Present Absence

The Visible and Invisible in Graphic Design

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The Visible and Invisible in Graphic Design

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The Visible and Invisible in Graphic Design

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and especially my mother
who through her absence
has taught me to see
with an appreciative eye
Present Absence

*The Visible and Invisible in Graphic Design*

Michelle Carfagno

*Opposition is relative*

*but formulating oppositions in science, in art, and in other intellectual pursuits serves as an aid to thought, conceptualization, and progress.*

Albert Rothenberg, M.D., *The Emerging Goddess*, 1979
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Situation Analysis

In a world where information is increasingly complicated and global boundaries are decreasingly evident, people are forced to become excavators in the search for useful information. Our daily experiences involve receiving many messages against a variety of backgrounds. We are asked to utilize the evident or the direct, that which is presented to us in the foreground as a priority, while being unaware of the power of the passive or the background.

As the presentation of information and the conveying of a message becomes increasingly aggressive in its approach, the designer may overemphasize primary information and overlook an opposing view. This opposing view is a necessary consideration for successful message making and the creation of a dynamic, yet balanced space. The inclusion or reference to meaningful opposition takes intellectual and visual acuity to understand and assimilate into one's sensory experience.

For a user to interpret direct or foreground information, she must refer to indirect or background information. Thus, in order for ideas and intentions to be fulfilled, designers must be aware of the seemingly empty space or the assumed silence from the unspoken word as an element that is interpreted as strong or weak, fueled with the power to cohere or shatter a message.

This project informs and empowers a prospective designer to search for the indirect and appreciate the significance of interpreting what is in the background, both visually and theoretically. It reveals how the obscure or absence of information is as important as the obvious or tangible by uncovering rich messages that exist in an opposite space. It contributes to the development of the graphic designer as information translator by providing insights and facilitating new connections in regards to the visible and invisible nature of design.

Our daily experiences involve receiving many messages against a variety of backgrounds.
Hypothesis
The figure ground relationship allows a designer to enrich the viewer's experience by an inclusive activation of positive and negative space. By creating an opposite space that is equally treated with content and aesthetic sensitivity, the designer facilitates a rich conversation between the foreground and background of a visual composition.

This project proves that the visual communication concept of figure ground provides a thought structure which allows extendibility and translation of the following dynamic relationships:

- positive and negative space in the second dimension
- solids and voids in the third dimension
- masculine and feminine in the visual arts
- figure and ground from a personal view

Through this approach, I reveal their connections by juxtaposing selected theory and supporting visuals within a shared space. I also allow them to occupy their own space, thereby respecting the value and importance of each independent subject area. This project validates that allowing a dialogue between opposing spaces is perceptually dynamic, inclusive in context and environment, and more meaningful than the heroic voice of a dominant monologue.

Goals and Objectives
As a designer, my initial goal for this project was to acquire a visual and theoretical vocabulary of the figure ground relationship in visual communication. Upon developing this vocabulary, my secondary goal was to translate this definition to applications in other fields of study. This would allow an expanded meaning to grow from a rich study of specific examples across disciplines. A crucial objective was to discover meaningful relationships and synthesize my own work with the existing body of information to ensure that the new model reflects external and internal exploration. My ultimate goal was to translate the model into an educational tool that could be integrated into basic design pedagogy.

This project proves that the visual communication concept of figure ground provides a thought structure which allows extendibility and translation of selected relationships.
Edgar Rubin, 1915 – 1921
The origins of the figure ground relationship come from the systematic study of Edgar Rubin, a Danish perceptual psychologist in the early 1900s. Rubin found a number of conditions that determine which surface of a two-dimensional composition assumes the figure or foreground and the ground or background. His notable contribution to the field of visual perception is the ambiguous figure ground reversal where an illusory surface switches to something else. Rubin’s historical example is the faces/vase image which oscillates to form a vase in the negative space of the double profiles.

Paul Klee, 1919 – 1930
The Thinking Eye is the first volume from the notebooks of painter and BauHaus instructor, Paul Klee. Klee’s notes provide a theoretical and formal discourse vital to visual communication projects, including the figure ground relationship. Klee’s principles of endotopic and exotopic treatment are meaningful as they examine the simultaneous visualization of inside and outside spaces of a composition. Klee’s concept of polarity also reinforces the interdependence of foreground and background for a successful visual composition and message. He stated:

A concept is not thinkable without its opposite. There is no such thing as a concept itself; generally speaking, there are only pairs of concepts. What does ‘above’ mean if there is no ‘below’? What does ‘left’ mean if there is no ‘right’? What does ‘behind’ mean if there is no ‘in front’?
Rudolph Arnheim, 1948 – 1954

In 1954, Rudolph Arnheim discussed in *Art and Visual Perception* the structure of two dimensional space and the origins of the figure ground relationship. In 1948, he had stated in *The Holes of Henry Moore: On the Function of Space in Sculpture* that negative space in sculpture is a strong and dynamic form where Moore’s holes are not merely dead or empty space, but substantial, hollow containers of space. This describes the idea of three-dimensional space as mass-positive object, space-positive object, or a mixture of both where solids sculpt the space around them. This provides the basis of transferring the figure ground relationship to the three dimensional environment, specifically architectural projects.

![Moore's Tense Figure with holes functioning as containers of space](image)

E.H. Gombrich, 1952

In *Art and Illusion*, Gombrich described ambiguity in art and its affects on the viewer’s interpretation of a visual piece through historical examples of negative space. Through identifying specific empty spaces in a range of artifacts, he illustrates how the principle of figure ground reversal has been evident since the work of the Greek Vase painters in 520 B.C. Gombrich cites Chinese art theorists as exemplars in understanding the power of negative space and the absence of form to give expression to the invisible.

![Mustard Seed Garden Manuel of Painting, 1679–1901](image)

Gyorgy Kepes, 1969

In *Language of Vision*, teacher, author and artist Gyorgy Kepes declared the reference to an opposite is inevitable and unavoidable by the very nature of visual communication. He described the plastic image in terms of figure and background organization:

> We cannot bear chaos – the disturbance of equilibrium in the field of experience. Consequently, we immediately form light into shapes and figures. Exposed to a visual field, one organizes that field at once into two opposing elements, into a figure against a background. One speaks of white with inevitable implied reference to black, grey, or other colors. To convey the meaning of ‘yes’ one implies a latent understanding of ‘no’. A unified whole is thus created. Every image is based upon this dynamic dualism, the unity of opposites.

![Kepes' figure and ground fluctuation](image)
Research

The Emerging Goddess, Albert Rothenberg M.D.

Rothenberg analyzed the creative process in The Emerging Goddess in terms of Homeospatial and Janusian thinking which I apply to the figure ground relationship. Rothenberg defined Homeospatial thinking as a spatial abstraction for highly creative people. He wrote:

\[ \text{The homeospatial conception is based on the creator's idea that two or more entities ought to or should have mutual attributes.} \]

I accepted this analysis of the creative process and utilized it as supportive theory of the figure ground relationship. From the perspective of the designer's cognitive mode, this reveals the importance and necessity of conceiving mutually dependent spaces when creating a visual communication piece. These mutually dependent spaces can be within a two dimensional composition or can exist in three dimensional space, such as architecture. This reveals another important connection of Rothenberg's work to this project when he discusses the concerns of architects. He explained:

\[ \text{Architects are preeminently concerned with space and they conceptualize in spatial terms. Functional considerations of developing 'multiuse space' and artistic considerations of keeping in mind multiple spatial aspects... all suggest the operation of homeospatial thinking... empty space is an object to be manipulated by creative architects. But, in addition to considering its perceptual interaction with solid massive areas, the architect must manipulate empty space for functional use.} \]

Rothenberg continues to provide a strong example of this with the work of American architect, Louis Kahn, and his manipulation of solids and empty space. This type of cognitive process also relates to the creation of visual translations by producing visual metaphors. As Rothenberg described Homeospatial thinking:

\[ \text{One of its chief effects is to produce metaphors, artistic metaphors as well as those used in scientific theory. It produces these metaphors sometimes in combination with Janusian thinking and sometimes in a more direct way.} \]

This leads to Rothenberg's discussion of Janusian thinking and its integration into this project's research. In The Emerging Goddess, he proposed a non-linear, total systems view of creativity where oppositions are operating simultaneously and exist as two antithetical forces. This theory provides an argument for successful figure ground relationships stemming from a type of abstract thinking where the designer is able to formulate and visualize two spaces simultaneously. Rothenberg described the importance of conceiving both positive and negative space simultaneously when creating from a whole systems process:

\[ \text{Perceiving, conceiving, and executing are intricately and constantly related. The Janusian process of formulating, reversing, and equating positive and negative space is a continuing matter, operating during the early phases of mental conception of the work of art and guiding the creator's hand as he proceeds. In the course of producing visual forms, he produces other filled and empty spaces as he goes; these influence his perception and his perceptual formulations influence further execution. Merely to visualize differently is not sufficient. Visualization, conception, and execution are integrated in an active ongoing process.} \]
As the designer visualizes, conceives, and executes her creative sensitivity to positive and negative space, she also formulates oppositions as a method of setting limits and allowing elements of a composition to exist in relation to one another. Rothenberg explained that oppositions are not simple binary terms:

Although formulating oppositions involves limit setting and specificity, that by no means interferes with the subtlety and complexity of creative thought. For one thing, oppositions themselves frequently involve highly complex interrelationships and domains of knowledge.

This concept of opposition becomes the underlying structure for this project and does not aim to oversimplify the areas of study. On the contrary, it is a necessary part of the creative process; Rothenberg reasons:

Creative people... are drawn to opposition and they tend to formulate opposites because such a procedure is useful, and often critical, for making discoveries and producing artistic creations.

Perception and Imagery, Dr. Richard D. Zakia
In Zakia’s first chapter, Selection, he devoted a section to the figure ground relationship that goes beyond a preliminary description by offering a more extensive analysis. Zakia identified the nomenclature involved with this relationship in cross-disciplinary study:

- psychology figure ground
- art/photography positive negative space
- engineering signal noise ratio

Zakia also provided visual examples of these relationships from the viewpoint of a psychologist, designer, photographer, photographic engineer, and a television engineer. In addition to his supportive argument of the cross-disciplinary figure ground relationship, he also supplied sensory experiences which were non-visual to extend the concept to our daily life experiences. Zakia’s work on this topic provided another level of theoretical abstraction to fuel and validate this project.

During this stage of research, Zakia was contacted via email by the author for comments, suggestions and reactions to this project. Zakia commented on analyzing visual examples from a figure ground perspective:

In critiquing any of the works you should consider taking a gestalt approach, that is taking everything into account that might be considered ‘ground’, not seen or attended to. ...something that is not actually in the work, but lies outside the work...reading between the lines...one might think of this as ‘ground’...

for full email dialogue see appendix b

Yin Yang and Taoist Philosophy
Research was conducted about the Tao symbol of Yin Yang and its relation to figure ground. It is not reported as the final application does not include this subject area due to its elimination during intermediate evaluation.

Since all of our senses are tied into the same central nervous system it is not surprising that a concept such as figure ground should be valid for all senses. Dr. Richard Zakia, Perception and Imagery, 1997
Complexity and Contradiction in Architecture, Robert Venturi

My research on Robert Venturi and his architectural theory was based upon attending Robert Venturi and Post Modernism, a course in the RIT College of Liberal Arts taught by Professor Houghton D. Wetherald. This course was based on a close analysis of the writings and buildings of Robert Venturi, specifically an in-depth study of his book, Complexity and Contradiction in Architecture. Of the many concepts embodied in this book, some related strongly to aspects inherent in the figure-ground relationship; specifically, ambiguity, tension, duality and simultaneity.

In his writings, Venturi valued an architecture of opposites and celebrated the uncertainty inherent in an architecture of complexity and contradiction found throughout architectural history. This discourse, supported by visual examples, revealed how there exists an artfulness in the oscillating relationships of unresolved architectural elements. Venturi is fascinated with an architecture that encourages changing perceptions, decentralized composition, visual imbalance, and all the tensions inherent therein. A difficult unity through inclusion and diversity is appreciated above an easy unity of the parts.

Venturi's inclusive architecture embraces idea and communication, functional and aesthetic sensitivity, while simultaneously looking to the past, present and future. Venturi used the phrase both-and to describe this inclusive architecture, that is an architecture of an all-encompassing nature as opposed to the simplicity and unity of the exclusivist modernist tradition. The concept of both-and is central to the figure-ground relationship; for example, a shape is both positive and negative space, both faces and a vase.

Venturi employs a wide variety of word pairs associated with both-and to identify a building's contradictory qualities. For example, an element may be both old and new, that is the marriage of historical allusions to a contemporary form; both good and bad, that is when the apparent irrationality of the part is justified by the rationality of the whole; the play of both order and circumstance, e.g. "the valid order", that is when the architect sets up an order, but then breaks it to respond to functional exigency; a willingness to respond to both outside and inside forces, wherein the outside is as important as the inside; a sensitivity to both dominant and residual space; and the duality which embodies both unity and tension.

The most valuable outcome of this course-based research was the ability to translate theoretical and ideological writings through the development and support of a three-dimensional visual vocabulary. This visual vocabulary enhanced my sensitivity to the meaning and perception of a visual message which is central to the creation of an ambiguous figure-ground relationship. As Venturi declared:

...a paradox inherent in art: the complexity and contradiction that results from the juxtaposition of what an image is and what it seems. Joseph Albers calls 'the discrepancy between physical fact and psychic effect' a contradiction which is 'the origin of art'. And, indeed, complexity of meaning, with its resultant ambiguity and tension has been characteristic of painting and amply recognized in art criticism. ...the basis of Optical Art is shifting juxtapositions and ambiguous dualities relating to form and expression. Pop painters, too, have employed ambiguity to create paradoxical content as well as to exploit perceptual possibilities.

Inherent in an architecture of opposites is the inclusive whole.

Robert Venturi, Complexity and Contradiction, 1977
Postmodernism and Feminist Creativity

This area of research, which dealt with the figure ground relationship in connection to gender, creativity and the visual arts, involved many textual and visual resources. It included general surveys on the position of women in art history, in addition to critical analyses and comprehensive essays on selected female Postmodern artists and designers. My translation of the figure ground relationship addressed sexual difference and creativity through the dimension of visibility and invisibility; the visible male creator as opposed to the invisible female creator. The following merely highlights and emphasizes the theory that proved most valuable to the figure ground relationship as a deconstruction and inversion of masculinity in the visual arts.

The pervasive Modernist movement of the early to mid 1900s did not reflect the voices of women or minority groups, thus establishing the male view as the significant artistic inquiry of that time. This is not proclaiming that female artists and designers did not exist during the Modernist movement. However, it is proclaiming that their lack of representation and accreditation in the fields of art and design history only validated the visible male aesthetic as a superior viewpoint. This male perspective is not limited solely to the visual language, as the product of the creative act extends to our social, political and intellectual environment.

A complex and interdependent relationship exists between art, design, religion, politics, economy, and social structure. These relationships are affected by the decision to omit or to acknowledge sexual difference.

Yet, simple acknowledgement is just the beginning. A re-investigation of art and design history is necessary to understand the multi-faceted subject of gender and visual communication, thereby shedding light on the invisible history of a marginalized gender. This would reveal the overlooked historical work of neglected female creators, while altering the methods of critique and comparison by providing an inclusive working context for artists and designers. In Visibly Feminine (p. 205), Griselda Pollock explained:

...the discipline (art history) itself is a component of cultural hegemony maintaining and reproducing dominative social relations through what it studies and teaches and what it omits or marginalises, and through how it defines what history is, what art is, and who and what the artist is. The myth of free, individual creativity is gender specific; it is exclusively masculine. We never talk of men artists or male art; if you wish to specify that the artist is female the term must be qualified with a feminine adjectival prefix.

In the 1970s and 80s, American women increasingly challenged the superior visual culture through exploring diverse content and media. These women created visual commentary by reacting to the predominately masculine work of their predecessors through referencing historical imagery, while discussing contemporary social and political conditions. The aesthetic reaction to the Modernist visual vocabulary and the social reaction to dominating cultural values and attitudes created a new movement, accepted and labeled by some as Postmodernism. In Women, Art and Society (p. 350), Whitney Chadwick explained:

The fact that Postmodernism draws heavily on existing representations, rather than inventing new styles, and that it often derives its imagery from mass media or popular culture, has drawn attention to the ways that sexual difference are produced and reinforced in these images.

Barbara Kruger and Laurie Anderson are eventually chosen as an essential component of my final application; they represent an integration of old and new, by creating messages that reorganize cultural coding while discussing existing social and power structures. In Feminist Visual Culture (p. 275), Sarah Chaplin concurred:

Laurie Anderson, Jenny Holzer, Cindy Sherman and Barbara Kruger are the ideal travel companions in postmodernity...
A Sociology of the Unmarked: Redirecting our Focus, Wayne Brekhus

This article was the only supportive writing that equated figure and ground to men and women in society. It provided a short description that did not lead to any new insights on the topic, but did validate the project’s assertion that figure ground could be translated to non-visual issues, such as gender. Brekhus stated:

The linguistic contrast between the marked and the unmarked closely follows visual psychology's distinction between 'figure' and 'ground'. The marked represents the focused figure of any contrast and the unmarked represents the unaccented 'ground'. While gestalt psychologists focus on figure and ground as they relate to vision, these concepts also apply to our non-visual, mental perception of the world. We actively attend to and thus 'mark' some items of our social environment while ignoring, and thus leaving 'unmarked' others. The marked represents those elements of contrast that are actively defined as exceptional and socially specialized while 'the unmarked represents the vast expanse of social reality that is passively defined as unremarkable and socially generic'. Markedness can be binary as with gender (where men are regarded as the default human and women are regarded as a gender-specific subset...

Brekhus also discussed a type of reverse marking from a social science perspective. I translated this to the figure ground reversal phenomena that exists when background becomes foreground and vice versa in a successful ambiguous image. As Brekhus developed this theory, it abandoned the oscillating relationship of marked and unmarked and moved toward a complete marked composition. He explained:

Reverse marking begins to destabilize markedness by inverting the traditional 'figure' and 'ground' relationship of the marked and unmarked. ... Just as an Escher painting has no 'ground' beyond the highlighted figures, a social science of the mundane should leave no area of social life unexamined. Thus it must ultimately create picture where there is no ground, only figure...

This sociological research allowed the project to transfer gender issues to a visual medium through studying the work of several feminist artists. Their work and theory assumed a position of otherness which could be equated to ground or the unremarkable gender subset. Eventually, the feminist research focused on the work of Barbara Kruger and Laurie Anderson. They represented two media forms of visual art with different content and approaches, while still supporting the figure ground relationship.

Kruger's work represented a close connection to graphic design, utilizing text and imagery to create thought provoking messages about social issues connected to power imbalance. Anderson's multi-dimensional work solicited perceptual participation from the audience during her live art performance installations and, as she stated, “is always about communicating.”

This research heightened my creative abilities through the pervasive act of thinking and seeing, while also forcing me to question what others think I should see.

The linguistic contrast between the marked and the unmarked closely follows visual psychology's distinction between 'figure' and 'ground'
Wayne Brekhus, A Sociology of the Unmarked, 1998
The Verbal Approach

The chief advisor of this project recommended taking a verbal approach to the organization and sorting of research by eliminating imagery in the preliminary synthesis stages. The first step was to extract keyword descriptions or short phrases that highlighted the theories of each topic area. At this stage of the process, each subject was labeled a critical lens and identified as a separate entity. This provided four independent views of the figure ground relationship. At the preliminary stages the research areas were:

- **Solids and Voids in the Third Dimension**
- **Feminist Discourse in the Visual Arts**
- **Perception Theory and Creative Process**
- **Taoist Symbolism**

Tao is eventually replaced by the author's personal view in response to intermediate evaluation from committee members and peers.

The quick capsule of each research area were recorded as follows:

**Solids and Voids in the Third Dimension**
- Henry Moore's Sculpture:
- *Simultaneous Opposition, Interplay and Interdependence*
- *Circulation of Energy, Active Containers of Space*
- *Intruding Invisible Outer Force*
- Robert Venturi's Architecture:
- *Complexity and Contradiction, Richness of Meaning*
- *Inclusive and Context Sensitive, Ambiguity and Tension, Both – And Double Functioning Elements*

**Feminist Discourse in the Visual Arts**
- Mary Kelly:
- *Scripto-visual Work, Language and Sexuality, Psychoanalytical Theory*
- Jenny Holzer:
- *Art as Information, Truisms and Essays, Exposes Patriachal Voice*
- Barbara Kruger:
- *Photographs and Words, Popular Culture Medium, Exchange of Power*
- Guerilla Girls:
- *Statistical Posters, Strength of Comparisons, Dominant and Dominated*

**Perception Theory and Creative Process**
- Gestalt Psychology:
- *Division of Visual Field, Foreground/Background, Simple Pattern Prevails*
- Janusian Thinking:
- *Homeospatial Conception, Simultaneous Opposing Forces*
- *Two Interrelated Modes*

**Taoist Symbolism**
- Yin Yang Cyclical Worldview, Universal Life Energies
- *Dynamic Harmony, Meaningful Opposition*
- *Dependent Polarity, Separateness and Unity*
**Polar Mapping**
Following the purely verbal approach, the four research areas were visually mapped with additional keywords to discover patterns or relationships. By establishing two categories within each area, opposing words or figure ground terms could be assigned to each category within each area of research. Through this type of polar mapping, relationships evolved that had potential to become non-linear and move through each area. The following diagram was a major component of the synthesis stage of this project.
**Relationship Diagramming**

The following image shows the preliminary sketch in the process of visually diagramming the four areas of research. The goal at this stage of the project was to see organically how the parts interact by experimenting with hierarchy and visual coding through the placement and the size of the elements. The figure ground perspective was assumed from a binary philosophical view, separating western and eastern ideologies. This sketch supports the chief advisor's statement that out of frustration can come resolution and clarity as it marked the transition from the challenging synthesis stage to the fruitful ideation stage.
A Visual Metaphor

The visual translation of the research and synthesis process began with the creation of a theoretical metaphor caused by a mode of Homeospatial thinking. This was discussed earlier in the Research section as a cognitive process that related to the creation of visual metaphors. In The Emerging Goddess, Rothenberg described one outcome of Homeospatial thinking:

One of its chief effects is to produce metaphors, artistic metaphors as well as those used in scientific theory.

This project's integration of artistic and scientific theory influenced the final choice of a window as a meaningful metaphor that extended into my ideation process. The following diagram reveals the exploration of the metaphor's ability to be subdivided into parts and accommodate the complex needs of this topic.

It is the space opened in a wall that serves as a window.

Lao Tse, quoted from Language of Vision by Gyorgy Kepes
In or Out of View?
The metaphor of the window doubled as a thought structure where analytical boundaries were established, while providing a visual framework to position concepts in and out of view. The following diagram shows the preliminary organization of information where each topic occupies its own space, yet slides into one another to share and fill the space of the vertical window. The words that define each topic are positioned in or out of view based on their correlation with the concept of figure or ground. For example, in the Solids and Voids section, filled is inside and empty is outside of the bounding frame of the abstracted window.
The following diagram reveals a different approach to the conceptual and spatial organization of the project. The square window divides the composition into four square quadrants where each subject area is encircled independently, while overlapping its neighboring subject area. The white, centered circle allows a formal composition of strong figure ground elements, while theoretical figure ground concepts support and begin to enhance the aesthetic decisions.

This stage of ideation is important as it also shows the reaction to intermediate evaluation from committee members and resource people. The inclusion of an additional topic area, Sound and Silence in the Musical Arts was recommended by Dr. Zakia and Professor Ruhling, while the elimination of Perception Theory and Creative Process was conducted by the author.

Please refer to page 22, Intermediate Evaluation, for a more detailed account of these decisions.
**Limited or Unlimited Expression?**
At this stage of the project, the square diagrammatic form was broken by isolating the four quadrants to conduct individual ideation. This exploration verified that each area had a responsibility to the meaning of the overall shape of the window. Interpretive pieces were created to visually examine theories and ideas in a more subjective manner. The first image is part of the thumbnail sketches for each separate area, while the second image shows a refined study of one quadrant, *Solids and Voids in the Third Dimension*. The pushing and pulling of an individual quadrant was my response to the evaluative question:

*What are the limitations or boundaries of this thought structure or does it find different ways of unlimited expression?*

This allowed me to gain a heightened awareness of a specific figure ground translation, while appreciating the significance of setting boundaries, both conceptually and visually.
The Systems Approach

The creation of an underlying structure for a system of diagrams that viewed each topic area both independently and relative to one another was central to this project. After selecting a diagram shape from earlier ideation, refinements were made through re-establishing the four research areas. At this stage the project committed to the following dynamic relationships:

- positive and negative space in the second dimension
- solids and voids in the third dimension
- masculine and feminine in the visual arts
- figure and ground from a personal view

From this point on, the following structure was implemented in developing the final application. My process was truly organic as the formal characteristics of the diagram reflected a holistic view of shared space, while respecting the individual spaces of each figure ground relationship.
Intermediate Evaluation

**Dr. Richard D. Zakia**

During the early stages of research, teacher and author, Dr. Richard D. Zakia was contacted via email for comments, suggestions and reactions to the scope of this project. The following comments solicited further ideation including **Music** as an additional cross-disciplinary research area.

*First let me say that figure ground is also important in an auditory mode as it is in the visual mode. It probably extends to all of our senses.*

*In music, for example, the interval (ground) between any two notes (figure) is critical, as it is in the visual (the interval between two visual elements).*

*for full email see appendix b*

Following individual committee meetings, Dr. Zakia was contacted in regards to decreasing my research areas by eliminating **Music** and **Tao Philosophy** and inserting my personal view. He approved:

*I think narrowing your search as your committee has suggested makes good sense.*

*for full email see appendix c*

**Individual Committee Meetings**

During the later stages of ideation, individual meetings with committee members allowed for evaluation of the research areas and diagram exploration. The inclusion of **Music** as an additional topic area was discussed during these meetings, in addition to specific issues relative to the member's area of expertise.

**Professor Houghton Wetherald** supported the correlation of Music and the figure ground relationship through an impromptu discussion with Professor Ruhling of the RIT College of Liberal Arts Fine Arts department. Wetherald extended Professor Ruhling's assistance as a resource person, but eventually we decided it would be more beneficial to maintain the existing parameters of the project.

We spent the majority of our individual meetings reviewing Venturi's architectural theory and how it could be translated from a figure ground perspective. We also discussed the work of Alvar Aalto, a Modernist Finnish architect, which was relevant as it became an integral part of the final application.

Additionally, Professor Wetherald evaluated my knowledge of Venturi's theory throughout the Winter quarter in **Robert Venturi and Post Modernism**, a course in the RIT College of Liberal Arts.

![Sketches by Professor Wetherald created during individual evaluation meetings](image-url)
Individual Committee Meetings continued

Dr. Tina Lent analyzed the difference between Eastern and Western philosophical views and questioned the inclusion of certain research areas. Dr. Lent advised narrowing the focus by eliminating Music and Tao Philosophy from my research and possibly inserting them at a later stage in the project.

The political dimensions of the figure ground relationship was evaluated and questioned when I compared Feminist Post Modernist work and Architectural Post Modernist work. Dr. Lent described how Feminists polemicize their reaction to Modernists, while architects predominately aestheticize their reaction to Modernists. From both perspectives, I felt that their was a political dimension to their work and that increased recognition did not necessarily imply harmony or breed theoretical or visual consistency.

Professor Roger Remington, as chief advisor, evaluated my work on a weekly basis. The majority of the research on Visual Perception and Communications was guided by his expertise in Graphic Design History. During the Synthesis and Ideation stage, Remington suggested testing the paradigm through a two-dimensional and three dimensional model. This led to further ideation as seen on page 20 and 21.

Thesis Sharing

This was a required presentation given to first year graduate graphic design students and faculty comprised of a twenty minute verbal summary accompanied by digitally displayed visuals. The report was followed by questions and comments. The feedback utilized for intermediate evaluation included:

- Presentation of information is organized, clear and understandable
- Need to work out some content descriptions
- Visually, my diagrams are interesting and aesthetically pleasing
- Matrices or simple charts would not have been as visually interesting
- Diagrams need my explanation and description, do not stand on their own
- One is drawn into the project from the imagery first, then word pairs
- One understands through visual association of text and graphics
- Project is crucial for design in regards to a whole space approach
- Negative space is important for all visual media-2d, 3d, and multimedia
- People don’t see negative space as important or immediately notice it
- Creative people are more aware of negative space than non-visual people
- Negative space has been addressed most in our graduate typography studio
- Cross-disciplinary study allows a designer to become more sensitive
Implementation

Language and Image
The core diagrams for the implementation of this project came from the final stages of ideation where concepts were diagrammatically explored through a verbal approach. The selected relationships that bridge the four areas of study were suggested by the diatomic word pairs at each transition area. After reviewing the body of work, imagery was chosen to enforce the shared spaces of each discipline.

The following image is an example of where the same word pairs, unmarked marked, were used as a transitional relationship between Positive and Negative in the Second Dimension and Masculine and Feminine in the Visual Arts. This was further developed through inserting visual examples from each discipline into the composition to support the connection.

Diagramming is a way to capture ideas and make them visible.
It is a skill to show relationships and to emphasize critical points.
Kristina Hooper Woolsey, VizAbility, 1996
Language and Image continued

Positive and Negative in the Second Dimension

Every image is based on a dynamic duality, the unity of opposition. Gyorgy Kepes

Edgar Rubin
First Systematic Study of Figure-Ground
Oscillating Reversals of Light and Dark
Structured Ambiguity and Illusion

Positive and Negative in the Second Dimension quadrant with transition areas
Language and Image continued

Figure and Ground from a Personal View

Design and Life Experiences
- Living in the Present
- Learning from the Past
- Appreciating Technology
- Respecting Nature
- Searching for Connections
- Understanding Difference
- Finding a Voice
- Appreciating Silence

Figure and Ground from a Personal View quadrant with transition areas
Language and Image continued

Solids and Voids in the Third Dimension

Herrmann Modernism through Exceptional Asymmetry and Inwardly Tourist Forming, with Contextual Freedom

Robert Venturi

Acknowledging Complexity and Curvature

Richness of Meaning above Clarity of Meaning

Meaningful Tension between Duality and Unity
Language and Image continued

Masculine and Feminine in the Visual Arts quadrant with transition areas

Barbara Kruger
Combines Fragmented Photographs and Text
Images from Popular Culture and Mass Media
Draws Both Power Imbalance with Female Voice

Leslie Anderson
Unexpected Gesture in Performance/Installations
Transforms Opposites and the Potency of the Double
Audience Resenser through Perceptual Participation
Diagram showing the four topics brought together to form one composition
Diagram Evolution

Following the creation of the system of diagrams that explored cross-disciplinary language and image relationships, I examined methods of extending this thought structure to an application. My goal was to allow the duality concepts that define the ideas underlying each area of study to be compared with a multi-dimensional activity. This application would allow all four spaces to interact and converse through a process of forced juxtaposition.

The following image represents the concept of two spinning discs that, with human interaction, are able to produce every possible combination of textual duality. This allows for verbal comparisons which could produce visual comparisons by the creation of reference cards corresponding to each word pair. This concept led to the development of a creative problem solving tool for design students.

At this stage of development, I conducted application research by studying VizAbility by Kristina Hooper Woolsey. This educational kit combined a handbook, CD-Rom, and a sketchbook. As she stated:

VizAbility is designed to encourage cycles of reflection and action, abstract ideas and concrete examples, through alternating experiences of reading, hands-on computer activities, and off-screen sketching on paper.

for example from VizAbility see appendix e
Envisioning 360°

After studying VizAbility and revisiting my initial goals and objectives for this project, I designed and developed Envisioning 360°. This prototype is an experiential tool that would be used in a Basic Design course by first and second year college design students. This generative device would aid in building the foundation of a student's creative experience by stimulating and generating ideas for possible design solutions. The activity would offer opportunities for the future integration of connection-making methodology, while conceiving and perceiving a design solution.

Envisioning 360° would be used as a creative source for visualizing ideas and fostering solutions in conjunction with studio projects. It would stress research, process, and critical dialogue through the interaction of simulated design teams or small groups of students. The complete educational package would consist of a spinning disc set for language comparison, reference cards for image comparison, and a resource workbook for the instructor.

The underlying activity would involve a process of forced juxtaposition through the spinning movement of two discs that correspond to reference cards. Through the use of the discs, the student would compare different sets of opposing word pairs relating to four areas of study. In conjunction with these verbal comparisons, the user would also reference visual comparisons through the use of image cards.

The instructional workbook would contain potential assignments for individual students, as well as collaborative exercises to use in conjunction with the disc and cards. Discussion, writing and ideation techniques would also be explained to further develop the student's verbal and visual vocabulary. The research areas for this prototype were extracted directly from my thesis project, but they could be replaced with congruent topics.

For example, the two-dimensional quadrant on positive and negative space could utilize a different design principle to begin the comparative process. Hypothetically, that quadrant would examine big and little scale and the remaining three quadrants would be cross-disciplinary translations of the scale relationship.

By forcing unusual combinations of the verbal and the visual from divergent topics, the prospective designer acquires the skill of associative thinking through knowledgeable connection-making. The basic outcome from the use of this game is the understanding of the importance of the language image relationship, an essential component of this project and the graphic design discipline. The advanced result would be the students' ability to look across disciplines for inspiration and creative fuel in order to develop an imaginative, yet informed eye and mind.

As a prototype, Envisioning 360° is in its preliminary stages. I have designed and developed specific components, for example two image cards from each quadrant, in order to test the whole systems approach. It has not been tested with students or instructors, yet I have interviewed Basic Design instructors in regards to its accessibility and relevance. An educational tool with this potential and degree of sophistication must be repeatedly tested re-designed, and re-developed to ensure the intended results.

The images on the following pages show the design of the spinning disc and selected reference cards from the final prototype.

The activity would offer opportunities for the future integration of connection-making methodology, while conceiving and perceiving a design solution.
Envisioning 360° continued

Preliminary design of board with spinning disc containing opposing word pairs for language comparison
Envisioning 360° continued

The magic banister offers an unstable image that switches from a pattern of convex columns to concave columns. According to Edgar Rubin's rules of figure ground perception, the black elements would be perceived as figure and the white elements would be perceived as ground.

Convexity wins out over concavity

Reference card from Positive and Negative in the Second Dimension quadrant corresponding to convex concave word pair
Envisioning 360° continued

The largest figure stands by itself in the foreground to speak out against the pattern in the background. The message is reinforced by the text and the disappearing red bands of the repeating elements.

Listening to others, yet asserting oneself

Reference card from Figure and Ground from a Personal View quadrant corresponding to alone together word pair
The kitchen volume of Robert Venturi's house in North Delaware pushes out into the right hand end of the colonnade to break the established order. This collision of functional circumstance with a classical formal system is dealt with by merging the split column with the kitchen facade on a continuous plane, thus partially resolving an area of high tension.

A valid order that admits circumstance

Reference card from Solids and Voids in the Third Dimension quadrant corresponding to order circumstance word pair
The auditorium of Alvar Aalto's Viipuri City Library in Finland reveals a dichotomy in its design. The undulating ceiling supports the interior requirements by addressing the acoustical function of the space while simultaneously acknowledging the organic forms of the site as seen through the glass wall. This visual continuity contradicts and confirms the fact that the inside is not the outside as evident in the juxtaposition of the undulating ceiling and the rectilinear articulation of the glass wall.

Division and unity of inside and outside

Reference card from *Solids and Voids in the Third Dimension* quadrant corresponding to inside outside word pair
Say Hello, a drawing from Laurie Anderson's performance piece, United States, comments on the pairing of the active man and the passive woman. By using alternating voices of submission and authority with this image, she layers misogyny with the irony of communication.

In the United States, hello looks just like goodbye.
Dissemination

Bevier Gallery Exhibit past
The dissemination of this project began in the MFA Thesis exhibit at RIT’s Bevier Gallery on March 15, 2002 and ran for two and a half weeks. The following photographs were taken on the opening night and they show the full installation and a detail of my introduction panel. This panel was very important as it showed the traditional faces vase, figure ground reversal image redesigned through the use of my profiles. The synthesis of form and content added another layer of meaning to the dissemination process of this project. The opening night allowed meaningful discourse about aspects of this paradigm with a diverse audience including:

- art and design faculty, students, and professionals
- photographers and imaging specialists
- feminist philosophers and writers
- engineers and computer scientists

The dialogue with this audience facilitated visual and theoretical reactions regarding this project, while incorporating a wide range of views and interpretations.

MFA Thesis installation at Bevier Gallery, March 15, 2002

Author explaining Edgar Rubin’s original figure ground study and her personal translation as seen in the introduction panel

Basic Design Course future
The projected dissemination of the final application, Envisioning 360°, would be within the context of an undergraduate design program. First and second year students would be introduced to this learning tool in a Foundation or Basic Design course through the instructor’s implementation of the educational package. The students’ experiences with the classroom exercises would allow theory and methods to be assimilated into the prospective designer’s creative process and design ideology. Whether the students accept or reject the content is irrelevant; even limited exposure would undoubtedly impact their critical thinking abilities.
Retrospective Evaluation

Basic Design Instructor
The prototype was presented to David Jay Reed, an RIT instructor of the Foundation Design Studio in the College of Imaging Arts & Sciences during the Spring 2002 quarter. His analysis was used to assess the necessity and relevance of the learning tool and to gain a better understanding of the studio environment. His most relevant responses included:

I teach a visual vocabulary through words as well as imagery.
I emphasize a strong process, including ideation, thumbnails and roughs.
Taking notes and writing is important, theory is critical.
The classes are large, I assign individual projects and small discussion groups.
I do not use outside educational tools or kits for classroom exercises.
I use examples from other disciplines when describing basic design principles.
The content may be too sophisticated for first and second year students.
This kit is important for the student to learn how to see design in everything.

Basic Design Students
For a more direct assessment of its practicality and accessibility, a studio experience could be simulated where the intended users would interact with the tool. This would be followed by a discussion facilitated by the author where feedback would be recorded for future research and further development.

Thesis Committee
At the presentation of the final prototype design, committee members gave feedback on the design and content of the resource cards. This feedback is being recorded as retrospective evaluation as the majority of the comments were not applied to the prototype. The following text highlights the committee’s responses from our final meeting:

The cards are contradicting themselves if the small text and the larger text emphasize two different aspects of the visual composition. For example, the two-dimensional banisters show Edgar Rubin’s rule of concavity and convexity. The use of black and white confuses the principle in the text and the image.

The writing needs to be as clear as possible without confusing concepts. For example, the term mark-making refers to a period of art, not to be used as a verb to describe Barbara Kruger’s social mark-making.

Excellent choice (of examples) for the architecture cards, but the text needs to be reworked. The examples are complex so they need to be thoroughly explained.

It could be problematic with two different formats to accommodate the vertical and horizontal elements of the various imagery.

The larger text is too reductivist. How do you use the pull quote without oversimplifying the overall concept?

Should the pull quote get eliminated altogether?

How do you respect the depth of the research and content on a reference card with limited space and user time?

The image on the following page shows the card notations correlating to the final evaluation.
**Evaluative notes on card prototypes from final thesis committee meeting**
Conclusion

Present Absence: The Visible and Invisible in Graphic Design

This project expanded my visual and theoretical vocabulary of the figure ground relationship in visual communication. It allowed an expanded meaning to grow from a rich study of specific examples across disciplines. I discovered meaningful relationships and synthesized my own work with the existing body of information to ensure external and internal exploration. Finally, I was able to translate the model into a prototype of an educational tool that could be integrated into basic design pedagogy.

This project proved to me that seeing is not believing and that the power of absence can be a compositional tool as well as a life experience. It encouraged me to extend design concepts to environments outside of my profession. From this viewpoint, the extension of the figure ground relationship produced a greater awareness and sensitivity to meaningful opposition, diversity and inclusivity.

Design is all around us, it is the synthesis of art and ideas. Ideas come from thinking and art comes from making. The symbiotic relationship between thinking and making is at the root of meaningful and beautiful design. Designers affect everything, from the smallest seedling to the largest cityscape. As a designer, I have the ability to improve the quality of life for one or many.

It is with the heart that one sees rightly; what is essential is invisible to the eye.

Saint Exupery, The Little Prince
Glossary of Terms

expression  merging thoughts from one's perceptive experiences with imagination in order to create a verbal or visual message

figure  the element of a visual communication artifact that appears to be an object in the foreground

forced juxtaposition  an imposed comparison of two images by placing them in close proximity to one another

gestalt  a field whose forces are organized in a self-contained, balanced whole

ground  the element of a visual communication artifact that appears to be the background of the object

invisible  that which exists but is not recognized as part of the primary experience

modernism  the predominate movement of the early to mid 1900s that emphasized the simplicity and clarity of a design independent of historical allusion or vernacular responses through objective and rational thought

morphological  an approach from which a whole systems view is taken; totality research

negative space  a multi-dimensional term to describe the space where mass does not exist

perception  the way in which a sensory experience, the registration of sight, sound, smell, touch, or taste, facilitates understanding and awareness of a specific environment

positive space  a multi-dimensional term to describe the space where mass exists

post-modernism  a reactionary movement, beginning in the 1970s, challenging the clarity and order of the Modernist aesthetic with subjective feeling, communication, and a response to the vernacular

visible  that which exists and is recognized as part of the primary experience

yin yang  the ancient Chinese philosophy that complimentary forces exist in dynamic equilibrium as one
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Zwicky, Fritz. *Discovery, Invention, Research Through the Morphological Approach.*
Appendix Index

A Planning Report
B Email from Dr. Richard D. Zakia
C Email dialogue with Dr. Richard D. Zakia
D The Morphological Approach by Fritz Zwicky
E VizAbility by Kristina Hooper Woolsey
Appendix

Planning Report
The final project for the course Project Evaluation and Documentation, attended during the Fall quarter of 2001, was the following planning report. This was a preliminary report that attempted to outline the dimensions of the project through a series of assumptive writings.
Silence is as powerful as the spoken word.
Contents

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Thesis Proposal

Present Absence: The Power of the Invisible

This thesis will be a creative project focusing on the intentional and unintentional use of negative space in graphic design. Through cross-disciplinary research, I will redefine the term negative space moving from a formal definition of white space, to possibly include the influence of theory, gender, political and/or social events and actual designers from the past and present who may be invisible to the user or audience.

The application of this thesis may be an installation design for an educational conference on design possibly including a book summarizing my research. This application should offer a formal and spatial experience that discusses the importance of what you do not see as being as powerful and important as what you do see.

I will redefine the term negative space.
Documentation of Needs

In a world where information is increasingly complicated and global boundaries are decreasingly evident, people are forced to become excavators in the search for useful information. Our daily experiences involve receiving many messages against a variety of backgrounds. We are asked to utilize the evident or the direct, that which is presented to us in the foreground as a priority, while being unaware of the power of the passive or the background. As the presentation of information and the conveyor of a message becomes increasingly aggressive in its approach, we are losing the power and the importance of the secondary experience, that which does not assume the obvious position, but takes intellectual and visual acuity to dissect and assimilate into one’s experience.

In Language of Vision, teacher, author and artist Gyorgy Kepes stated,

“...We cannot bear chaos – the disturbance of equilibrium in the field of experience. Consequently, we immediately form light into shapes and figures. Exposed to a visual field, one organizes that field at once into two opposing elements, into a figure against a background. One speaks of white with inevitable implied reference to black, grey, or other colors. To convey the meaning of ‘yes’ one implies a latent understanding of ‘no’. A unified whole is thus created. Every image is based upon this dynamic dualism, the unity of opposites.”

As Professor Kepes declared the reference to an opposite is inevitable and unavoidable by the very nature of visual communication. For a user to interpret direct information or foreground, she must refer to indirect information or background. Thus, in order for ideas and intentions to be fulfilled, designers must be aware of the seemingly empty space or the assumed silence from the unspoken word as an element that is interpreted as strong or weak, fueled with the power to cohere or shatter a message.

Every image is based upon this dynamic dualism, the unity of opposites.
Problem Statement

This thesis will be concerned with a creative project that will inform and empower an audience to search for the indirect and appreciate the significance of interpreting what is in the background, both visually and theoretically. It will reveal how the power of the unobvious or the absence of information is as important as the obvious or tangible by uncovering rich messages that exist in an opposite space. It will contribute to the reception of the graphic designer as information messenger by providing insights and facilitating connections that the reader has not previously made in regards to the visible and invisible nature of design.

I will engage in a theoretical and formal examination of negative space viewed through four critical lenses:

- Eastern philosophy including the study of the Chinese Yin and Yang
- Social theory including feminist philosophy in creativity
- Fine arts including architecture, sculpture and painting
- Visual communication theory including cognitive psychology, perception and interpretation

I intend to create an informative presentation of my research that would be delivered at a hypothetical conference on design to an audience of design students, faculty and professional designers. This presentation would include a demonstration that would connect three dimensional artifacts and two dimensional graphics, or text and image, to exemplify my findings. It will ask the viewer to experience space in a direct and indirect manner that may be opposite to their usual perception of a message through creating a dialogue between the complementary forces of positive and negative space.

After exposing an audience to this information, I will facilitate a debriefing that will allow me to observe and record the receivers’ feedback of my presentation. The findings will be documented in a book that will record the research, the creation of the hypothetical educational conference and the experiences of the audience as further insight into the power of negative space.
All problems in visual communication can be described in terms of a figure/ground relationship which is a correspondence between the two parts of a design in which one appears as an object with the other appearing to be a background. This statement plants the seed for my thesis project and through its interpretation, I will reveal parallels in cross-disciplinary study through examining the following exemplars.

By understanding the ancient Chinese theory of Yin and Yang, a pair of complementary forces that move perpetually in the universe with a sense of continuous motion and balanced interaction, I will gain insight into the harmony of opposites and the dynamic equilibrium of positive and negative space as a philosophy of life.

In 1954, Rudolph Arnheim discussed in *Art and Visual Perception* the structure of two dimensional space and the origins of the figure/ground relationship. Arnheim described Edgar Rubin’s 1921 systematic study which revealed the existence of an interchange of forces between positive and negative space. I will focus on Rubin’s original concept of figure/ground, Arnheim’s visual analysis, and the work of teacher, author and artist Gyorgy Kepes and how it relates to the study of perception in cognitive psychology.

I will also examine the visual communication theory of specific instructors at the Bauhaus Arts and Crafts school in Germany during the 1920s, including Laszlo Moholy-Nagy, Paul Klee and Wassily Kandinsky through the study of their creative work and teaching methodologies.

In 1948, Rudolph Arnheim stated in "The Holes of Henry Moore: On the Function of Space in Sculpture" that negative space in sculpture is a strong and dynamic form where Moore’s holes are not merely dead or empty space, but substantial, hollow containers of space. This describes the idea of three-dimensional space as mass-positive object, space-positive object, or a mixture of both where solids sculpt the space around them. I will study this valuable topic in the field of architecture with the work of Alvar Alto and Robert Venturi and in sculpture with the work of Henry Moore and David Smith.

Finally, through the work of Barbara Kruger, Mary Kelly, Laurie Anderson, and the feminist artist organization, the Guerrilla Girls, I will research feminist theory in the creative arts. I will examine how historically women occupy the invisible space of a marginalized group of people by comparing the female creative voice as the secondary experience or background to the masculine creative voice as the primary experience or foreground.

*A strong and dynamic form where Moore’s holes are not merely dead or empty space, but substantial, hollow containers of space.*
Mission Statement

This thesis project is a demonstration project that will focus on formal visual values, more specifically the figure/ground relationship in order to redefine the term positive/negative space and increase the designer's awareness of the power of this overlooked perceptual tool.
Goals and Objectives 1–3

1. To establish a plan that guides the project
   a. Given the identified area of exploration, the designer will develop a systematic approach to this project to ensure that she follows a predetermined set of guidelines.
   b. Given the identified area of exploration, the designer will manage the process from conception to evaluation to ensure that she completes stated goals and objectives.
   c. Given the identified area of exploration, the designer will evaluate the plan.

2. To examine formal values of visual communication
   a. Given the plan that guides the project, the designer will develop a vocabulary of visual elements to ensure that it includes line, shape, form, space, light, balance, rhythm, color, and texture.
   b. Given the plan that guides the project, the designer will compare visual artifacts with this language to ensure that she has developed an understanding of this language.
   c. Given the plan that guides the project, the designer will evaluate the examination of the formal values of visual communication.

3. To define figure/ground in visual communication
   a. Given the examination of formal values, the designer will illustrate the formal use of figure/ground to ensure the correct recognition of visual examples.
   b. Given the examination of formal values, the designer will synthesize a visual and theoretical vocabulary to ensure the correct identification of figure/ground relationship.
   c. Given the examination of formal values, the designer will evaluate the definition of figure/ground in visual communication.

To establish a plan, examine formal values and define figure/ground.
Goals and Objectives 4–7

4 To ideate through cross-disciplinary exploration

a. Given the definition of figure/ground in visual communication the designer will translate this definition to positive/negative applications in other fields of study to ensure a rich exploration.

b. Given the definition of figure/ground in visual communication the designer will interpret expanded meaning to compare/contrast specific examples to ensure that meaningful relationships are created across disciplines.

c. Given the definition of figure/ground in visual communication the designer will evaluate the ideation process.

5 To select a new model of figure/ground relationship

a. Given cross-disciplinary exploration the designer will narrow her focus to the most powerful model to ensure that the best possible solution is realized.

b. Given cross-disciplinary exploration the designer will synthesize her work with existing body of information to ensure that the new model reflects external and internal exploration.

c. Given cross-disciplinary exploration the designer will evaluate the selection of the new model.

6 To implement a new paradigm through application

a. Given the new model of figure/ground the designer will apply information in a hypothetical conference to ensure that content is available for integration into theory and work.

b. Given the new model of figure/ground the designer will disseminate the content of the new paradigm in a formal gallery installation.

c. Given the new model of figure/ground the designer will evaluate the application.

7 To evaluate the project in summative manner

a. Given implementation of the paradigm the designer will incorporate conference and gallery feedback to ensure that project is improved and strengthened.

b. Given initial set of project goals and objectives the designer will review outcome to ensure that the project fulfilled designer’s original intent.

To ideate through cross-disciplinary exploration, select a new model, implement a new paradigm and evaluate the project in a summative manner.
Objectives and Strategies 1-3

1  a Given the identified area of exploration the designer will develop a systematic approach to this project to ensure that she follows a predetermined set of guidelines.
   b Given the identified area of exploration the designer will manage the process from conception to evaluation to ensure that she completes stated goals and objectives.
   c Given the identified area of exploration the designer will evaluate the plan.

2  a Given the plan that guides the project the designer will develop a vocabulary of visual elements to ensure that it includes line, shape, form, space, light, balance, rhythm, color, and texture.
   b Given the plan that guides the project the designer will compare visual artifacts with this language to ensure that she has developed an understanding of this language.
   c Given the plan that guides the project the designer will evaluate the examination of the formal values of visual communication.

3  a Given the examination of formal values the designer will illustrate the formal use of figure/ground to ensure the correct recognition of visual examples.
   b Given the examination of formal values the designer will synthesize a visual and theoretical vocabulary to ensure the correct identification of figure/ground relationship.
   c Given the examination of formal values the designer will evaluate the definition of figure/ground in visual communication.

Conduct initial research.
Create planning documents.
Form a thesis committee.
Refer to goals and objectives.
Establish criteria for evaluating plan.
Analyze evaluation of the plan.
Study Rubins, Kepes, Arnheim, and Bauhaus theory.
Review Modern and Post-Modern designs.
Examine artifacts and language to compare.
Develop matrix of artifacts and language.
Establish criteria for evaluating vocabulary.
Analyze evaluation of vocabulary.
Select examples of figure/ground artifacts.
Identify visual elements of artifacts.
Extract specific theory related to figure/ground.
Develop matrix of visual and theory.
Establish criteria for evaluating the definition.
Analyze evaluation of the definition.

Create planning documents, select examples, and develop a matrix.
Objectives and Strategies 4-7

4 a Given the definition of figure/ground in visual communication the designer will translate this definition to positive/negative applications in other fields of study to ensure a rich exploration.

b Given the definition of figure/ground in visual communication the designer will interpret expanded meaning to compare/contrast specific examples to ensure that meaningful relationships are created across disciplines.

c Given the definition of figure/ground in visual communication the designer will evaluate the ideation process.

Explore range of cross-disciplinary fields.
List specific translations.

Develop matrix of disciplines and applications.
Diagram relationships by forging connections.

Establish criteria for evaluating ideation process.
Analyze evaluation of ideation process.

5 a Given cross-disciplinary exploration the designer will narrow her focus to the most powerful model to ensure that the best possible solution is realized.

b Given cross-disciplinary exploration the designer will synthesize her work with existing body of information to ensure that the new model reflects external and internal exploration.

c Given cross-disciplinary exploration the designer will evaluate the selection of the new model.

Review and systematize research.
List possible models for solution.

Identify personal work that supports model.
Choose personal work to use in model.

Establish criteria for evaluating new model.
Analyze evaluation of new model.

6 a Given the new model of figure/ground the designer will apply information in a hypothetical conference to ensure that content is available for integration into theory and work.

b Given the new model of figure/ground the designer will disseminate the content of the new paradigm in a formal gallery installation.

c Given the new model of figure/ground the designer will evaluate the application.

Create material to distribute at conference.
Present thesis project to students and faculty.

Incorporate conference output into gallery show.
Produce exhibit material for gallery show.

Establish criteria for evaluating the application.
Analyze evaluation of application.

7 a Given implementation of the paradigm the designer will incorporate conference and gallery feedback to ensure that project is improved and strengthened.

b Given initial set of project goals and objectives the designer will review outcome to ensure that the project fulfilled designer's original intent.

Collect data from conference/gallery debriefing.
Translate output from audience to project input.

Review thesis report and planning documents.
Compare project outcome with project plan.

To create planning documents, collect data, systematize research, and establish criteria.
# Time and Implementation Plan

## Calendar

<table>
<thead>
<tr>
<th>Calendar</th>
<th>RIT Calendar</th>
<th>Thesis Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>03 Labor Day</td>
<td>06 Fall quarter classes begin</td>
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<tr>
<td>October</td>
<td>08 Columbus Day</td>
<td>24 Project Planning</td>
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<td></td>
<td>28 Daylight Savings ends</td>
<td>03 Signed Thesis Proposal due</td>
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<td>November</td>
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<td></td>
<td>22 Thanksgiving</td>
<td>19 Fall/winter break begins</td>
</tr>
<tr>
<td>December</td>
<td>10 Hanukkah</td>
<td>03 Winter quarter classes begin</td>
</tr>
<tr>
<td></td>
<td>25 Christmas Day</td>
<td>10 Thesis Committee meeting</td>
</tr>
<tr>
<td>January</td>
<td>01 New Year's Day</td>
<td>23 Holiday break begins</td>
</tr>
<tr>
<td></td>
<td>21 Martin Luther King Jr. Day</td>
<td>28 Thesis Committee meeting</td>
</tr>
<tr>
<td>February</td>
<td>12 Lincoln's Birthday</td>
<td>04 Implementation and Synthesis</td>
</tr>
<tr>
<td></td>
<td>14 Valentine's Day</td>
<td>14 Hypothetical conference</td>
</tr>
<tr>
<td></td>
<td>22 Washington's Birthday</td>
<td>20 Thesis Committee meeting</td>
</tr>
<tr>
<td>March</td>
<td>28 Spring break begins</td>
<td>08 Thesis Show installation</td>
</tr>
<tr>
<td></td>
<td>17 St. Patrick’s Day</td>
<td>11 Spring Quarter classes begin</td>
</tr>
<tr>
<td></td>
<td>20 First Day of Spring</td>
<td>11 Dissemination and Distribution</td>
</tr>
<tr>
<td></td>
<td>31 Easter</td>
<td>15 Thesis Show opening reception</td>
</tr>
<tr>
<td>April</td>
<td>07 Daylight Savings begins</td>
<td>28 Thesis Show deinstallation</td>
</tr>
<tr>
<td></td>
<td>22 Earth Day</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>12 Mother’s Day</td>
<td>09 Thesis Committee meeting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 Thesis Committee meeting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 Thesis Committee meeting</td>
</tr>
</tbody>
</table>

## Key

- **Fall Quarter**
- **Winter Quarter**
- **Spring Quarter**
- **Academic Breaks**
- **Committee Meetings**
Whole systems theory allows us to understand the world around us by breaking it apart and studying how the details paint the big picture.
## Evaluation Plan 2.0 4.0 7.0

<table>
<thead>
<tr>
<th>Questions</th>
<th>Block Diagram</th>
<th>Target Audience</th>
<th>Evaluator</th>
<th>My Actions</th>
<th>End Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this project needed?</td>
<td>2.0</td>
<td>Author</td>
<td>Author</td>
<td>The author will conduct initial research to survey existing information on topic.</td>
<td>The author will present findings to Thesis committee to prove that project is needed.</td>
</tr>
<tr>
<td>Assess</td>
<td>2.0</td>
<td>Author</td>
<td>Thesis advisor</td>
<td>The author will present research to thesis advisor to confirm depth of examination.</td>
<td>The author will incorporate advisor feedback into research and analysis level.</td>
</tr>
<tr>
<td>Needs</td>
<td>4.0</td>
<td>Author</td>
<td>Thesis advisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research and Analysis</td>
<td>4.0</td>
<td>Author</td>
<td>Thesis advisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate Project</td>
<td>7.0</td>
<td>Author</td>
<td>Thesis committee</td>
<td>The author will present thesis report to compare against original goals/objectives.</td>
<td>Committee passes judgement that outcomes meet project, goals and objectives.</td>
</tr>
</tbody>
</table>

**Did this project fulfill its original goals and objectives?**
Dissemination Plan

The circle encompasses and speaks of itself while listening and embracing others.
Bibliography


Glossary of Terms

perception the way in which a sensory experience facilitates understanding and awareness

figure the element of a visual communication artifact that appears to be an object in the foreground

ground the element of a visual communication artifact that appears to be the background of the object

positive space a multi-dimensional term to describe the space where mass exists

negative space a multi-dimensional term to describe the space where mass does not exist

visible that which exists and is recognized as part of the primary experience

invisible that which exists but is not recognized as part of the primary experience

yin yang the ancient Chinese philosophy that complimentary forces exist in dynamic equilibrium as one
Appendix A  Yin and Yang of Research

The Yin Yang Map of research shows Yin, the negative space, representing theory and Yang, the positive space, representing the practicality of formulating projects.
Appendix B  Database List

Planning Documents
- Documentation of Needs
- Problem Statement, Description
- Audience
- Major Planning Drafts
  - Mission Statement
  - Goals
  - Objectives
  - Processes and Strategies
- Time/Implementation Plan

Research
- Historical Precedents
  - Chinese Yin Yang
  - Visual Communication Theory
    - Rudolph Arnheim
    - Gyorgy Kepes
    - Bauhaus
      - Laszlo Moholy Nagy
      - Paul Klee
      - Wassily Kandinsky
  - Architecture
    - Alvar Alto
    - Robert Venturi
  - Sculpture
    - Henry Moore
    - David Smith
  - Feminist Philosophy
    - Barbara Kruger
    - Mary Kelly
    - Laurie Anderson
    - Guerilla Girls
- Research Description
  - Connections
  - Parallels
  - Discoveries

Application
- Implementation
  - Hypothetical conference
- Audience
  - Design students, faculty, professionals
- Context
  - Educational setting

Dissemination/Distribution Plan
- Thesis Show

Evaluation Plan

Bibliography

Glossary of Terms
Email from Dr. Richard D. Zakia  January 15, 2002

Michelle,

A number of things come to mind regarding your intent to reveal the importance of what is not consciously attended to (ground) and what is (figure). First let me say that figure ground is also important in an auditory mode as it is in the visual mode. It probably extends to all of our senses.

In music, for example, the interval (ground) between any two notes (figure) is critical, as it is in the visual (the interval between two visual elements). Here are some relevant quotes that come to mind:

Mozart said at one point, that he wasn’t as much interested in notes, as the space between them.
Harley Parker

The vase gives form to the void, and music gives form to the silence.
Georges Braque

The interval invites participation, it creates riddles that involve one.
Edmund Carpenter

A note of music gains significance from the silence on either side.
Ann Morrow Lindbergh

I list these quotes to underscore the importance of what you are undertaking. We in the Western world do not attend to the interval, the space/time between In Japan, as you know, they do, and even have a name for it – the Ma.

You may want to think of negative space or ground as the interval between two visual elements.

In this way the size of the interval, shape, color, position and so on take significance. (Mark Twain used elaborate pauses in the speeches he gave to engage his audience) A designer should pay as much attention to designing the interval as the figure. The may not happen at a conscious level but it certainly, with good design, does happen at an intuitive or sub conscious level.

You mention focussing your research on a number of different things. Do you plan, for example, to look at some of the work of feminist artists and analyze their work in terms of figure/ground?

I assume so, and certainly would be willing to help if I can.

In critiquing any of the works you should consider taking a Gestalt approach, that is take everything into account that might be considered ‘ground’, not seen or attended to. For example, consider how things are represented in the work. In semiotics we talk about 3 ways to represent things; iconic, indexic and symbolic.

Indexical, points to some thing that is not actually in the work but lies outside the work. How does this affect what is visible in the work. Is there a text or headline in the work, as in Barbara Kruger’s work?

If so, does it suggest a ‘sub text’, i.e. ‘reading between the lines.’ Reading between the lines ? one might think of this as ‘ground’, what the words imply is there but may not picked up by the reader. It is a way of suggesting something without defining it.

These are my thoughts at this time Michelle. I look forward to hearing from you again.

Richard D. Zakia
Email dialogue with Dr. Richard D. Zakia  
February 12, 2002

Good morning Dr. Zakia,
Thank you for your thoughts on my thesis topic and related ideas. It has provided me with further research and examination of my subject. Roger reported that you did not receive my response email from a few weeks ago, I apologize as I have been having trouble with me email account at RIT.

Over the past few weeks I have been individually meeting with my thesis committee and they strongly suggest that I focus on a few topics as opposed to scraping the surface of a wider range of topics. So, I am now working on diagramming the relationships between feminist visual work, 2-d figure ground perception, and architecture/3d solids and voids, as well as my own personal view. I have attached the morphological foundation to which I will be exploring the different relationships and inserting visual examples in each quadrant of the circle/square framework to reveal connections and new meanings from juxtaposing selected theories and designs.

Let me know your thoughts or comments and I will keep you updated.

Thank you for your time,
Michelle Carfagno

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Dear Michelle,
Thank you for sending along an update on your activities and that wonderful diagram of the relationships you will be searching out and focussing on. I think narrowing your search as your committee has suggested makes good sense. If I can be of any help with the visuals you will be using to illustrate the relationships please send them along, or if you have any specific questions I might be able to help you with.

Cordially,
Dr. Z
The Morphological Approach, Fritz Zwicky

I was referred to this approach by my chief advisor as it represented a holistic view of a project and its components through systematic methods of organization. Zwicky described the Morphological Approach as equivalent with totality research and as enabling us to make discoveries and inventions systematically. The cube illustrates a multidimensional representation of all the possible solutions of a given problem.

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ponents $P_{uv}$ which characterize the totality of the possible solutions of a given problem in a multidimensional morphological box of $e$ dimensions. If for purposes of illustration we restrict ourselves to three parameters ($e = 3$), our morphological box would be three-dimensional, and it could thus be represented as a chest of

![Morphological Box Diagram](image)

Fig. 25. Simple three-dimensional morphological box with 25 drawers and 75 compartments containing the combinations or chains of the parameter components $P_{uv}$ which characterize the various journals and their successive owners. The particular drawer that appears pulled out in the drawing contains its three compartments, from front to back, the three flow lines [$P_{13}$, $P_{24}$, $P_{35}$], [$P_{15}$, $P_{24}$, $P_{35}$], and [$P_{13}$, $P_{24}$, $P_{35}$].
VizAbility, Kristina Hooper Woolsey

Page 80–81
from the section on Seeing

The first page discusses percepational attributes, including negative space, and how to begin seeing by observing.

The second page describes multi-dimensional explorations to aid in transforming and enhancing your visual world.

For instance, most of us are oblivious to the subtlest of color. We notice them only on familiar occasions, such as when we try to match a paint color for a room, or find a shirt and a pair of trousers that go well together. Texture is an important element of objects, yet we usually ignore the sensations until we are forced to draw something. We rarely notice shadows and shading, as it is usually when we get our photos back from the developer that many of us have taken pictures of objects or the live, only to find most of them obscured by some or other notice when printing the picture.

The list of perceptual attributes includes:
- color
- orientation
- shape
- brightness
- superposition
- coloration
- resolution
- recombination of form

All of these things we are prone to see or ignore. You can take on these changes to familiarize yourself with these and other visual attributes of the world, to re-see your environment and to assist you in drawing and other constructive activities.

Art historians study how different artists use these elements to show what they see. Computer science experts, in designing software, are more interested by processing visual data, also pay attention to different dimensions of the visual world, to gather clues about what objects are at the other side. Perceptual psychologists study how the human visual system highlights the features that are important in different situations.

Begin by noticing:

Look around yourself right now. For a minute or two, just notice the brightness in your environment. Pay attention to where the light sources are.

Look at an object in your environment. Is there a direct source of light on it? Is it a highly reflected light?

How do different surfaces in your environment reflect the light differently? Do you notice any interesting shadows? Take your time.

Now think about color, and pay attention to the colors around you for a few minutes. How does the most prominent color in your vicinity? How many basic sensations of color do you see? Are there any shades nearly? What about dark shades? Are there many kinds of "off-white"? Look for colors on paper, how do these compare to the natural objects around you?

Try this for each of the perceptual attributes listed. Later, as you wander casually through the world, try these perceptions consciously. Integrate these "seeing sensibilities" into your daily life and discover what you have been passing by all these years.

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Transformations in Two, Three, and Four Dimensions

In addition to simply observing your world, learn how to make deliberate changes in what you see. Move regional objects and notice how their apparent size changes. Note how the amount of detail increases. Watch how the relationships between objects shift as their superposition changes.

Although the objects remain constant, e.g., the drawing doesn’t turn into an elephant, the color mixing into a chair, the separation of each object varies greatly depending on what you do.

There are actions you can deliberately perform that transform how you see an object you can change the lighting, for example, or you can look at the object from a different angle. Gradual changes in the environment, like the sun coming up, also affect what you see. Your task is to acknowledge these changes and to play with them. Experiment yourself in your next seeing by imagining just how everything might look upside down, look at the shadows on a friend’s face instead of the features, new change your view and

Write up a short piece of the new and the color of your environment.

How are some transformations that you can explore to enhance your seeing capabilities?

In two dimensions:
- rotate, locate, identify, scale, combine, notice, the size.
- In three dimensions:
- fold, change light source, change plane of view
- dimension, extract, expand, compress
- you should both look for these kinds of visual changes in your world, and do things yourself to make them happen. Enjoy the world up close, crumple them up then watch carefully as they move. Throw some things and notice how they appear to change. Draw objects on strings in front of lights and mirrors as the shifting shapes and colors change. Try to take special notice of all the details that, as an adult, you have chosen to ignore, and in yourself find the pleasure of incorporating them in your everchanging environment.

Become a child again and actively explore your visual world!