interest. Thus, Heroclitus meont thot time is *like* o child ot ploy; our problem in grosping his meaning is to see how these two thing might be olike. This **Comparison Theory** evidently mokes the metophoricol ottribution intelligible, but it hos difficulties in exploining whot is so speciol obout it. There ore two reloted possiblites. One is to moke o distinction between, say, "close" ond "remote" comporison, ond exploin the tension in terms of remoteness: the tension is present when time is compared to o river or to o child ot ploy (or when Bergson soys thot "real durotion is thot durotion which gnows on things, ond leaves on them the mork of its tooth"), but obsent when time is compored with spoce. The criterio of remoteness hove not proved eosy to provide.

Information Theory
A second possibility is to meosure the degree of metophoricolness (so to speok) os the inverse of relotive frequency, os in Informotion Theory. But thot, too, seems insufficent: even if one compared, for the first time, the color of o fruitcoke to the color of o newly cleaned Rembrondt, o metophor would not thereby be estoblished.

Iconic Signification Theory
The Iconic Signification Theory, proposed in recent yeors, grows out of the Comparison theory, but goes beyond it in on interesting woy. According to this third theory, o metophor involves o double semontic relotionship. The modifier, which is to be interpreted literolly, directs us (sometimes obliquely) to on object, event, or situotion: ond the lotter is proposed os on iconic sign of the subject-thing (on iconic sign, in Peirce's sense, being one thot signifies in virtue of its similority to whot it signifies). The meaning of the metophor is obtoined by reoding off the properties thus iconicolly ottributed. For instonce, when o river is offered os on iconic sign of time, certoin notoble feotures of rivers (for exomple, one- dimensional directionolity) ore oscribed to time. Criticisms thot hove been mode of this theory, in which it hos been considered o speciol cose of the Comparison Theory, con perhops lorgely be onswered by further refinements of the theory itself.

Verbal-Opposition Theory
A fourth theory oims to exploin metophor more simply in terms of on interploy between two levels of meaning. In many common words ond phroses, we con roughly distinguish two sorts of meoning: (1) the centrol meoning, or meonings - what is colled designotion or (in Mill's sense) connototion, ond may be recorded in o dictionory os stondord; ond (2) the morginol meaning, consisting of those properties thot the word suggests or connotes (in the literory critic's sense of this term). Thus, "conscript" (odjective) designotes the property of hoving been ordered into militory service; it connotes such properties os being possive ond subordinate, ond being under control of o higher power. When "conscript" is opplied to the body (olso metophoricolly described os "dust") we toke the combinotion in o double woy. First, we recognize thot on the level of literol meaning it is impossible or obsurd to speok of ordering dust into militory service. (In some coses, the metophor is self-controdictory on this primory level; in other coses, there is o conflict between properties presupposed by the subject ond modifier, os, for exomple, thot only something thot is conscious con, in the full sense, be given on order.) Second, we select from the modifier's repertoire of morginol meaning (ond from the nonconflicting port of the centrol meaning) those properties thot con sensibly be ottributed to

the subject-thing, and so read the metaphor as making that attribution.

This theory, the **Verbal-Opposition Theory**, thus rests upon (1) a distinction between two levels of meaning, and (2) the principle that metaphor involves essentially a logical conflict of central meanings. The first point has been questioned on certain grounds: for example, whether it is proper to refer to "marginal meaning" as meaning at all, and whether the alleged "open texture" of language does not undermine the notion of "central meaning." A qualification of the second p oint has also been shown as being desirable: in some situations, as in pointing to a building and saying, "That's a dump," it is not the self-contradictoriness, but the obvious falsity, of the statement that requires it to be taken metaphorically. A more fundamental objection (best made by Paul Henle) is that metaphorical meanings cannot be limited to already known connotations of a modifier, because metaphor creates novel senses of words. The Verbal-Opposition Theory can be altered to allow, for example, that "conscript" takes on new meanings when first conjoined with "dust"; all the noteworthy properties of dust constitute a potentiality for metaphorical meaning. Then this theory comes close to the Iconic Signification Theory.

Philosophy Definitions:

The following is a direct excerpt from
The Encyclopedia of Philosophy

The Uses of Metaphor.

The above discussion gives some indication, however sketchy, of the important roles that metaphor may play in the development of language and in poetry. Its cognitive roles are primarily two. First, metaphor is a convenient, extraordinarily flexible and capacious device for extending the resources of language, by creating novel senses of words for particular purposes and occasions. If there are no words or short phrases in English that convey with precision and conciseness a certain disparaging view of Descarte's dualism, then "the ghost in the machine" (Gilbert Ryle) may do so. Second, metaphor is a condensed shorthand, by which a great many properties can be attributed to an object at once. When Santayana says that "the mind is a lyric cry in the midst of business," a number of the features of his epiphenomenalistic materialism are stated together.

On the other hand, certain dangers appear as the price that may be paid for these virtues.

First, just because of the metaphor's complexity of meaning, it is especially susceptible to misunderstanding: the reader may overlook an important part of what is meant, or may read into the metaphor something that is not there. Thus, if a dispute were to arise as to whether the mind is indeed a lyric cry in the midst of business or whether time is really a child at play, it would be crucially important, but extremely difficult, to insure that both parties understood these statements in the same sense. Second, because the various properties involved in the marginal meaning of a word (or its potential marginal meaning, or in the iconic signification of an object) are of various degrees of noteworthiness, ranging from the obvious to the subtlest and most marginal, the meaning of a metaphor trails off at the edge, so to speak, with diminishing emphasis. This border indecisiveness is a species of vagueness, and therefore, so long as the dispute continued in these words, some of the questions that might arise in a discussion as to whether the Absolute becomes a fish when it falls into the water would be unanswereable. Third, because the actual meaning of a metaphor in a given context consists of those marginal meanings pushed into prominence, or at least not canceled out, a metaphor is highly sensitive to its context. Therefore, as metaphorical terms move through a changing context, they are highly susceptible to equivocation and cannot safely be useed in inductive or deductive argument. Suppose all A are B, and suppose that B are metaphorically C; if we conclude that A are metaphorically C, there will probably be equivocation.

Metaphors used in the course of cognitive enterprises are frequently guarded, so as to take advantage of their values without courting their dangers. There are two main forms of control.

(1) If the metaphor is hedged about with protective rules and auxiliary explanations, it becomes less rich in meaning, but safer. When Leibniz chooses to describe his monads as being "windowless" but "mirroring" each other, he makes clear how we are to take these metaphors by using more technical terms of his system ("perception," "perspective," "clear and

distinct," and so forth). And Santayana's metaphorical description of the mind is clarified and fixed by the whole course of his metaphysics.

(2) Although a term may be introduced metaphorically, for the sake of a new meaning, its metaphorical status can be negated by appropriate stipulations, and it can become simply a new technical term in a novel sense. Leibniz' term "perception," for example, has a metaphorical origin, since obviously not everything that happens in the world is perception. But when he explains that there are preconscious perceptions, and that perceptions differ in clarity and distinctness, and that they are all coordinated, the ordinary sense of "perception" is pushed into the background. The question remains open, of course, as to whether the ordinary sense of the word is (or should be) excluded completely.

Philosophy Definitions:

Epistemological Problems.

Metaphor, by the foregoing accounts, is at least a manner of speaking, and one of considerable scope and importance; with caution, it can also be said to be a manner of thinking. If we conceive of philosophy as a "disease of which it (philosophy) is the cure" (as Herbert Feigl once suggested), or as the task of "showing the fly the way out of the fly-bottle" (Wittgenstein), these figures may not only guide our subsequent thoughts in certain fruitful directions, but also lead us into mistaken ideas. But of course the metaphorical description, as its implications are pursued, can be checked at each step, and we need not feel committed to all of its implications merely because it has a general appropriateness. So the metaphorical description may least misleadingly, perhaps, be considered as an aid to thought rather than a special mode of thinking.

A good deal more than this, however, has been meant by those philosophers who have found in metaphor (and in related phenomena, to be considered shortly) a distinct logical and epistemological character. Ernst Cassirer in *Language and Myth* (translated by Susanne Langer, New York, 1946, Ch. 6) has argued for the existence of a primitive "metaphorical thinking," reflected in "radical metaphor," which is the source of myth and poetry. Philip Wheelwright's *The Burning Fountain* (Bloomington, Ind., 1954, especially Chs. 5 and 6) treats metaphor as a species of "plurisignative" discourse and defends "the ontological status of radical metaphor. That is to say, metaphor is a medium of fuller, riper knowing" than is possible in literal (that is, ordinary and scientific) language. The thesis is that there are two fundamentally different forms of language, the litereal and the metaphorical, and that while the farmer is suited to the expression of empirical truths, the latter alone is capable of expressing transempirical, intuitive truths. In one form, this view may be traced back to those passages in Plato's dialogues in which Socrates, sometimes with a slight apology, abondons the mode of discursive argument and turns to speaking of the soul, or the Idea of Good, or the afterlife, "in a figure" - suggesting that figurative language can somehow outrun the nonfigurative.

This Double-Language thesis has one consequence that has evoked a great deal of discussion, namely, that if the two languages are so different, then they are not intertronslatable: that is, the meaning of metaphorical attributions must be, in large part, untranslatable into nonmetaphorical attributions. This is the problem of paraphrase. Wheelwright and others have argued for the autonomy and irreducibility of metaphorical language. Otheres (Urban and Herschberger) have argued that, in principle, everthing that can be said metaphorically could also be said literally.

Philosophy Definitions:

The following is a direct excerpt from
The Encyclopedia of Philosophy

Disputed Areas.

A number of problems in four fields of philosophy have centered on metaphor, or have been connected with it.

Philosophy of mind. Peter Geach, in *Mental Acts* (London, 1957, pp. 75-79), argues that our descriptions of mental acts are metaphorical. He holds that this is true, not merely in the (philosophically less interesting) sense that many of the terms we use for mental acts are etymologically derived from physical terms (see W. K. Wimsatt, Jr., *Philosophic Words*, New Haven, 1948), but also in the sense that our concepts of mental acts are "analogical" extensions of concepts that apply natively to sensible objects, including utterances. Thus, for example, the concept of "judging that p" would involve the extension of the concept of "saying that p." (This view is closely connected with Geach's theory of concepts as mental activities and with his rejection of the abstractionist theory of concepts.) However, it seems that according to Geach's theory, metaphorical applications of terms are neither necessary nor sufficient for analogical extensions of concepts.

Philosophy of science. It has been remarked that metaphor plays a role in the historical development of empirical science. In the early stages of a science, terms may be taken over metaphorically from ordinary language ("field," "force"), and protolawlike generalizations may be stated in metaphorical terms ("Nature abhors a vacuum"). Such transfers are nearly always guarded, the metaphorical richness being severely cut down by special rules. Thus, for example, when Darwin, in the *Origin of Species* (Ch. 3), introduces the term "struggle for existence" in "a large and metaphorical sense," he immediately gives examples and an explanation of what he wishes it to cover (for example, "success in leaving progeny") And although he notes (Ch.4) that some of the readers of his first edition misunderstood him by taking "natural selection" too literally, he thinks that, in context, such "metaphorical expressions" should be plain enough. In time, scientific metaphors are either reduced to literalness (dead metaphors), or replaced by technical neologisms. "Perhaps every science must start with metaphor and end with algebra; and perhaps without the metaphor there would never have been any algebra," as Max Black writes in *Models and Metaphors* (Ithaca, N.Y., 1962, p. 242). Sometimes, of course, the transition may take some time, and there is the danger of being misled-as Freud may have been misled by his personification of the parts of the self (see H. Nash, "Freud and Metaphor").

The issue of the function of metaphor in the development of science has been related to the question of the usefulness of models in science (see Black, *op. cit*). Duhem argued in *The Aim and Structure of Physical Theory* (translated by Philip Wiener, Princeton, N.J., 1954) that models have no justification but "the pleasure of the imagination." A model can be thought of as a kind of controlled metaphor, but a statement like "Electricity is a fluid" is probably best understood either as a simile ("Electricity behaves, in some ways, *like* a fluid") or as a suggestive analogy ("Electricity con be treated as *though it were* a fluid").

Philosophy of religion. The epistemological problems of metaphor appear at the heart of the study of religious language. The attempt to express the otherworldly in terms drawn from this world is manifested in Biblical figures ("The Lord is my shepherd"), in parable, and in the imagery of the mystics. Recently, the tendency has been to bring together metaphor, symbol, and myth under the same general heading. And if they are all species, or aspects, of the some general striving for a transcendental or supernatural mode of expression, then the issues of whether metaphors are meaningful, whether they are transempirical, and whether they are paraphrasable are bound to reappear in the philosophy of religion.

One attempt to resolve these issues is to be found in the Thomistic doctrine of analogy. According to St. Thomas, a few abstract negative terms (such as "eternal," "simple," and "immaterial") can be univocally predicated of God. But since God is beyond genus and species, any positive concrete terms (such as "wise" and "good") must be predicated of him analogically. Analogical predication is grounded on the analogy of being-the principle that since God is the cause of the good in each genus, he can be called by the name of the perfection of these goods. Besides the "onology of attribution" which is justified by the analogy of being, St. Thomas also recognizes an "analogy of proportion," which is to be understood as a comparison (God is to man as the shepherd is to his sheep).

The Thomistic onology of being was split apart by Barthionism, with its attack on all natural theology, and post-Barthion theories of theological language reflect the Double-Language theory. For Barth, all theological statements are metaphorical, but they can be interpreted only after the word of God has spoken to the interpreter. Paul Tillich defended the view that religious language is "symbolic," and that in fact all statements about God has spoken to the interpreter. Paul Tillich defended the view that religious language is "symbolic," and that in fact all statements about God are symbolic, except one-that God is "being itself" or "ground of being" (see his *Systematic Theology*, vol. i, Chicago, 1951, Parts ii and iiB). More recently, he said that even those are "metaphoric names," and he classified metaphorical descriptions of God ("The Lord is my shepherd") as a form of "secondary religious symbolism." F.W. Dillistone has distinguished the "metaphorical symbol" from the "analogical symbol" in *Christianity and Symbolism* (London, 1955, Ch. 1. pp. 160, 179, 273).

The important concept of myth, which has figured prominently in twentieth-century discussion, has also been connected with that of metaphor: a myth can be roughly described as an extended metaphor, and its accompanying ritual as a dramatized figure of speech. Even Rudolf Bultmann, who proposes to "demythologize" New Testament theology, has argued that myth is an expression of man's conception of the universe and of his place in it.

Ontology. The use of metaphor in metaphysical inquiry has long been the subject of dispute among philosophers. We can detect a certain uneasiness in Simplicius' report of Anaximander's theory that things "suffer punishment and make reporotion to one another for their injustice according to the order of time, as he says in somewhat poetical language" (*Physics* 24, 13). The rise of science in the seventeenth century, with its demand for clear and vigorous expression, brought this suspiciousness toward poetical language to its highest pitch. One of the seven reasons given by Hobbes why "there can be nothing so absurd, but may be

found in the books of philosophers" is "the use of metaphors, tropes and other rhetorical figures, instead of words proper" (*Leviothon*, Part I, Ch. 5). And Locke emphatically numbered among the abuses of language "figurative speeches, and allusion" (*Essay*, III, x, 34; cf. II, xi,2). As Colin Turbayne points out in *The Myth of Metaphor* (New Haven, 1962, p. 12), metaphor seems easily subsumable under Ryle's definition of "category-mistake": "the presentation of the facts of one category in the idioms appropriate to another" (*The Concept of Mind*, London, 1949, p. 8) Turbayne's book is itself an extended attack on the way philosophers let metaphors turn into myths.

On the other hand, a number of philosophers, from Plato through the German romantics to the present, may be counted among the defenders of metaphor. After his remark that "whenever anything lives, there is, open somewhere, a register in which time is being inscribed," Bergson adds, "This, it will be said, is only a metaphor.-It is of the very essence of mechanism, in fact, to consider as metaphorical every expression which attributes to time an effective action and a reality of its own: (*Creative Evolution*, translated by Arthur Mitchell, New York, 1911, p. 16). This is an interesting variation on the Double-Language view: it suggests that there is a language of mechanism and a wholly distinct language of the *elon vital*. Stephen Peper, in *World Hypotheses* (Berkeley, 1942, p. 91; cf. p. 96), has presented what he terms a "root metaphor" theory of "world- hypotheses": that there are four basic ontological systems, each derived from a "basic analogy or root metaphor." Dorothy M. Emmett has argued, in *The Nature of Metaphysical Thinking* (London, 1949, pp. 5, 197-198), that "metaphysics is an analogical way of thinking" which generalizes from "some form of intellectual or spiritual relationship" judged to be significant. More recently, Douglas Berggren has argued that "metaphysics must be vitally metaphorical"; that is, it must preserve the "stereoscopic" vision necessary to creative thought, if it is to overcome such puzzling dualisms as mind-body, without losing the identity of the terms.

It seems clear that, in its first appearance at least, any universal ontological statement must involve a synecdoche, for any interesting word that is applied to everything must be one that has already acquired a usage in which the word is applied to less than everthing. Such statements as "The real is the rational," "The world is Will," "All the states of the monads are perceptions," "Everything is material," and even "All events are actual occasions," extend the port metaphorically to the whole. From this point of view, such statements raise metaphilosophical questions as to whether they can claim meaning as essentially untranslatable "insights," or whether they can be recast by the metaphysician as literal technical statements, without losing their meaning.

Psychology Definitions:

5 Categories of Metaphoric Mapping:
Given the statement: "My shirt was a rock"

1) Inappropriate Response
2) Identity Category
3) Analogy Category
4. Predicate Category
5) Conceptual Predicate Category

1) Inappropriate Response: These are interpretations that do not make a mapping from vehicle to topic (e.g., "maybe the shirt laid over a rock") or that violate the semontics of the topic (e.g.,"It would mean it was a rock carved out like o shirt.")

2) Identity Category: corresponds to a low level metaphoric mapping...the facet selected from the vehicle is mapped onto the topic without any change of meaning. (e.g., "The shirt wos hard.")- for a response to be scored as an identity, the mapped facet(s) must be potentially be compotible with the semantics of the topic.

3) Analogy Category : Intermediate level of metaphoric mapping. The vehicle facet changes in sense as they apply from vehicle to topic. This change represents on accomodation of the vehicle facets to the semontics of the topic as in, "My shirt might be stiff." in this response, the vehicle facet has been altered slightly to be more accomodating to the topic. In an analogy mapping, the vehicle facet and the (semantically different) topic facet it maps are subsumed by a higher level, generic facet; for this ex: the generic facet would be a tendency not to yield.

Mapping - refers to some sort of mental transformation that the person applies to the selected vehicle facet to accommodate it to the semantics of the topic.Metaphoric mappings vary as to the degree of transformation in the vehicle meaning.

Given the statement "My sister was a rock."

1. a response addressing "physical Hardness" in the sister (e.g., "She was hard, like if you felt her hand you couldn't squish it ar anything") involves less transformation, less accomodation, than...

2. addressing "Psychological Hardness" in the

sister (e.g., "She was unyielding, she had a hard personality.")

3.a further degree of transformation is evidenced by an instatiation or conceptualization of the mapped facet in terms relevant to the topic but not to the vehicle (e.g., "The sister was mean").

4. Predicate Category - involves an elaboration of the mapped facets by means of a concept or an instatiation that is relevant to the topic but not to the vehicle. A first level of predication (the experiential predicate) involves description of a topic relevant instance; for example: "The shirt might have went stiff if you left it outside when it was wet in the winter." in this response, the subject relates a topic-relevant example of how a shirt could come to have the mapped facet. Such a response is cued by the gereric facet (e.g.,tendency not to yield) but it moves beyond simple description of this genereic facet (i.e, beyong the simple description of this generic facet (i.e., beyond the analogy level) to describe a situation fairly unique to the domain of shirts.

5) Conceptual Predicate Category - A highter level of predication. At this level, the elaboration is made in terms of a topic-relevant concept, tha is, in terms of a type of the topic as in "The shirt was starchy." "Starchy" is a concept that is properly based on the generic facet to describe a type of shirt that could possess the facet.

Facets - are semantic aspects of the vehicls referent (e.g. "physical hardness", for rock)

Mapping Operators - are kinds of mental transformations, the subject may apply to these facets to generate interpretations.

Psychology Definitions:

Quotational Excerpts:
Janice Johnson,
"Developmental vs. Language based factors in
Metaphor Interpretation."

"There is a small amount of differential research
that also implicates linguistic factors in metaphor
understanding. Whyte (1983) examined metaphor
interpretations of adults who were either normal
readers or poor readers. She found no group
differences in ability to provide appropriate
interpretations but did find differences in the level
of language used. Normal readers were more
likely to use abstract/ psychological referents in
their interpretations, whereas poor readers more
frequently used concrete/ sensory referents."

"Recent research within a neo-piagetian
framework has attempted to uncover factors
that may underlie social class differences in
cognitive performances. A central theoretical
variable in this approach is the concept of a
developmentally increasing Mental Capacity,
that is, a general mental - processing resource,
a mental-attentional energy that can be used to
boost the activation of task-relevant schemes
(knowledge structures) that are not sufficiently
activated by the situation (Johnson et al., 1989;
Pascual-Leone, 1970,1984,1987). In simple
terms, mental capacity corresponds to the
number of separate pieces of infromation, not
directly activated by the input, that the subject
can actively keep in mind at any on time...
within the neo-Piagetian theory proposed by
pascual-Leone, mental capacity is seen as
increasing maturationally, independent of
experience to the extent that a task is a pure
measure of mental capacity, one would expect
perfomance differences to result from age but
not from other group factors.

Psychology Definitions:

Piaget Theory of Child Development:

Sensorimotor is from Birth to 2 years (No abstract thinking)
Preoperational is from 2 years to 5 years (abstract thinking is governed by personal view of world)
Concrete Operational is 5 years to 12 years (abstract logical thinkers)
Formal Operations is from 12 years on (2 or more abstractions simultaneously)

Psychology Definitions:

Bob Sample's
Hierarchy of Access - Children lose the ability
to think and act metaphorically a they mature,
they might need to be reintroduced to metaphoic
modes of thinking. The Hierarchy of Access is an
ordered scheme that reflects the ease of
acceptance of thinking metaphorically
to a rationlally dominant culture.

Symbolic Metaphoric Mode
Synergic Comparative Metaphoric Mode
Integrative Metaphoric Mode
Inventive Metaphoric Mode

Symbolic Metaphoric Mode - Symbolic Metaphor
exists whenever a symbol, whether Abstact or
Visual is substituted for some object, process or
condition.
Left Hemisphere: = Abstract = letters of
alphabet, numberals, math symbols, and other
technical images
Right Hemisphere = Visual = trademarks, some
roadsigns, logos and many map marks, Egyptian
pictographs, native American petroglyphs.

Synergic Comparative Metaphoric Mode - exists
when two or more objects, processes, conditions
are compared in such a way that the elements
combine to become more than either was before.
Synergy - whole is greater that the sum of its
parts
Externality (person still detached or outside of
object)
ex. Eskimos in World War II fixed aircraft thinking
that the planes were alive. This was an
Anthropomorphic experience as the exkimos
treated the plane as if it mimicked human lifesigns.

Integrative Metaphoric Mode - occurs when
physical and phychic attributes of person involved
are extended into direct experience with objects,
processes and conditions outside themselves.

Inventive Metaphoric Mode - whenever a person
creates a new level of awareness of knowing as
the result of self initiated exploration of objects,
processes, or conditions
Creates = Invention

Synectics Definitions:

The following outline of the Synectics process is the basis for putting into practice the various phases of Synectics theory:

phase 1: Problem as Given
phase 2: Making the Strange Familiar
phase 3: Problem as Understood
phase 4: Operation Mechanisms
phase 5: The Familiar Made Strange
phase 6: Psychological States
phase 7: States Integrated with Problem
phase 8: ViewPoint
phase 9: Solution or Research Target

Problem as Given:
For the sake of clarity and simplicity we will assume that the problem is given. The process in the instance where a problem must first be developed is much the same, except that it is loner and somewhat more complicated. The problem as given is the statement of the problem to those responsible for its solution. The statement may turn out to be an accurate description of the state of affairs or it may hide and confuse the basic question. It always implies a labyrinth of interconnected assumptions which may or may not be correct. In the roof example the problem as given was to invent a new roof.

Making the Strange Familiar:
Any problem, no matter how old a chestnut, is strange in the sense that concentrated analysis will uncover elements not previously revealed. In this phase, it is not important to resolve contrary elements so much as to bring them out into the open. In the roof example making the strange familiar took the form of analysis which revealed the functions as well as the drawbacks of traditional roofs.

Problem as Understood:
Profound and determined analysis leads to this phase where the various atomistic bits of information about a problem are isolated for examination. This phase concludes the digestion of the problem as given. In the roof example, the problem as understood was to invent a roof that would change from white to black anc vice versa depending on ambient heat and sunlight.

Operational Mechanisms:
Analogies (metaphors) are developed which

are relative to (and evoked by) the problem as understood. This phase pushes and pulls the problem as understood out of its rigid form of impregnable regularity into a form that offers some conceptual fingerholds. These finger-holds open up the problem as understood. In the roof example the actual mechanism was Direct Analogy- the flounder. However, in a typical Synectics session the mechanisms are interrelated, one leading to another.

The Familiar Made Strange:
In this phase the mechanisms have done their job and the problem as understood is seen as foreign. It takes on an interesting cast as though never seen before. In the roof example the analogy of the flounder forced the group to consider a roof in a strange new way-as though it were a flounders back.

Psychological States:
At last the mind's attitude toward the problem as understood attains the states of involvement, detachment, deferment, speculation and commonplace-ness which Synectics theory believes describes the psychological climate most conducive to creative activity. In the roof example the particular states brought into being by the mechanisms were involvement (with the flounder) and deferment from the immediate, from the familiar roof as known, and from solution too soon.

States Integrated with Problem:
Once the states have been reached through the mechanisms, the most pertinent analogy is conceptually compared with the problem as understood. In this phase the problem as understood is liberated from its old rigid form.

Viewpoint:
Looking at a roof as though it were a flounder's back and being able to develop a technical insight into a roof which would solve the problem as understood - this describes the viewpoint phase concretely. Each time that analogies derived from the use of mechanisms are compared with the problem as understood, then the viewpoint is actual. In the roof example the viewpoint resulting from seeing the roof as a flounder's back did in fact lead too a technical insight about how a roof could be made to change from white to black at the proper intervals

Solution or Research Target:
In this phase the viewpint is reduced to practice
in terms of testing the underlying principle, or
the viewpint may become the subject of further
research. The activity in this phase depends on
whether the viewpoint implies the mere
reintegration of known materials in a new way
or whether new materials have to be developed.

Jeff S. Arbegast
May 1993
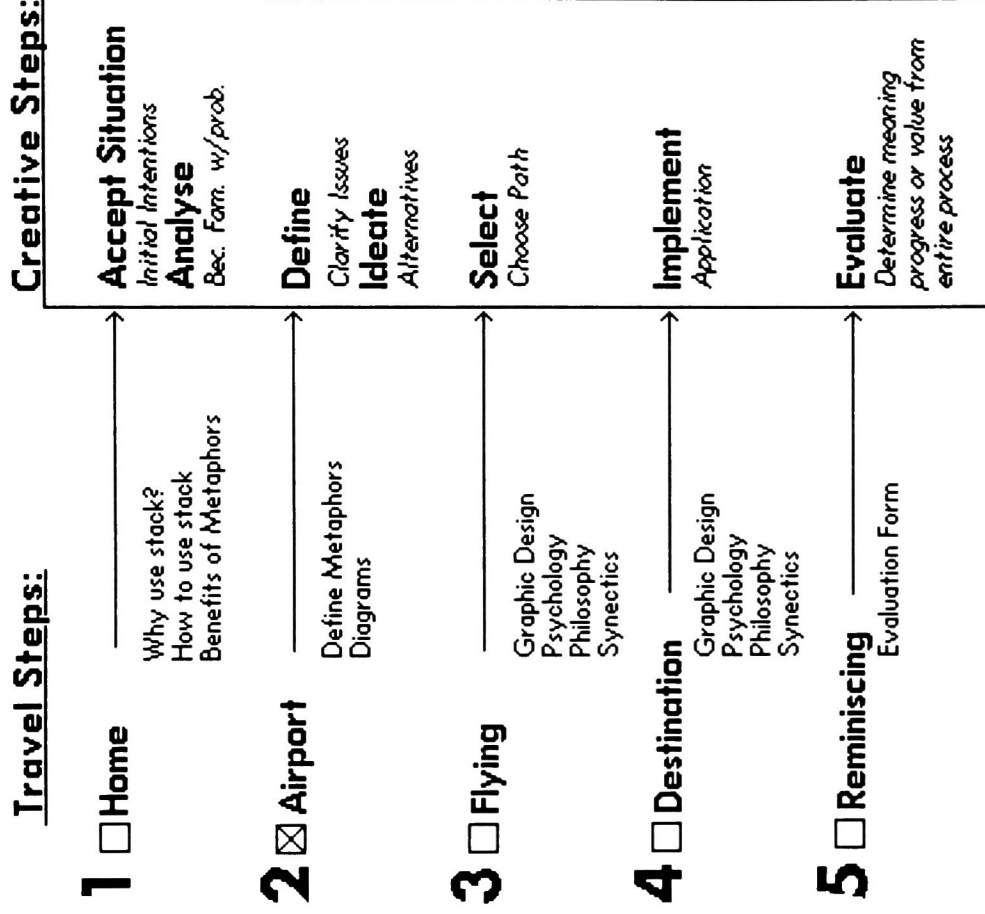
Appendix D

Travel Steps vs. Creative Steps

Travel Steps:

1 ☐ **Home**

Why use stack?
How to use stack
Benefits of Metaphors

2 ☒ **Airport**

Define Metaphors
Diagrams

3 ☐ **Flying**

Graphic Design
Psychology
Philosophy
Synectics

4 ☐ **Destination**

Graphic Design
Psychology
Philosophy
Synectics

5 ☐ **Reminiscing**

Evaluation Form

Creative Steps:

Accept Situation
Initial Intentions
Analyse
Bec. Fam. w/prob.

Define
Clarify Issues
Ideate
Alternatives

Select
Choose Path

Implement
Application

Evaluate
*Determine meaning
progress or value from
entire process*

What are the links between the Travel process and the Creative process?

This screen demonstrates the connections between "Journey" or "Travel" and Creativity. Each of the Travel Steps is a metaphor for the corresponding Creative Step. For example, when beginning a journey, you start at Home. While at home, you need to determine:

• Where am I going?
• Why am I going there?
• What difficulties might I encounter going there?

These questions are parallel to the questions asked when beginning the Creative process.

Continue → **Airport**

Exit Stack

← Previous

Travel Steps	Icons	Relationship between the icons to the left and the creative steps:	Creative Steps
Home		...is a travel metaphor for the first step of the creative process. In this step, the initial goals are set and the problems associated with these goals are explored.	**Accept Situation** **Analyse**
Airport		...is a metaphor for defining the issues that surround the goal and begins seeking several alternate solutions to arising problems.	**Define** **Ideate**
Flying		...is a metaphor for the third step. A solution method is discovered and previous research and ideation help creative solutions take off.	**Select**
Destination		...is a metaphor for the final implementation of the creative process. A piece of work is created. The application presents the totality of research and creative effort.	**Implement**
Reminiscing		...is the stage of analysis and reviewal. Further areas of improvement or alternate solutions are reconsidered and meaning, progress or value is determined from entire creative process.	**Evaluate**

Jeff S. Arbegast
May 1993

Appendix E

Hypercard Screen Shots
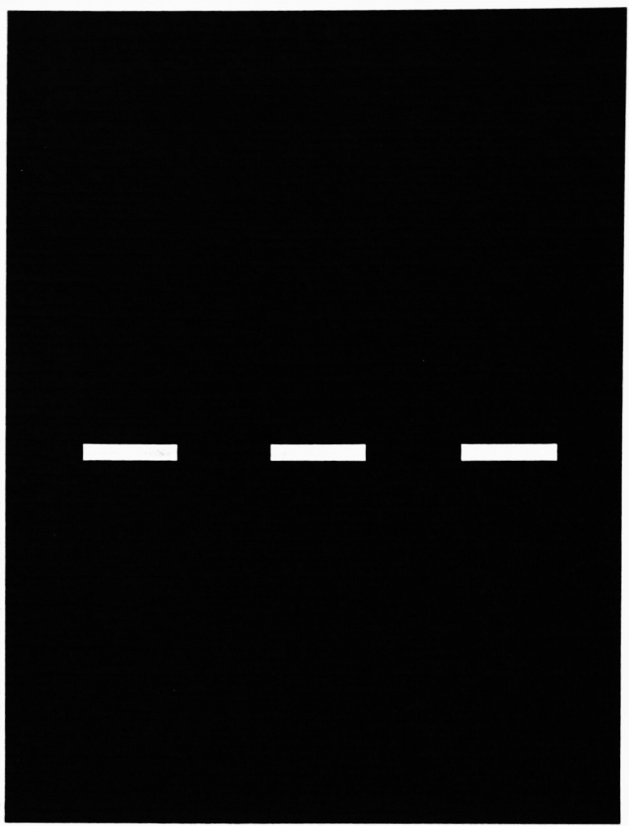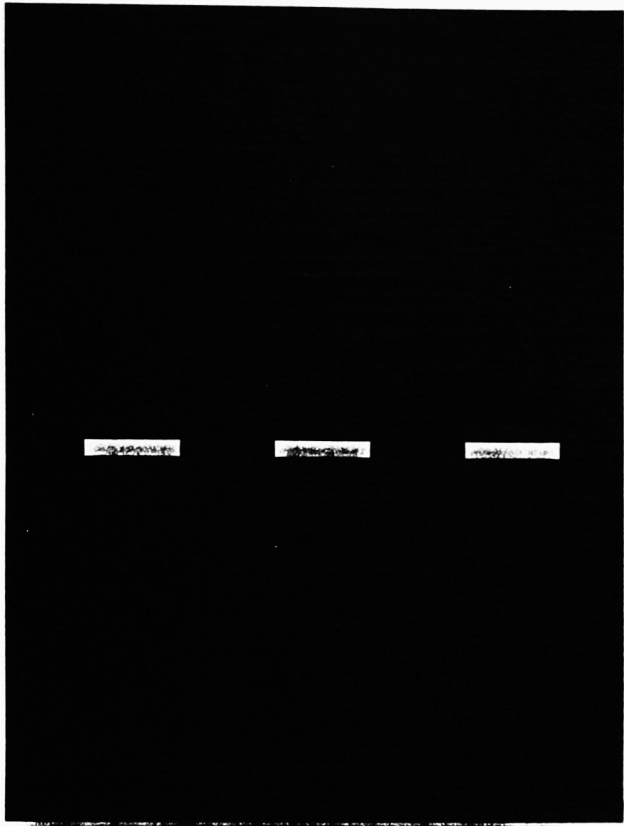
Metaphor Vacation

Cross-Disciplinary Use of Metaphor
College of Imaging Arts and Sciences
Rochester Institute of Technology

Jeff Arbegast
Rochester, New York
April, 1993

Continue →

← Previous

Intent of Stack

"The creative process is a journey."

This metaphor is used throughout the stack to demonstrate how metaphors can be used in a creative process.

The stack's purpose is to introduce R.I.T. students to metaphor by demonstrating how different fields use it in their area of study.

The purpose of this stack is not to resolve any conflicts in these fields regarding metaphor, but to glimpse how the various fields treat metaphors.

While using this stack would you prefer to have sound....

● ON   ○ OFF

← Previous

Continue →

Exit Stack

What are the links between the Travel process and the Creative process?

This screen demonstrates the connections between the "Journey" or "Travel" and Creativity. Each of the Travel Steps is a metaphor for the corresponding Creative Step. For example, when beginning a journey, you start at Home. While at home, you need to determine:

- Where am I going?
- Why am I going there?
- What difficulties might I encounter going there?

These questions are parallel to the questions asked when beginning the Creative process.

Travel Steps:

1 ☐ Home
Why use stack?
How to use stack
Benefits of Metaphors

2 ☐ Airport
Define Metaphors
Diagrams

3 ☐ Flying
Graphic Design
Psychology
Philosophy
Semantics

4 ☐ Destination
Graphic Design
Psychology
Philosophy
Semantics

5 ☐ Reminiscing
Evaluation Form

Creative Steps:

Accept Situation
Initial Intentions
Analyze
Rec. Rem. w/prob.

Define
Clarify Issues
Ideate
Alternatives

Select
Choose Path

Implement
Application

Evaluate
Determine meaning, progress or value from entire process

← Previous

Continue →

Exit Stack

Travel Steps	Icons	Relationship between the Icons to the left and the creative steps	Creative Steps
Home		...is a travel metaphor for the first step of the creative process. In this step, the initial goals are set and the problems associated with these goals are explored.	**Accept Situation** **Analyze**
Airport		...is a metaphor for defining the issues that surround the goal and begins seeking several alternate solutions to arising problems.	**Define** **Ideate**
Flying		...is a metaphor for the third step. A solution method is discovered and previous research and ideation help creative solutions take off.	**Select**
Destination		...is a metaphor for the final implementation of the creative process. A piece of work is created. The application presents the totality of research and creative effort.	**Implement**
Reminiscing		...is the stage of analysis and review. Further areas of improvement or alternate solutions are reconsidered and meaning, progress or value is determined from entire creative process.	**Evaluate**

← Previous

Continue →

Exit Stack

Travel Step: Home

Home, a metaphor for a beginning place. In this stack, Home relates to beginning to analyse a creative problem and becoming familiar with the challenges of the problem.

Why use this Stack?

• Introduce you to metaphor
• Practice thinking metaphorically
• See examples of how metaphor is used

How to use this Stack:

• Simply click on the box to turn the sound on or off

The sounds are placed at the beginning of each step of the creative process, to illustrate the travel metaphor being used in that section of the stack. For example, click the button to the right to here a plane flying by, which will later assist the "Flying" metaphor, which makes the connection between flying a plane and choosing an avenue of study in the creative process.

Continued next page →

| plane |

☒ Sound On

← Return

Travel Step: Home

An Experiment!

In the *Flying* section, there is an important box in the upper right corner of the screen. (seen here to the left) From top to bottom, the four categories listed are known as a *Hierarchy of Access* (created by Psychologist, Bob Samples), derived from research into how metaphors are accessed and interpreted in Psychology. They represent increasingly more difficult metaphors to understand.

1. Click on a box, such as "Symbolic Metaphoric", to see brief examples of the category in the box below it.

Also, you will notice several buttons along the bottom of each screen. These are the navigation buttons. Clicking them will

Previous : take you either ...
  A) back to 1 stage earlier
  B) move you "left" one screen
Return : acts as the "A" choice listed above.

Continue : take you either ...
  A) forward to next stage
  B) move you "right" one screen

Hierarchy of Access

Metaphor Level :		easiest
	Symbolic Metaphoric	
	Integrative Metaphoric	
	Inventive Metaphoric	hardest

Examples: *Synergy:* the whole is greater than the sum of its parts.
ex. Volkswagen "bug": insectness vs. automobileness

← Previous   ↰ Return   Continue →

Travel Step: Home

Information or emotion can be exchanged quicker and more efficiently if a powerful metaphor is serving as the link in the communication process.

The Benefits of Using Metaphors:

Why should a person learn to think metaphorically? There are several reasons. When used correctly, metaphors can make it easier to understand a difficult subject. Thoughtful visual metaphors can convey a great deal of meaning across, than would otherwise be possible to a casual observer. Scientists often make use of metaphors to explain a process or condition that might otherwise be horrendously difficult to understand.

Think how difficult it would be to communicate without language, or writing, both of which are metaphors. How would society continue to thrive without an efficient number system? Without money? Without books? Humanity thrives on communicating by relating how person A relates to what person A is saying or doing. If both people can relate to a given metaphor, then a powerful communication tool is established. Information or emotion can be exchanged quicker and more efficiently if a powerful metaphor is serving as the link in the communication process.

It is in the best interest of any communicator to try to understand metaphors as thoroughly as possible. This stack will briefly touch on a few of the many aspects of metaphor in several disciplines.

← Previous   ↰ Return

Travel Step: Airport :

Airport: The airport serves as a strong metaphor for defining and ideation, the next steps in the creative process. Which direction should we go? Which Right? Exactly where are we going?

⦿ Graphic Design
○ Psychology
○ Philosophy
○ Synectics

Graphic Design Definitions

Acceptance - The first step in the problem solving process. Designer must agree to become engaged in the project.

Analysis - is the step in the problem solving process in which the designer reviews information and materials, with respect to their nature, proportion, function, interrelationship, etc. Analysis of data is important prior to problem definition.

Application - Application refers to the process and form directed to a graphic design image made for a specific purpose. A poster is an example of an application in graphic design.

Code - is execution. Execution is coded in that

Defining: this step in the travel and creative process is where you can look up definitions or brush up on theories.

☒ Sound On

↰ Return

Travel Step: Flying:

Flying: This step is a metaphor for choosing the path you wish to pursue in your endeavors. The Flying step encourages research and work focusing on a specific goal or application.

Matuator Level	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

☐ Graphic Design
William Golden
Charles Coiner
Will Burton

☐ Psychology
Jean Piaget
Sigmund Freud
Carl Jung

☐ Philosophy
Nelson Goodman
Aristotle
Friedrich Neitzsche

☐ Symectics
William Gordon

☒ Sound On

Continue →   ↵ Return

Travel Method: Graphic Design:

Matuator Level	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

Name: William Golden
Years: 1911-1959

William Golden was born 1911 in New York City. He attended Vocational School for boys in the 1920's and moved to Los Angeles in 1928 to work for the Examiner. He returned to New York in the 30's to work on House and Garden. In 1940 he is named art director at CBS. He is most known for his CBS "eye" that has endured for roughly 40 years.

An ad for CBS Television that appeared in Variety in 1955. The eye symbol is manipulated to reinforce a promotional concept - a good example of the "concept" or copy-oriented design that prevailed at CBS under Golden's leadership.

↵ Return   Continue →

Travel Method: Graphic Design:

Matuator Level	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

Name: Charles Coiner
Years: 1898 -

Charles Coiner was born in Santa Barbara, California. He studied at the Chicago Academy of Fine arts and the Art Institute of Chicago. He worked for Erwin and Wassey, Chicago and N.W. Ayer and Son, Philadelphi. He was named to the Art Directors Hall of Fame in 1949 and retired as Vice-President at N.W. Ayer in 1964. He is known for his work at Container Corporation of America where he produced a Trademark series of advertising campaigns." He also designed the "Blue Eagle" symbol for the N.R.A and a symbol program for the U.S. Citizens' Defense Corps.

"A black-and-white ad for the Container Corporation of America, designed by the noted French poster artist A.M. Cassandre with art direction by Charles Coiner. This 1938 ad, targeted at the packaging industry, shows Cassandre's unique ability to focus the reader on a coherent set of icons that reinforce the copy message."

Magazine ad for DeBeers Consolidated Mines. With the photography of the young Irving Penn, this ad brings a quality of natural elegance to the promotion of the high-priced product.

← Previous   ↵ Return   Continue →

Travel Method: Graphic Design:

Matuator Level	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

Name: Will Burton
Years: 1908 - 1972

Will Burton was born in Cologne, Germany. He worked in a typesetting shop and was a teacher in Cologne as well. He emigrated to the U.S. in 1938 and began teaching at the Pratt Institute. He was the art director for Fortune magazine from 1945-1949. From 1948-1971 he was design consultant for Upjohn Company. He opened his studio in New York in 1949 and in 1964 designed the Eastman Kodak Exhibit at N.Y. World's fair.

1955 Cover for Scope. With Scope, Burtin continued a tradition of distinguished graphic design begun by Lester Beal. The magazine, whose audience was largely physicians, existed to improve the understanding of modern therapeutics and to enhance Upjohn's sales of pharmaceutical products.

Cover for Burtin's first issue of Scope, 1941, a magazine for the Upjohn Company. Burtin's work for Scope shows his gift for presenting technical information in a clear and understandable way. Burtin was able to bring taste and beauty to otherwise ordinary subject matter.

← Previous   ↵ Return

Top-left panel

Travel Method:
Psychology:

Metaphor Level:	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

Freudian dream theory

Dream Symbols

The following excerpt is from
"Fear and Fantasy in Freudian Theory," by Fred
Kline

Freudian dream theory

Dream Symbols

"The number of things which are represented
symbolically in dreams is not great. The human
body as a whole, parents, children, brothers
and sisters, birth, death, nakedness and one
thing more."
(Freud, 1916)

Some examples of symbols are:

Object (in the text itself)	Word that is meant
Human body	House
Male body	Smooth-fronted house
Female body	House with ledges and balconies
Parents	Emperor, empress, king

Name: Sigmund Freud
Years: 1856-1939

Sigmund Freud was born May 6, 1856 in
Freiburg, Moravia. In 1865 he entered the
Sperl Gymnasium by exam a year before the
usual age. He graduated summa cum laude
and entered the University of Vienna to study
medicine, studied physiology with Ernst
Brucke. He became a doctor of medicine in
March, 1881, specialized in surgery. His
first public statement of theory of infantile
sexuality done in 1896. In 1906 begins his
correspondence with Jung. In 1911 he
ruptures with Adler, 1913 with Jung. He
died on September 23, 1939.

← Previous   Continue →

Top-right panel

Travel Method:
Philosophy:

Metaphor Level:	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

When is Art?

Nelson Goodman presents five symptoms of the
aesthetic as an indication of when a work of art is
related functioning as a work of art:
(Goodman, p.67-68)

1. **syntactic density**, where the finest
difference in certain respects constitute a
difference between symbols-for example,
an ungraduated mercury thermometer as
contrasted with an electronic digital-read-out
instrument:

2. **semantic density**, where symbols are
provided for things distinguished by the finest
differences in certain respects- for example,
not only the ungraduated thermometer again
but also ordinary English, though it is not
symbolically dense;

3. **relative repleteness**, where comparatively
many aspects of a symbol are significant -for
example, a single-line drawing of a mountain
by Hokusai where every feature of shape,
line, thickness, etc. counts, in contrast with
perhaps the same line as a chart of daily
stockmarket averages, where all that counts
is the height of the line above the base

Name: Nelson Goodman
Years:

Nelson Goodman resides in eastern
Massachusetts. He ran an art gallery in
Boston and served in the United States Army,
conducting psychological testing. He gave
the Alfred North Whitehead Lectures at Harvard,
the John Locke Lectures at Oxford, and the
Immanuel Kant Lectures at Stanford. He
received the BS degree in 1928 and his PhD
in 1941. He has lectured on philosophy,
psychology, and the arts, and participated
in founding a Dance Center and an Institute
for Arts Administration at Harvard.

← Return   Continue →

Bottom-left panel

Travel Method:
Psychology:

Metaphor Level:	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

The following is a condensed version of The
Semiotic or Symbolic Function from The
Essential Piaget, by Howard E. Gruber and
J. Jacques Voneche

**The Semiotic or
Symbolic Function**

Introductory Notes

"... Play, Dreams and Imitation", by Piaget, is
a book whose major focus is the period of
childhood from 2 to 7-8 years, during which the
child is rapidly developing not only language, but
all other aspects of the symbolic function or,
more accurately, the semiotic function: the
ways in which the individual represents his
world, his actions, and his experiences to
himself. As Piaget himself puts the relation
between these two foci, "Only after discussing
the problems of imitation, play, and unconscious
symbolic thought can we then... place within
the whole structure the beginnings of cognitive
representation and draw the resulting
conclusions as to the mechanism of
representational activity or the symbolic
function."

The goal of the book is to explain how
"symbolic play of children is more than just

Name: Jean Piaget
Years: 1896 -

Piaget was born August 9, 1896 in Neuchatel,
Switzerland. In 1918 he received his Doctorate
of Natural Sciences with a thesis on molluscs.
He studied psychology in Zurich from 1919
to 1920 under Lipps and Wreschner. He
published Judgment and Reasoning in the
Child in 1923. In 1925-1929 he was the
Professor of psychology, sociology and
philosophy of sciences at the University of
Neuchatel. From 1932 to 1975 he wrote such
works as: The Moral Judgment of the Child,
The Construction of Reality in the Child and
Play, Dreams and Imitation in Childhood

↑ Return

Bottom-right panel

Travel Method:
Psychology:

Metaphor Level:	Symbolic Metaphoric
	Synergic Comparative
	Integrative Metaphoric
	Inventive Metaphoric

Jung's Archetypes:

Jung initially defined the imagery generated
by the collective unconscious as primordial
images", and later termed the imagery,
archetypes (Robertson, p. 101) Archetypes
can take different forms, such as Mother.
The name becomes a metaphor, making the
connection between the object, process or
condition of being a Mother, and the mercurial
state that is an archetype. For clarification,
take the example.

"... the simplest of animals, the one-celled
paramecium. A paramecium doesn't have to
know a great deal to survive. It eats whatever
it encounters that it recognizes as food; it runs
from everything it encounters that it
recognizes might eat it. The paramecium's body
does not have to learn how to digest the food
and how to propel itself away from danger,
nor does its mind (if the term can be used that
loosely) have to learn what food is and what
an enemy is. Both the body's and the mind's
knowledge is already stored in the paramecium
because generations of its ancestors
have experienced both food and enemies.
Those remembered patterns are archetypes."
(Robertson, p.108)

Name: Carl Jung
Years: 1875-1961

Swiss psychiatrist C. G. Jung developed his
theories for a period of more than fifty years.
In his youth, Jung worked with Sigmund Freud
in the early development of psychoanalysis as
a theory of personality and as a method of
therapy. In 1912 he published Symbols of
transformation, which heralded his departure
from the psychoanalytic make. Jung believed
it was necessary to approach the deeper
layers of the unconscious. He labeled this
territory the "collective unconscious".

← Previous   ↑ Return

Travel Method: Philosophy:

Five Statements on Art

1. Art is the most perspicuous and familiar configuration of will to power.
2. Art must be grasped in terms of the artist.
3. According to the expanded concept of artist, art is the basic occurrence of all beings; to the extent that they are, beings are self-creating, created.
4. Art is the distinctive countermovement to nihilism.
5. Art is worth more than "the truth."

Name: Friedrich Nietzsche
Years: 1896 -

Friedrich Wilhelm Nietzsche was born on October 15, 1844. He moved to the Don Gymnasium in 1853 and start school at Pforta in 1858. Nietzsche graduated with a thesis on Theognis in 1864. He died on August 25, 1900.

← Previous   ↵ Return

Travel Step: Destination

Destination: The destination of your journey. This step in a metaphor for the application step in the creative process. Individual case studies are examined based upon what has been learned.

Congratulations!

You have arrived at the vacation spot of your dreams; the fulfillment of your goals. To see the sights, simply click the "Continue" button below to view scenic areas of interest.

☒ Sound On

← Return   Continue →

Travel Method: Philosophy:

Poetic Truth:

"Plato in the Phaedrus had insisted that every artistic composition, whether in prose or verse, should have an organic unity. 'You will allow that every discourse ought to be constructed like a living organism, having its own body, and head and feet; it must have middle and extremities, drawn in a manner agreeable to one another and to the whole.'

"The idea may be said to be at the basis of Aristotle's whole poetic criticism. A work then of poetic art, as he [Aristotle] conceived it, while it manifests the universal as it is yet concrete and individual reality, a portion or whole, animated by a living principle or by something which is at least the counterpart of life and framed according to the laws of organic beauty.

The artistic product is not indeed in a literal sense olive, for life or soul is in Aristotle the result of the proper form being impressed upon the proper matter.

Name: Aristotle
Years: 384-322 B.C.

Son of Nicomachus, Aristotle was born in the Ionian city of Stagira in Chalcidce. He entered Plato's academy, about 367 B.C. He remained there until Plato's death in 347 B.C. He initiated his zoological investigations in 345 B.C. He became the tutor of the young Alexander the Great. He opened his Lyceum around 335 B.C. and died in Chalcis at the age of 62.

Photo unavailable

← Previous   ↵ Return   Continue →

Travel Method: Synectics:

Synectics

Synectics, as a process, attempts to alter the way people perceive and solve problems. Consider the two primary phases of synectics. The first is "Make the strange familiar." The second is "Make the familiar strange." By using four different types of metaphor, people using a synectics approach arrive at unforeseen solutions to stated problems. Using metaphor in a creative process allows the potential for new connections to be made. These connections strengthen the overall verbal or visual solution of a problem semantically.

Synectics, as told by William Gordon, encourages individuals and groups to leave linear thinking processes and explore divergent thinking. The Synectic process possesses four analogic thought patterns, which are thinking methods for making metaphorical comparisons.

1. Direct (comparisons): a direct comparison, such as "clouds are cotton."
2. Personal (comparisons): these require the thinker to physically become a part of the object, such as "I am dancing like a tree."
3. Symbolic (comparisons): these

Synectics:
"...from the Greek, means the joining together of different and apparently irrelevant elements. Synectics theory applies to the integration of diverse individuals into a problem-solving group."

Name: William Gordon
Years: -

William Gordon is the President of The Invention Research Group in Cambridge. He lectures at Harvard University. From 1950 to 1960 he was head of the Invention Group at Arthur D. Little, Inc. He serves on the board of directors of the Boston Arts Festival and of the Institute of Contemporary Art. He frequently contributes to such magazines as Harvard Business Review and Philosophical Review, and has also written for the New Yorker.

↵ Return

Destination: Psychology

Introduction

Freudian dream theory has been most extensively developed especially in "The interpretation of dreams" (Freud, 1900) and in the "Introductory lectures on psychoanalysis" (Freud, 1916,17). This means that any outline of the theory must do it scant justice. Because of this complexity the outline itself will be analytic - categorized under various headings.
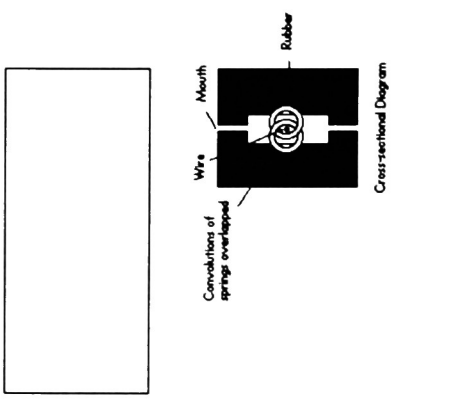
Freudian dream theory.

- Introduction
- Outline of the Theory
- Formation of Dreams
- Nature of the Dream Content
- Dream Symbols
- Why is there Dream Work?
- Anxiety Dreams as Wish Fulfillment
- The Hypothesis
- Importance

← Previous   Continue →

Destination: Graphic Design

"Watercolor sketch for the National Recovery Administration (NRA) Blue Eagle symbol, done in 1933. Coiner was among the first prominent American designers to contribute time and talent in the service of the federal government."

From *Nine Pioneer's of American Graphic Design*

Coiner's Blue Eagle

"Charles Coiner was a dashing figure and very visible in the world of advertising in the 1920's and 1930's. In the depths of the Great Depression, with over 15 million Americans out of work, Coiner was tapped to design a symbol for the National Recovery"

Metaphorical Analysis:

1. Subject being Discussed:
Coiner's Blue Eagle

2. Metaphorical Statement:
"The United States Economy is a Blue Eagle"

3. Type of Metaphor:
Verbal and Visual

Verbal: "The Blue Eagle is a strong, United States economy." Also, the NRA logo and the "U.S." type are literal, verbal metaphors for higher institutions.

Actual finished poster for the NRA, 1934

→ Blue eagle

→ lightning bolts

→ mechanical cog

← Previous   Continue →

Destination: Synectics

The following is from pp. 9-11 of William J.J. Gordon's "Synectics"

Example of Fantasy Analogy Synectics accepts Freud's wish fulfillment theory of art, but turns it onto technical invention as well and uses it operationally. For instance, when faced with the problem of inventing a vapor proof closure for space suits, a part of the Synectics approach was to ask the question, "How do we in our wildest fantasies desire the closure to operate?"

The Conversation:

G: Okay.. That's over. Now what we need here is a crazy way to look at this mess. A real insane viewpoint a whole new room with a viewpoint!

T: Let's imagine you could will the suit closed.. and it would do just as you wanted by wishing. (Fantasy Analogy mechanism.)

G: "Wishing will make it so.."

F: Shh. Okay. Wish fulfillment. Childhood dream.. you wish it closed.. and invisible microbes, working for you, cross hands across the opening and pull it tight

Convolutions of springs overlapped

Wire   Mouth

Rubber

Cross-sectional Diagram

← Previous

Destination: Philosophy

The following article is from "Nietzsche" by Martin Heidegger, pp. 69-78.

Five Statements on Art

We shall now attempt a first characterization of Nietzsche's total conception of the essence of art. We will do this by exhibiting a sequence of five statements on art which provide weighty evidence.

Why is art of decisive importance for the task of grounding the principle of the new valuation?

The immediate answer is found in number 797 of *The Will to Power*, which reads: "Art ought to stand in the position of number 794". "The phenomenon 'artist' is still the most perspicuous." At first we will read no further, but consider only this statement. "The most perspicuous," that is, what for us is most accessible in its essence, is the phenomenon "artist", the being of an artist. With this being, the artist, Being lights up for us most immediately and brightly. Why? Nietzsche does not explicitly say why, yet we can easily discover the reason. To be an artist is to be able to bring something forth. But to bring forth means to establish in Being something that does not yet exist. It is as though in bringing-forth we divided upon the coming to be of beings and could see there with utter clarity their essence. Because it is

Five Statements on Art

1. Art is the most perspicuous and familiar configuration of will to power;

2. Art must be grasped in terms of the artist;

3. According to the expanded concept of artist, art is the basic occurrence of all beings; to the extent that they are, beings are self-creating, created;

4. Art is the distinctive countermovement to nihilism.

5. Art is worth more than the truth. "

← Previous   Continue →

Travel Map

Boxes in map: Introduction · Intent of Stack · Contents · Map · Reminiscing · Evaluation · Destination · Flying · Graphic Design · Psychology · Philosophy · Synectics · C5: Graphic Design · C6: Psychology · C7: Philosophy · C8: Synectics · Home · Airport · Definitions · Purpose · Experiment · Why use stack?
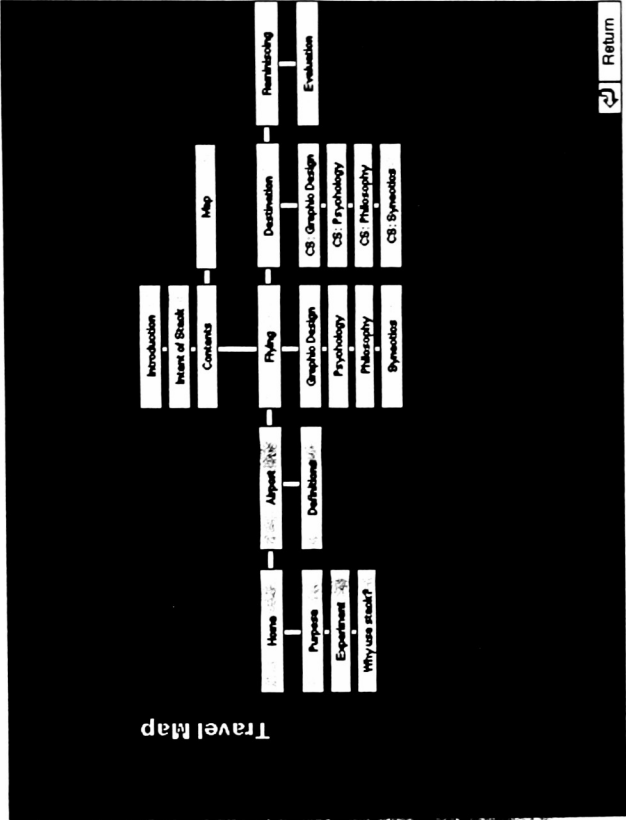
Return

Evaluation

Please take the time to fully complete this brief evaluation of this stack. Simply click on the square you wish to choose for each row. When you have finished the evaluation, please click the "Finished" button at the bottom of the screen. Thankyou for your time and assistance!

		strongly agree	agree	slightly agree	undecided	slightly disagree	disagree	strongly disagree
1.	This stack was educational about the theory of metaphor in various fields.	☐	☐	☐	☐	☐	☐	☐
2.	The stack effectively demonstrated the application of metaphor in various fields.	☐	☐	☐	☐	☐	☐	☐
3.	I believe Hypercard was an effective medium to use for presenting metaphor to students.	☐	☐	☐	☐	☐	☐	☐
4.	The travel metaphor, in relation to the creative process, was easy to understand.	☐	☐	☐	☐	☐	☐	☐
5.	I learned how to recognize metaphor in my every day life.	☐	☐	☐	☐	☐	☐	☐

Please make any further comments below.

Finished!

Reset Answers

Evaluation Comments:

Frank Smith, Freshman, 1_strongly agree, 2_slightly agree, 3_slightly disagree, 4_strongly agree, 5_slightly agree

↑ Previous

Jeff S. Arbegast
May 1993

Appendix F

Case Study

Metaphorical Analysis:

1. Subject being Discussed:
Coiner's Blue Eagle

2. Metaphorical Statement:
"The United States Economy
is a Blue Eagle"

3. Type of Metaphor:
Verbal and Visual

Verbal: "The Blue Eagle is a strong, United
States economy." Also, the NRA logo and
the "U.S." type are literal, verbal metaphors
for higher institutions.

Visual: (see diagrom to the left) The
visual component is a blue eagle holding a
mechanical cog in one claw, and lightning
bolts in the other. The wings of the eagle
are spread as if in flight, or a display of
strength. (almost supporting the NRA logo
above it).

1. Iconic Aspects:
Eagle: strong, powerful force of nature
Mechanical Cog: machinery, economic
strength
Ligntning Bolts: energetic, quick

2. Symbolic Aspects:
Eagle: national symbol for the United States
of America, symbolizes freedom (air),
power and strength
Mechanical Cog: symobizes unity, industry,
symmetry and coordinated effort
Ligting Bolts: symbolizes energy, speed,
tremendous power and effect

4. Psychological Breakdown:
Topic = "United States Economy"
Vehicle = "Blue Eagle"

What is being said? What are the hidden
meanings, or semantic aspects of a Blue
Eagle?

Topic: = freedom, bird, predator, flight,
claws, control, leader, powerful
Vehicle: wealth, personal success,
possessions, happiness, father figure

5. Transformative Statement
a) literal:
 "the Blue Eagle is national success"
b)psychological:
"the Blue Eagle is national happiness"
c)Instantiation or Conceptualization:
"the Blue Eagle is powerful"

6. Synectic Approach
a) Direct: *direct comparison*
Is there a direct comparison? Does the
Blue Eagle resemble, look like, feel like,
etc. the United States of America?
b) Symbolic: *use of symbols or objective
substitiutions for objects, processes or
conditions.*
Blue Eagle = NRA = USA = US citizens,
(reinforced by "we do our part") Text is
literally symbolic of the institutions (US,NRA)

7. Hierarchy of Access
a) Symbolic Metaphoric Mode:

Example:
Mechanical Cog is substituted for industry

b) Synergic/Comparative Mode:
Example:
Mechanical Cog and Eagle together
represent American Industry and/or
American people working in unity

c) Integrative Metaphoric Mode:
Example:
Overall message of metaphoric components
creates the message that the individual
looking at the poster is a part of the
metaphor; the eagle becomes the individual
American rather than the Nation, with the
mechanical cog representing unity of
actiona and purpose, with the lightning
bolts symbolizing immediacy and efficacy.

8. Evaluaton of Analysis
This poster was created with powerful
metaphoric symbols. Each visual and verbal
component of the poster work together to
emphasize the message intended: "America
can be strong economically, with the
immediate help of its industry and civilians."

Appendix G

Evaluation Results

Evaluation

Please take the time to fully complete this brief evaluation of this stack. Simply click on the square you wish to choose for each row. When you have finished the evaluation, please click the "Finished" button at the bottom of the screen. Thankyou for your time and assistance!

	strongly agree	agree	slightly agree	undecided	slightly disagree	disagree	strongly disagree
1. This stack was educational about the theory of metaphor in varous fields.	☐	☐	☐	☐	☐	☐	☐
2. The stack effectively demonstrated the application of metaphor in various fields.	☐	☐	☐	☐	☐	☐	☐
3. I believe Hypercard was an effective medium to use for presenting metaphor to students.	☐	☐	☐	☐	☐	☐	☐
4. The travel metaphor, in relation to the creative process, was easy to understand.	☐	☐	☐	☐	☐	☐	☐
5. I learned how to recognize metaphor in my every day life.	☐	☐	☐	☐	☐	☐	☐

Please make any further comments below:

Finished!

Reset Answers

Evaluation Comments:

↑ Previous | Frank Smith,Freshman,1. strongly agree,2. slightly agree,3. slightly agree,3. slightly disagree,4. strongly agree,5. slightly agree