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ROCHESTER INSTITUTE OF TECHNOLOGY

A Thesis Submitted to the
Faculty of The College of
Fine and Applied Arts
in Candidacy for the Degree of
MASTER OF FINE ARTS

Design Theory and Methodology

By

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May 15, 1992

Approvals

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Date: May 20, 1992

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Associate Advisor: Professor Pamela Blum

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79 Kirklees Road/ Pittsford/ New York/ 14534

Date: MAY 20TH, 1992

Dedication

This thesis is dedicated to my parents Marie and Bill Tedeschi, my mother for giving me the encouragement and confidence to attend graduate school, my father for his enduring patience and for instilling in me the desire to learn.

Thank you both for your never ending love and support.

Acknowledgement

I wish to thank Alicia, whose hard work and dedication is a source of inspiration.

I also wish to thank my committee members Deborah Beardslee, Roger Remington and Pamela Blum for their helpful suggestions, encouragement and patience.

And, a special thank you to Roger for his wisdom and thoughtful advice, and to Deborah for the inspiration and excitement she instilled in me.

Preface

As my interest in the visual design process and investigation onto new methods of problem solving intensified, I began to ask questions about the relevance of process, methods, concept, and theory which we as designers and educators believe in and on which we rely.

Could the implementation of theory or a particular process improve design? The answer can be found in response to two contemporary challenges to designers: to be more responsive to audience needs and to be more analytical. Systematic analysis fosters the exploration of initial concepts, new insights and the ability to explore a wide variety of choices. A positive aspect occurs in the ability to adhere to a systematic analysis in that the end results are produced from in-depth explorations.

Designers and educators need to enhance, broaden and increase the number of options and choices they work with. They need to be rational problem-solvers. These all are goals. The way designers think affects their ability to solve problems. Problem solving channels ideas and analysis improves designers' explorations through attention to process and methods. Not all problems must be handled in this systematic manner, but these restrictions may enable designers to "see" problems in their simplest, abstract forms. From these simple, abstract forms follow interpretations and a sense of completeness. This completeness enables the designer to produce the most effective communication possible.

Introduction

Towards the end of my first year of graduate school I began to reflect on ideas for a thesis topic. I began to compile a reading list.

One important text, Peter G. Rowe's *Design Thinking*, gave a systematic account of the design process. Rowe discusses architectural design with comparisions from examples from more diverse areas of design study.

This book provoked my interest for the same reasons as an independent study with Professor Beardslee, which introduced me to creative problem-solving, exploration and utilization of design methods.

The culmination of this newly-gained knowledge, coupled with a year of intense, concentrated effort emphasizing design process under my core professor, Roger Remington's guidance, contributed to the direction of my thesis topic.

Professor Remington supported my topic decision. He extended an invitation to attend a summer workshop on Design Process sponsored by the Graphic Design Education Association. Professor Remington recommended several relevant books. He suggested I contact Professor Beardslee to determine if she would be interested in heading my thesis committee.

Professor Beardslee accepted the position of chief advisor. Professors Remington and Blum became my associate advisors. I asked each member for a specific reason: Professor Beardslee was the original catalyst behind the inspiration for my thesis topic; Professor Remington, a professor in my major, a fountain of resource and knowledge in Design Theory and Methodology. Professor Blum who

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is also process oriented and interested in thought structures, as well as a fine artist, a painter, was someone I believed would challenge me as an artist and a graphic designer.

Autumn approached and I found myself in libraries and bookstores locating and reading diverse publications related to my topic.

Proposal Development

The mid-September deadline for a thesis statement was quickly approaching. A documented initial thesis statement was required in order to obtain an authorized signature of approval from the Special Assistant to the Dean for Graduate Affairs.

A summary of the initial thesis statement follows:

> The purpose of this thesis is to investigate methodology and design theory in graphic design. This project will investigate whether a "front-end" process is required for effective graphic design (see Appendix A).

As time progressed, it was necessary to elaborate and specify information found in various components of the proposal. The fundamental questions of who, why, what, where, when and how were answered in structures that ranged from a problem statement to the actual dissemination of the completed work.

A retrospective comparision of an earlier version of my thesis proposal (see Appendix B) to the final version (see Appendix C) reveals that considerable alterations occurred in the application of the poster series.

My initial concept for the applied component was that a series of posters would reflect specific design theories selected from the final version of the Design Theory and Methods Index (see Appendix D).

In the initial concept, each poster was to communicate a specific design theory selected from the Index. In the finalized project proposal the posters would collectively illustrate a theory through the process of using various methods. In other words, the theoretical emphasis was on the visual design process. The poster series would reveal the parts of the visual design process as well as the whole. These parts range from Problem Identification to Retrospective Evaluation. Various methods would be chosen from the Index. A page spread dealing with Irezumi (the art of Japanese tattooing) would be designed to simulate how an actual product could be created through the process of using various methods.

Timeline

A firm grasp on my goals and objectives allowed me to implement a plan of action which took the form of a timeline (see Appendix E). Deadlines needed to be met. One important deadline was the completion of the application for the thesis show. Meetings with all committee members present, made difficult to coordinate because of busy and often conflicting schedules, needed to be arranged far in advance. My progress approximated anticipated due dates so that no major problems occurred.

Research: Design Theories and Methods Index

Research began over the summer as soon as my topic was determined. Professor Beardslee and Professor Remington both suggested readings that I eagerly devoured. An early start was needed because it would be difficult to digest all the materials that had to be covered. Research led me to begin a Design Theories and Methods Index.

The Design Theories and Methods Index is a computerized data base retrieval system that contains a compilation of theories and methods collected and combined in one Index from a variety of disciplines. The Index is intended to be used by educators and professionals of visual communication for locating theories and methods quickly and with ease.

I began corresponding with others interested in Design Theory and Methods, such as Professor Meredith Davis of North Carolina State University; Professor Kevin Byrne of the Minneapolis College of Art and Design, and Professor Steven Skaggs of the University of Louisville. With the help of these individuals and my committee members, I was able to compile a vast array of readings. These contributions would represent the bulk of data for the Design Theories and Methods Index, an open ended index that will expand over time.

After compiling the Design Theories and Methods Index it became necessary to research standard indexing styles. As I began to develop the Index, I contacted Barbara Polowy, the Arts and Photography librarian from the Wallace Memorial Library at the Rochester Institute of Technology. She made several helpful suggestions and recommended various resources. *The Chicago Manual of Style*, an important resource, helped me build an index by suggesting standard categories and widely used formats.

Research

Research: Visual Design Process and Methods Poster

The bulk of my research was already completed by the time I began designing the poster applications. All readings regarding the design process and methods were taken from the Index itself.

The most significant resources were *The Universal Traveler* by Jim Bagnall and Don Koberg, *Graphic Problem Solving for Architects and Builders* by Paul Lasseau, and *Design Thinking* by Peter G. Rowe.

While investigating the visual design process, I came across three different models of organizing, approaching or analyzing the design process.

I believe the most universal breakdown of the visual design process is the two-step process by Allen Hurlburt as discussed in *The Design Concept*. Hurlburt divides the process into analysis, then synthesis. Koberg and Bagnall identify three stages of: Analysis, Conceptualization and Synthesis. The most in-depth process and the one I chose to follow consists of seven steps. Their sequence is as follows:

Problem Identification
Research and Analysis
Synthesis
Ideation
Evaluation
Implementation
Retrospective Evaluation.

I received this information from Professor Beardslee during the first year graduate level Theory and Methods seminarat RIT. Professor Beardslee conducted a lecture in late October, 1991 about the visual design process. There, I received handouts (see Appendix F) that became a major resource for the application of the poster series as it began to take shape.

At this point in time, it was necessary to define the sequence of steps listed above. During **Problem Identification**, it is necessary to define and understand the nature of a problem. **Research and Analysis** represents the systematic inquiry for discovering facts or relationships which may aid in solving a problem. **Synthesis** is the discovery of interrelationships and patterns as one sorts through and organizes the parts of the problem. **Ideation** is the generation of conceptual solutions. **Evaluation** is the selection of designs from possible viable alternatives. **Implementation** can be defined as refinement and development of the final phases of production. Finally, **Retrospective Evaluation,** the determination of effects of the solutions, is useful for feedback in solving future problems.

It was also necessary to research methods. **Methods** are described as sub-procedures or tools used during the process of design. There are many variations in sequencing procedural steps as well as many different techniques or methods for accomplishing each operative step along the way. I choose (1) Mind Mapping, (2) Scoring and (3) Interaction Matrix.

These three methods were chosen because they were best suited to the stages in the process that were being investigated. I used Mind Mapping during Problem Identification, Scoring in Research and Development and the Interaction Matrix in the Synthesis stage.

Mindmapping was clarified by reading Tony Buzan's *Use Both Sides of Your Brain.* I had prior experience with this process during an independent study with Professor Beardslee.

I discovered Scoring by reading *RSVP Cycles* by Lawrence Halprin. William Pena's *Problem Seeking* provided information about the Interaction Matrix.

Method definitions were compiled from research. The definitions were included in the series posters. The definitions are as follows:

Scores are symbols of processes which extend over time and cannot be separated from the process itself. There is no one method of scoring. Scoring processes vary. They are at the heart of the process of creativity.

A **Mind Map** is a type of brainstorming with words or images. Rather than starting from the top and working down in sentences or lists (linear thinking), one should start from the center or main idea and branch out as dictated by the individual ideas and general form of the central theme.

The mind should be left as free as possible. Any thinking about where things should be placed or whether they should be included will simply slow the process. The idea is to recall everything one's mind thinks around the central idea.

Theory is also another important word that needs to be defined at this point. The following definition was given to me by Professor Remington. A theory is a set of generalizations related by a net of deductive thinking and arrived at by stages of discovery, verification and comparison.

Project Development: Design Theories and Methods Index

In order to begin the Design Theories and Methods Index specific categories needed to be developed and organized. Categories would contain information to systematically make the information easily accessible to the user. I originally began with the following categories: Theory or Method (keyword), Title or Entry, Name, Author, Publisher, Volume/ Issue, Source, User/Contributor, Date and Origin/ Discipline. This list was brought to the attention of Barbara Polowy as the result of a suggestion from Professor Remington. Barbara recommended a few changes. A second list was then prepared (see Appendix G).

The first draft of the Index was compiled in early November, 1991. I began by inserting information given to me by Professor Remington (see Appendix H) and a reading list sent to me by Professor Byrne (see Appendix I).

I encountered several problems during initial stages of the Index due to my unfamiliarity with the computer software being used. It was recommended that I document the Index on Filemaker II by The Claris Corporation. Due to the file's limited space I needed to shorten column widths and experiment with typefaces and point sizes. I originally selected 10- point Helvetica and in the end up using 8- point Helvetica Condensed instead.

The first presentation of the Index occurred in early December, 1991, during my first full committee meeting. Suggestions which I incorporated were to give credit to those who had contributed; to indicate the sources of my material and to distinguish between published and unpublished works. The idea of separating Theories from Methods was also discussed, but eventually rejected.

I decided to begin working on an Introduction to the Index, something to familiarize the user with its context (see Appendix J) and purpose. I attempted to answer some of the questions raised during the committee meeting. I decided to give credit to contributors in the form of short biographies about each. I also established that only unpublished work would be coded and located under a category entitled Locator. This information made it possible for the user to easily contact the author or repositor of a particular work.

In early January, I received a reading list (see Appendix K) from Professor Skaggs which included an unpublished discussion paper he had written entitled, *Ways of Knowing* (see Appendix L), which I also included in the Index. This is an example of work that was coded so that the user could easily locate it even though it is currently unpublished.

Once again, I found myself needing to research indexes more carefully, with guidance from *The Chicago Manual of Style.* The Topic category of my Index had become too congested. I adopted a format from the Manual that suggested using Subject in conjunction with Topic. Topic was defined as narrow and concrete, and Subject as something broader and less sharply defined.

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Later it was suggested by committee members to standardize my discipline and subject categories (see Appendix M) in order to create a sense of unity.

In mid-January, I submitted the second draft of the Index to the committee and requested approval to move on to the application phase of my thesis preparation.

Project Development: Visual Design Process and Methods Poster

Research for the poster series was complete. It was time to apply this research. The main communication, the visual design process, was the common thread that linked the poster series together. As each poster in the series progressed and as the process began to unfold, each step contained a method for aiding the design development.

During one meeting Professor Remington and Beardslee discussed the choice of content to be contained within the simulated page spread. Because of the seriousness of the visual design process, Professor Remington suggested I choose something of contrast; something esoteric. Later, I "mind mapped" the word esoteric to investigate new ideas. From the mind map I chose the word "body decoration" and eventually investigated Irezumi, the art of Japanese tattooing.

My thesis show was quickly approaching. I was informed that gallery space would be limited. I decided to produce a total of four posters.

Poster One

The first poster would describe the seven steps of the visual design process in general terms. Each poster would include a brief definition of a particular method. Embodying the method and for visual impact a one-line introduction about Irezumi, was included. The content for the process and methods information would be simulated in an actual page spread .The page spread is intended to be from a publication dealing with body

decoration. The initial poster set up the standard format and system of all elements for the remaining three posters in the series.

It was necessary to represent a sense of unity and similarity, a system throughout the series, in order to link one poster to the other. I wanted to express a sense of growth and development in order to echo the message of the central theme, the visual design process. Therefore, placement and color were key factors. Taking the advice of my committee, I created a written diagram that would document and organize the intended visuals (see Appendix N) before I began any preliminary sketches.

The most obvious link to unify the series was a consistent finished size for each poster. I chose a format that measured 14" x 22" On the right hand side of each poster was a vertical bar (see Appendix O). As the posters progress in the series, the color of the bar changes from light to dark. This bar ispart of a coding system for recognition. It acts as a unifying element as well as a subtle message conveying to the viewer that as the process develops and becomes more concrete, so does the color.

The bar was also a designated area where images and information used in the creation of the Irezumi page spread of the central theme would appear.The actual page spread was located on the bottom left hand side of the bar. The design elements used were words and/ or images, and color. As the poster series develops and becomes more concrete so does the Irezumi page spread. Type is added, colors chosen and images selected.

Method text is located in the foreground of each poster. Located in the same position on each poster is an image (silkscreened) in the background to reflect the method used.

Poster Two
The second poster in the series dealt with Problem Identification. There I used a mind map (see Appendix P) which is a form of brainstorming and is an important stage at this point in the process. From this mind map, I chose key words. These words were also used in the layout, appearing within the colored bar on the right hand side.

Poster Three
The third poster explained Research and Analysis. Scoring aided in the selection of color and imagery used in the Irezumi publication spread.

Poster Four
The fourth poster represented Synthesis. The method used at this stage was the Interaction Matrix (see Appendix R). The Interaction Matrix aided in the exploration of the emotional and pragmatic aspects of Irezumi. It allowed me the opportunity to combine very different issues of Irezumi which in turn provided unique ideas related to visuals that were used in the page spread.

In the beginning stages of the poster series, I struggled with the placement of necessary components (see Appendix S). I needed to create clear zones of information. Professor Beardslee and Professor Remington made it clear that placement was a key element to the success and legibility of the series and should be handled with the utmost care.

Early on, I began experimenting with the format of the posters (see Appendix T), not knowing in which direction to go. Professor Beardslee suggested I let the format come as a result of the process. As soon as I "let go", stopped struggling with size, shape, and form, and delved into the process itself, the format evolved naturally.

Conclusion

In conclusion, I discovered that, in fact, following a theory and applying methods indeed broadens and increases the number of options and choices one is able to work with.

The reference materials that have been compiled will be a great source of information and reference to other visual communicators.

I believe I have successfully completed the objectives I had placed upon myself and have been able to incorporate the knowledge regarding design theory and methodology gained while at RIT.

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Appendix A

Thesis Statement

Design Theory and Methodology

The purpose of this thesis is to investigate methodology and design theory in graphic design. This project will investigate whether a "front-end" process is required for effective graphic design. Theory and Methods will be analyzed through the use of examples from contemporary graphic design.

Physical outcomes for the thesis will be a book of terms, process documentation and a series of posters or postcards.

Appendix B

Thesis
Proposal

Draft 2

Project Title: **Design Theory and Methodology**

Designer and Address:

Carla Tedeschi
79 Kirklees Road
Pittsord, New York 14534

Problem Statement: To investigate methodology and design theory used in graphic design.

Audience:
Educators of Graphic Design
Graphic Design Students
Graphic Designers

Context:
Design Studios
Workshops and Seminars
Educational Facilities (Classrooms, lecture halls)

Documentation of Need:

This project will investigate the stage or stages in graphic design before implementation occurs. In other words, the "front-end" process will be examined and methods in aiding this process will be explored.

This project will explore and document a visually invisible process.

This project will examine the graphic designer as he/she engages in the practice of visual communication problem solving.

The importance of this project will be to validate that, in fact, successful graphic design does not rely solely on aesthetics and quesswork; but rather, graphic design can be described as a series of logical steps, a systematic account of sequences and procedures, not excluding the eureka factor.

The project will be analyzed by selected theories and methods chosen from the Design Theories and Methods Index. The chosen theory and methods will be analyzed by actual practice and application. The design processes selected will be thoroughly investigated by way of visualized and written documentation.

The initial project assumption is that a "front- end" process is a necessary sequential set of steps, that, when followed, will produce effective graphic communication of quality.

Mission Statement:

The project, Design Theory and Methodology is a "front- end "process or tool that will enhance and aid in the production of effective graphic design. A Design Theories and Methods Index will be compiled, a documentation notebook will be produced along with a series of posters created using the design process and selected methods.The project will prove that theory and methods are prerequisites of effective graphic design.

Objectives:

Build an awareness of design theories and methods in order to enhance the creation and quality of graphic communication.

Identify that successful graphic design problem solving does not need to be based solely on an aesthetic rational or random quesswork. In other words, the project will show that the philosophy of art and beauty are not the only grounds on which to determine the creation of a creative graphic design solution.

To identify a series of sequences and steps found during the design process and apply appropriate working methods at turning points in the process.

To identify that the "front- end" process is a necessary component in successful graphic design.

The designer, educator and student will be able to list a variety of "front-end" processes and identify those who are working on, researching or contributing to them.

The graphic designer, educator and student will be able to read, see and understand the systematic documentation or journey of various sequences and events made during the design process with the aid of various methods

Process and Strategies:

Design Theories and Methods Index

The design theory source index will be compiled by researched lists taken from my research, Professor R. Remington, Professor D. Beardslee, adn Instructor Kevin Byrne.

The index will be in alphabetical order and include origin

The design theory source index will be analyzed/reviewed and a selection of specific design processes/theories will be choosen.

Series of Theory and Method Posters

A series of posters dealing specific theories selected from the design theory Index

Respectively, every poster in the series will communicate one theory

Solutions for each poster will be generated by implementing the theory into actual practice

The posters will begin from the abstract (single theory or word) and proceed to the concrete (designed poster).

Appendix C

Revised
Thesis
Proposal

Draft 11 2/4/92

Project Title: **Design Theory and Methodology**

Designer and Address:

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Problem Statement:

To investigate methodology and design theory used in graphic design.

Audience:
Educators of Graphic Design
Graphic Design Students
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Context:
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Workshops and Seminars
Educational Facilities (Classrooms, lecture halls)

Documentation of Need:

This project will investigate the stage or stages in graphic design before implementation occurs. In other words, the "front-end" process will be examined and methods in aiding this process will be explored.

This project will explore and document a visually invisible process.

This project will examine the graphic designer as he/she engages in the practice of visual communication problem solving.

The importance of this project will be to validate that, in fact, successful graphic design does not rely solely on aesthetics and quesswork; but rather, graphic design can be described as a series of logical steps, a systematic account of sequences and procedures, not excluding the eureka factor.

The project will be analyzed by selected theories and methods chosen from the Design Theories and Methods Index. The chosen theory and methods will be analyzed by actual practice and application. The design processes selected will be thoroughly investigated by way of visualized and written documentation.

The initial project assumption is that a "front- end" process is a necessary sequential set of steps, that, when followed, will produce effective graphic communication of quality.

Mission Statement:

The project, Design Theory and Methodology is a "front- end "process or tool that will enhance and aid in the production of effective graphic design. A Design Theories and Methods Index will be compiled, a documentation notebook will be produced along with a series of posters created using the design process and selected methods.The project will prove that theory and methods are prerequisites of effective graphic design.

Goals:

A sharing of information with peers, colleagues, students and educators

A way to make educators, designers and design students aware that a "front- end" process occurs and may aid in successful graphic design.

The Theories and Methods Index is a tool to aid educators,designers and design students in locating sources or specific publications that refer to works of interest.

The poster series can be used as a tool by instructors to aid in the introductory education of the design process and specific methods.

Objectives:

Build an awareness of design theories and methods in order to enhance the creation and quality of graphic communication.

Identify that successful graphic design problem solving does not need to be based solely on an aesthetic rational or random quesswork. In other words, the project will show that the philosophy of art and beauty are not the only grounds on which to determine the creation of a creative graphic design solution.

To identify a series of sequences and steps found during the design process and apply appropriate working methods at turning points in the process.

To identify that the "front- end" process is a necessary component in successful graphic design.

The designer, educator and student will be able to list a variety of "front-end" processes and identify those who are working on, researching or contributing to them.

The graphic designer, educator and student will be able to read, see and understand the systematic documentation or journey of various sequences and events made during the design process with the aid of various methods

Process and Strategies:

Design Theories and Methods Index
The Design Theories and Methods Index is a compilation of theories and methods taken from a variety of disciplines.

The index is a computerized database retrieval system that allows the user to search for information by any one of the main categories, be subject, author, topic, discipline, etc.

The index will be in alphabetical order by author.

The Index categories will include:

Theory and Method name (Topic)
Discipline
Periodical (author, title of article, title of volume, issue number, date)
Book (author, title of book, author, publication, publisher)
Locator

The Design Theory and Methods Index File will be reviewed and a specific design process and methods will be chosen before several graphic manifestations can occur.

The Design Theories and Methods Index will be a first stage, open-ended research fiile.

Series of Theory and Method Posters
A series of posters dealing with the design process will be executed using key methods selected from the Design Theory and Methods Index

Respectively, every poster in the series will communicate a stage in the design process. The posters will be a "translation" of the process.

Solutions for each poster will be generated by implementing the process into actual practice and appropriate methods will be applied.

The posters will begin from the abstract (single theory or word) and proceed to the concrete (designed poster).

Target audience for the poster will be first year graduate graphic design students.

The posters will be a resource to the target audience.

Implementation of each poster will be documented, both written and visualized.

Documentation
Documentation will be a systematic and logical review of sequences and events made during the process.

Written: Research, Index File, notebook, notes.
Visual: Possible charting, diagramming, sketches, thumbnails, roughs, finished (comped) posters.

Pragmatics:

Committee members: Professor Deborah Beardslee, Professor Roger Remington and Professor Pamela Blum.
Libraries, Bookstores, Collegues, Professors

Dissemination:

College of Fine and Applied Arts, RIT Bevier Gallery. Possibly the GDEA , design classrooms and educational facilities.

Evaluation Plan:

Share project information with colleagues, peers and educators. Possibly use the Design Theories and Methods Index File and Posters in a classroom situation.

Glossary of Terms:

Theories: A set of generalizations related by a network of deductive thinking and arrived at by stages of discovery, verification and comparison.

Methodology: A systematic and logical process for controlling or monitoring change.

Process: (Sequence) A series of interrelated actions or events.

Design-Visual Communication: (Design) The arrangement and coordination of the parts of details of any object, by means of which the whole achieves a certain effect or impression, or produces a certain result. A visual pattern or composition.

(Visual) Based on the use of sight; visable.

(Communication) The transmission or exchange of ideas, information, etc.

Documentation: The collection, storage, and dissemination of recorded information in an intergrated system for efficient use and easy accessibility.

Front End: The part of the design process before implementation.

Tool: Any instrument or means neccessary to the efficient prosecution of one's profession or trade.

Problem Identification: To define and understand the nature of a problem.

Research and Analysis: The systematic inquiry in order to discover facts or relations
which may aid in solving the problem at hand.

Synthesis: To discover interrelationships and patterns: to sort, to sequence or order the information or parts of the problem.

Ideation: Generate conceptual solutions and prepare alternative preliminary designs.

Evalution: Selection of design solutions from viable alternatives.

Implementation: Refinement, development and production of the final form.

Retrospective Evaluation: Determination of effects of solutions for feedback into future problems.

Bibliography:

Arnheim, Rudolph. *Art and Visual Perception.* Berkeley and Los Angeles, California: University of California Press, 1954.(*)

Baiey, Robert. *Disciplined Creativity.* Ann Arbor, Michigan: Ann Arbor Science Publishers, 1978. ( )

Bruner, Jerome. *On Knowing.* Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1966. ( )

Bruner, Jerome. *Actual Minds, Possible Worlds.* Cambridge, Massachusetts: Harvard University Press, 1986. ( )

Buzan, Tony. *Use Both Sides Of Your Brain.* New York: E.P. Dutton, Inc., 1984. (*)

Campbell, Jeremy. *Grammatical Man.* New York: Simon and Schuster, 1982. (*)

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Dreyfuss, Henry. *Designing For the People.* New York: Simon & Schuster, 1955. ( )

Gibson, James J. *The Ecological Approach to Visual Perception.* Boston: Houghton Mifflin Company, 1979. ( )

Gleick, James. *Chaos.* New York: Viking Penguin Group, 1987. ( )

Gordon, William J. J. *Synectics.* New York: Harper & Row, 1966. (*)

Halprin, Lawrence. *RSVP Cycles.* (.)

Harris, Eleanor. *A Guide for the Preparation of Indexes.*( )

Hurlburt, Allen. *The Design Concept.* New York: Watson-Guptill Publications, 1981. (*)

Jones, Christopher J. *Design Methods.* New York: John Wiley and Sons, 1970. (*)

Korotkin, Arthur L. *Indexing Aids, Procedures and Devices.*

Koberg, Don, and Jim Bagnall. *The Universal Traveler.* Los Altos, California: Crisp Publications, Inc., 1991. (*)

Kostelanetz, Richard. *John Cage.* New York: Praeger Publishers, 1968. ( )

Lawson, Bryan. How Designers Think. Westfield, New Jersey: The Architectural Press Ltd., 1980. (*)

Rowe, Peter G. *Design Thinking.* Cambridge: MIT Press, 1987.(*)

University of Chicago Press. *The Chicago Manual of Style.* Chicago: University of Chicago Press, 1982. (*)

Van Dyke, Scott. From Line to Design. New York: Van Nostrand Reinhold, 1990. (*)

Van Oech. *A Whack on the Sise of the Head.* (.)

(*) Books read (.) Books to be read

Appendix D

Design Theories and Methods Index

Design Theories and Methods Index

As one becomes interested in a subject there is almost always a desire to read more about it. This Design Theories and Methods Index is by no means a complete record of all the works and sources available. It indicates the substance and range of readings upon which I have begun to form ideas. The Index is intended to serve as an information resource for those who wish to pursue the study of design theory and methodology.

The Design Theories and Methods Index has been created to bring together source information from a variety of disciplines in order to make a substantial contribution to the comprehension and practice of the creative process in the field of visual communication. The categories included in this Index are: **Author**; **Book**; **Article**; **Publication**; **Publisher**; **Volume**; **Issue**; **Date**; **Discipline**; **Subject**; **Topic** and **Locator**.

The editor of the Index has had to exercise constraint because of limited space in the assignment of the supplementary keyword phrases that are used under the **Subject** categories. Consequently, the user must often look under the **Topic** category before finding the intended field of inquiry.

The user may not find the entry at the first place searched. Therefore, a computerized database retrieval allows the user to look under any one of the main categories believed appropriate.

In the Index, authors appear alphabetically. If no author is known, the title or subject of the entry is listed under the **Author** column.

In some cases, the title of a book is followed by the chapter or chapters of interest which are italicized. If the entry is a book, the publisher and date of publication will appear under the appropriate category.

If the entry search is for an article, the complete article name can be found under the heading **Article**. Also found under this category is any unpublished work. The publication name is listed under the **Publication** category which also includes journals. Journal entries include issue and volume numbers, as well as the month and year of publication for easier access and location.

Unpublished works can be obtained from consulting the **Locator** column at the end of the Index. All codes for locators are listed at the back of this volume in the section entitled **List of Locators** which includes complete names and addresses where the information can be obtained.

Subject entries are broader and often not so sharply defined, whereas topic entries are as focused and as specific as possible.

The criteria for **Discipline** entries for inclusic involves considerations of whether the entry falls into the domain of several disciplines rather than one. This is why frequently several disciplines will be listed under this heading.

Contributions by readers from non-standard sources are vital if coverage is to continue to be extensive. Copies of relevant articles or publications are welcomed and contributors will be appropriately acknowledged in future issues of the Index.

Carla Tedeschi

List of Contributors

This section is to give proper acknowledgement to those who have made considerable contributions to the Index in addition to the editor. Without their help and altruistic aid the Design Theories and Methods Index would not have been possible.

Deborah A. Beardslee
Deborah Beardslee possesses a Bachelor of Fine Arts Degree in Graphic Design and a Masters degree in Visual Communications.

In addition to teaching full time at Rochester Institute of Technology, she is also actively involved in research related to visual communication, design methodology, design education, and interdisciplinary relationships. She currently serves as a member of the board of the Graphic Design Education Association.

Pamela Blum
Biography to come.

Kevin Byrne
Kevin Byrne holds a bachelor's degree in fine arts and graduate degrees each in graphic design and geography. In addition to teaching fulltime at the Minneapolis College of Art and Design, Byrne writes occasionally about visual communications design for several trade and scholarly publications. His interests include communication theory, design methodology, formulative evaluation of design prototypes, and Postscript-based cartography. He currently serves on board of the American Center for Design and is publications editor for the Graphic Design Education Association.

Meredith Davis
Biography to come.

R. Roger Remington

R. Roger Remington is Professor of Graphic Design at Rochester Institute of Technology. A graduate of RIT and the University of Wisconsin, he is also President of Royce Productions, a Rochester-b marketing/communications firm.

His career has included being a practicing graphic designer, a consultant, a printmaker, an administrator, a teacher, a historian, a writer and most recently an advocate for the preservation and interpretation of the history of Graphic Design. He has been co-producer of two major symposia on the history of Graphic Design at RIT, of which the first, conducted in 1983, is generally perceived as an historical event in itself. In early 1989 the MIT Press began distribution of a new book, Nine Pioneers in American Graphic Design, which was written with colleague Barbara Hodik. He is developing the "Graphic Design Archive", a desk-top electronic archive on the history of Graphic Design. This is being accomplished by joining the capacious storage of the laserdisc with the interactive capabilities of the computer. Remington has received continuing grants from the National Endowment for the Arts, the New York State Council on the Arts, the Graham Foundation, RIT and Apple Computer Inc.

He is an active participant in educational enhancement programs, serving as Vice-President of the Graphic Design Education Association. In this capacity he was co-chair of the 1989 Annual National Symposium of GDEA. He is a member of the Board of Directors of GDEA and was a founding member of the Board of Directors of GDEA and was a founding member of the AIGA/Rochester chapter.

Steven Skaggs

Steven Skaggs received his master of Science degree in Communication Design from Pratt Institute in 1977. Concentration on letterform design, he continued his studies under the master calligrapher and type Herman Zapf during the summers of 1980 and the Rochester Institute of Technology.

His professional work fits into four categories: visual identity design, lettering, music composition, and semiotics. An ardent generalist, he nevertheless stresses that his pursuits revolve around a common core:

> "My interest is to explore the relationships between the written and the spoken, the seen and the heard. It is the connection itself that is the focus of my activities."

Skaggs' work has appears in the books *Print Casebooks, International Calligraphy Today, Typography 4, Three:Sixteen,* while articles by him have been printed in *Calligraphy Review, Quill* and *Scribe.* His lettering art has appeared in exhibitions in this country as well as South America and Europe. His composition, *Textures and Fragments,* won a performance award in the New Sounds '91 competition. His typeface design, *Florencia,* has been aquired for release by the World Typeface Corporation. In 1992, he began *Telesis,* an electronic network devoted to the discussion of visual semiotics and graphic design.

Steven Skaggs lives in Louisville, Kentucky where he is Associate Professor of Design at the University of Louisville.

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Adobe Catalog		Typographic Variables							Typographic Variables	Kind, size, weight, position, etc.	
Akin,O	Emerging Methods *An Exploration of the Design Process*			MIT					Environmental Methodology	Environmental methodology, protocol analysis	
ALA		Reader Profile	Law Practice Management				1990			Survey	
Aleshire, K R		Online Data Bases: Time vs. Money	Computer User				12-1987		Methodology	Research, literature search, online database	
Alexander, C		A Result in Visual Aesthetics	*British Journal of Psychology*		51	4	1960	Psychology	Theory and Methodology	Theory, hypoempirical methodology, experiment, comparing forms, verbal-visual translation	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Alexander, C	Pattern Language										
Alexander, C	Notes on the Synthesis of Form										
American Society of Industrial Designers		Proposed Contract Forms		ASID						Methodology, design management, design business, ASID	*
Anderson, B	The Complete Thinker *Decision Making with Multiple Futures*									Methodology, decision making, decision tree, multiple futures	
Apple Computer Company		Interface Design Criteria							Apple Desktop	Self-directed exploration, fundamental principles of Apple Desktop Interface	*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Archer, B L	Systematic Method for Designers										
Arnheim, R	Visual Thinking			University of California Press			1972	Art/Philosophy	Visual Perception		
Arnheim, R	Art and Visual Perception			University of California Press			1965				
Bare, J		Symbols/Logos					1976	Graphic Design	Identification	Six types of identification, logotype, product or service, allegorical, literal, illustrative, abstract, initial	*
Barthes, Roland	Elements of Semiology			Cape			1967				

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Bennington College		Bennington Plan: Student Evaluation					1988	Education	Planning Student Evaluation		*
Benun, I; Mascelli, A		To Plan Or Not to Plan	HOW							Specific marketing plan, goal, market, promotional tools, actions, time and money	*
Bertin, Jaques	The Semiology of Graphics										
Bitgood, S; Patterson, D; Benefield, A		Exhibit Design and Visitor Behavior: Empirical Relationships	Environment and Behavior				7-1988		Theory and Methodology	Environmental Theory, hypoempirical methodology, zoo, visitor behavior, exhibit design, evaluation, correlational procedures, case study	
Blonsky, M	On Signs			John Hopkins University Press			1985				

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Blum, P		Matrix for Questionning and Thinking					1990		Questioning and Thinking Matrix	Encoding and decoding visual language	**
Bring, R C; Wyman, S G		Developing Non Verbal Operating Instructions	32nd International Technical Proceedings				5-1985		Vis com theory and methodology	Vis com theory, vis com methodology, document evaluation, task analysis, graphic instructions	
Brinton, J		The 'Feeling" of Type Faces	Communication Arts		3	10	10-1961			Vis com theory, hypoempirical methodology, connotation, semantic differential, typography	
Broadbent, G		A Plain Man's Guide to the Theory of Signs in Architecture	Architectural Digest		7-8	77	1977	Architecture		Theory, methodology, semiotics, information theory, sign theory, semantics, denotation and connotations	
Broadbent, G	Design: Science: Methods *Design Methods, 13 Years After, a Review*			Westbury			1981	Architecture	History and Methodology		

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Broadbent, G		Geoffrey Broadbent on Current Directions in Design Methods	Design Methods and Theory		20	2	1986	Architecture	History and Methodology	History, methodology, stages, prospect	
Broadbent, G	Developments in Design Methods *The Development of Design Methods*							Architecture	History Methodology	History, methodology, design methodology pioneers	
Brower, B		The Pernicious Power of the Polls	Money				3-1988		Vis com theory and Methodology	Vis com theory, methodology, surveys, polls, marketing, demography	
Brown, P B		The Anti-Marketeers	Inc.				3-1988		Vis com theory and Methodology	Vis com theory, product theory, methodology, case study, marketing	
Bruce, V; Green P	Visual Perception			Lawrence Eribaum and Associates			1985				

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Bruner, J	On Knowing			Belknap Press			1962	Psychology	Theory of Learning	Knowledge: creative, predictive, formal	
Brutton, M		Evaluate or Mutilate? That is the Question	Design							Theory, methodology, criticism, evaluation, Jay Doblin, Massimo Vignelli, case study, ICOGRADA	
Brutton, M		Why Designers Should Stop Worrying and Learn to Love "Design Evaluation"	Design		354		1978		Vis com theory and Methodology	Vis com theory, vis com methodology, criticism, evaluation, ICOGRADA Congress, case study	
Burton, R B; Brown, J S		An Investigation of Computer Coaching for Informal Learning Activities	Man-Machine Studies International Journal		11		1979		Vis com theory and methodology	Vis com theory, methodology, computer aided instruction, informal learning, computer coaching	
Buzan, T	Use Both Sides of Your Brain			E P Dutton, Inc			1979	Scientific		Mind-mapping	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Byrne, K		Matrix	Graphic Design Education Association				1991	Graphic Design		Content/means typographic matrix	
Byrne, K		Reading List: Design Methods								Reading list for design methods (MCAD)	
Byrne, K		Do We Really Need to Teach Design Methods?					7-1989			Definitions, perspectives, propositions, projects, prospects	
Byrne, K		Should Graphic Design Make A Case of It?								Early tasks in a case study: A make believe example	
Byrne, K		Audience-Centered Design					6-1990			GDEA Symposium, evaluation theory and methods	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Byrne, K		Teaching Design Evaluation	Icographic II		2		7-1983			Design evaluation	
Byrne, K		How To Administer and Tally								Semantic differential	
Campbell, J	Grammatical Man			Simon & Schuster			1982	Scientific	Information entropy and Life	Examination of intractable problems from a higher point of knowledge, linguistic model	
Canon Diagram		Canon Diagram							Cannon Diagram	Canon is a strict and continous imitation between several identical parts which enter, not simultaneously, but one after the other	
Cataldo, E; et al		Card Sorting as a Technique for Survey Interviewing	Public Opinion Quarterly		34		1970			Methodology, survey research, Q-technique	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Caudill, W; et al	Architecture by Team *Product Evaluation by Jury*							Architecture	Environmental Methodology	Environmental methodology, research, postdesign evaluation, quality quotient	
Champness, B G; deAlberdi, M	Measuring Subjective Reactions to Teletext Page Design			Alternae Media Center			9-1981		Vis com theory and Methodology	Vis com theory, methodology, evaluation, typography, computer graphics, teletext	
Cheek, N H		People at the Zoo	Animal Kingdom				6-1973		Environmental methodology	Environmental methodology, zoo, demography, attitude/behavior survey	
Coates, D		Measuring Product Semantics with a Computer	Innovation		7	4	1988		Methodology	Vis com/product methodology, semantic differential, computer aided problem solving	
Cohen, M; Winkel, G; et al		Orientation in a Museum- An Experimental Visitor Study	Curator		20	2	1977		Methodology	Vis com methodology, museum exhibits, hypoempirical methodology, maps, wayfinding signage	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Collins, B L; Pierman, B C		Establishing Ways to Decide whether People Understand Symbols	Industrial Design				7-1979	Industrial Design	Theory and Methodology	Vis com theory, methodology, evaluation, symbols (July/August 1979)	
Covino, W		Visual Symbol Classification System					1-1987	Graphic Design		Classification originally designed by Hans Weckerle and altered by Covino (January 10, 1987)	-
Cross, N; Nathenson, M	Design: Science: Method *Design Methods and Learning Methods*			Westbury			1981			Vis com methodology, psychology of learning, learning styles, serialist: holist, convergent: divergent thinking, creativity	
D'Angelo, E	The Teaching of Critical Thinking			B R Gruner			1971		Critical Thinking	Theory, methodology, criticism, critical thinking	
Davis, R C; Smith, H J		Determinants of Feeling Tone in Type Faces	*Journal of Applied Psychology*		17		1933	Psychology	Vis com theory and methodology	Vis com theory, hypoempirical methodology, typography, semantics, correlational procedures, congeniality study	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Dawson, J		Measures of Aesthetic Sensitivity as Predicators to Performance in the Visual Arts	*Information Design Journal*		1		1980		Vis com theory and methodology	Vis com theory, experimental aesthetics, hypoempirical methodology, line drawings, semantic correlational proce	
de Saussure, F	Course in General Linguistics						1983	Linguistics			
deBono, E	Lateral Thinking			Perennial Library			1990		Creative Thinking		
Delbecq, A L; Van De Ven, A		Nominal Versus Interacting Group Processes for Committee Decision- Making Effectiveness	*Academy of Management Journal*				6-1971		Methodology	Group dynamics, decision-making	
Dilnot, C	Design: Science: Method *Transcending Science and "Anti-Science" in the Philosophy of Design Method*			Westbury			1981		Scientific	Theory, methodology, philosophy, criticism, subjectivity: objectivity	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Doblin, J		A Proposed Theory of Design							Theory and Methodology	Theory, hypoempirical methodology, USA theory, semantic differential, denota connotation	
Doblin, J		How Designers Should Use Computers	STA Design Journal		1	1			Theory and Methodology	Theory, methodology, computer aided discovery, intuitive vs, methodological, play, conceptual maps, determinism: probalism	
Doblin, J		A Theoretical Model for Design Evaluation	Industrial Design				1979			Design evaluation (January/February 1979)	
Document Design Center		Six Graphic Guidelines	Simply Stated: Document of the Design Center			30	10-1982	Graphic Design	Typographic Variables		
Document Design Center		The Process Model of Document Design	Simply Stated				7-1981		Process Model	Pre-design steps, design steps, post design steps	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Dougherty, P H		Researchers as Agency Therapist	New York Times				10-1984			Methodology, advertising research, creati (Tuesday, Oct. 30, 1984	
Dreyfuss, H	Designing for People *Joe and Josephine*			Simon & Schuster			1955	Industrial Design		Methodology, human factors research, ergonomics	
Dreyfuss, H	Designing for People *The Importance of Testing*									Methodology, evaluation, human factors, mockup evaluation	
Eco, E	A Theory of Semiotics			Indiana University Press			1976				
Fechter, J		The Key to this Factor is Human	The Residential Roundup							Methodology, human factors	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Floreak, M		Designing for the Real World: Using Research to Turn a "Target Audience into Real People	Technical Communication				1989			Target audience	
Friedman, A; Zimring, C; Zube, E	Environmental Design Evaluation *Environmental Design Evaluation Epilogue*			Plenum Press			1978	Architecture		Environmental methodology, evaluation, surveys, interviews, reliability, obtrusive measures, simulation	
Friedman, C P		Instructional Objectives					1975	Education	Instructional Objectives	Objectives, format, evaluation	*
Friedman, D		Introductory Education in Typography	Visible Language				1973	Graphic Design	Typography		
Frith, U	Processing of Visible Language *Reading by Eye and Writing by Ear*			Plenum Press			1979			Visible language, verbal-visual translation, hypoempirical methodology, language reception, language production	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Gagne, R M; Wagner, W; Rojass, A	Instructional Software *Planning and Authoring Computer-Assisted Instruction Lessons*			Wadsworth			1984			Computer-aided instruction, methodology, learni theory	
Gasson, P C	Theory of Design			Batsford			1973	Engineering	Engineering Design		
Geertz, C	The Interpretation of Cultures			Basic Books			1973				
Gerstner, K	Designing Programmes	Morphological Box of the Typogram		A. Niggli Ltd			1964	Design	Theory and Methodology	Theory methodology	
Gerstner; Remington		Modified Box of the Typogram					1987	Design	Theory and Methodology		*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Getzels, J W; Czikszentmihalyi, M C		Aesthetic Opinion: An Empirical Study	Public Opinion Quarterly		33	1	1969			Vis com theory, hypoempirical methodology, experimental aesthetics, aestl evaluation, expert:	
Ghory-Goodman, A		Initiation to Criticism: Strategies and Considerations for Conducting Freshman Crits					6-1990	Graphic Design Education		Strategies for criticism, based on goals and intentions	*
Gibson, J J	The Ecological Approach to Visual Perception			Houghton Mifflin			1979	Psychology	Visual Perception		
Gombrich, E H	Meditations on a Hobby Horse		Phaidon				1963				
Gordon, W J	Synectics			Harper & Brothers			1961			Synectic Group, scientific model, metaphor	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Gordon, W J	The Metaphorical Way of Thinking and Learning										
Graham, J		Getting the Best from Your Creative Staff	Industrial Design				10-1979			Creativity theory, methodology, idea development, deadlines	
Green, P E; Wind, Y		New Way to Measure Consumers' Judgments	Harvard Business Review				1975			Vis com/product theory, methodology, survey research, conjoint measures, perceptual maps, cluster analysis, case study (July/August 1975)	
Griggs, S A; Manning J		The Predictive Validity of Formative Evaluation of Exhibits	*Museum Studies Journal*		1	2	1983		Validity	Validity of formulative evaluation	
Guilford, J P; Holley, J W		A Factorial Approach to the Analysis of Variances in Esthetic Judgments	*Journal of Experimental Psychology*		39		1949	Psychology	Vis com theory and methodology	Vis com theory, hypoempirical methods,experimental aesthetics, Q-technique, correlational procedures, factor analysis	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Halprin, L	RSVP Cycles			G. Braziller			1969	Human Ecology		Creation: literary, artistic, scoring	
Halprin, L	Taking Part										
Hanno, E; Lupton, E		Design Papers 5: Rhetorical Handbook ?					1987				
Hardiman, G W; Zemich, T		Some Considerations for the Measurement of Preference in the Visual Arts	Review of Res. in Visual Arts Education		73	4				Theory, hypoempirical methodology, experimental aesthetics	
Hewes, J J		Combing the Electronic Archive	MacWorld				5-1985			Methodology, research, online database, online search strategies	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Hiebert, K	Graphic Design Processes: From Universal to Unique			Van Nostrand Reinhold			1991	Graphic Design	Graphic Design Processes	Space, sign, symbol, word/image, texture/pattern, color overlay, time	
Hill, P		Morphological Diagrams						Design		Problem is part of the solution, basis, colour, appearence, expression	*
Hill, P	The Science of Engineering Design			Holt, Rinehart and Winston, Inc				Engineering	Engineering Design	Life cycles , morphological idea matrix, creative process, design process, decision matrix,	
Hodik, B	Final Project Report - Art History	9 Ways of Organizing Content					1980	Education		Sequential, retrospective, theory, style, thematic, micro/macro, problem solving, media, person/process/ product	*
Hollie, P		What's New in Market Research	New York Times				6-1986			Vis com theory, methodology, market research survey, polls (Sunday, June 15, 1986)	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Hucek, A; Whitney, P		Annotated Bibliography	Icographic							Methodology, research, evaluation	
Hurlburt, A	The Design Concept			Watson-Guptill			1981	Graphic Design		Creative process, design process, word and image, editorial concepts, logic and design	
Jacob, H		Lecture Charts								Education, methodology, Visual lectures, lecture charts	
Jay, A	The Client - Consultant Handbook *Rate Yourself as a Client*			Gulf Publishing			1979			Methodology, client-consultant relationship, professionalism	*
Jewett, D L		Multti-Level Writing in Theory and Practice						Linguistics		Background and theory, typographical methods, hierarchical ordering	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Jones, C	Design Methods			Wiley - Interscience			1970		Architerctural Model	Architectural model	
Jung, C G	Man and His Symbols			Dell			1968				
Kirk, Girven		How to Aim Accurately at the Minds of Child Readers	Design		354		1978			Methodology, mockup evaluation, case study, publication evaluation, illustration, Sesame Street magazine	
Klingel, J		Will Your New Magazine Idea Fly?	Folio				7-1988			Concept, feasibility, capital, direct mail, test results, revisions	
Koberg, D; Bagnall, J	Universal Traveler *Problem Solving Process*			Crisp Publications			1991	Graphic Design	Creative Problem Solving	Design process: accept, analyze, define, ideate, select, implement, evalute	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Koten, J		Car Makers Use "Image" Map as Tool to Position Products	Wall Street Journal				3-1984			Theory, methodology, market research, automobile, percep maps (Thursday March 22, 19	
Krampen, M		Design As Creative Problem Solving								Vis com methodology, creativity theory, problem solving, protocol analysis, expert: novice	
Krampen, M		Icons of the Road	Semiotica		43	1-2	1983			Vis com theory, information theory, hypoempirical methodology, semiotics, perceptual psychology, symbols, icons, road sign systems	
Krampen, M		Signs and Symbols in Graphic Communication	Design Quarterly 62				1965				
Lasswell, H		A Communication Theory Grid					1970		Communication Theory	Providing a structure in order to analytically view and consider the problem	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Lasswell, H D	Propaganda Techniques in WWI			MIT			1971				
Leff, H S	Construing The Physical Environment: Differences Between Environmental Professionals and Lay Persons			Dowden, Hutch & Ross			1973			Environmental theory, environmental perception, hypoempirical methodology, expert: nonexpert	
Lewin, T		Casting An Anthropological Eye on American Consumers	New York Times				5-1985	Anthropology		Theory, methodology, market research, anthropology, direct observation (Sunday, May 11, 1986)	
Lewis, E; et al	An Empirical Comparison of the Effectiveness of Typeset, Typewritten, and Dot Matrix Business Documents			Compugraphic Corp			5-1984			Vis com hypoempirical methodology, research, typography, legibility	
MacProject		Project Planning Time Schedule							Project Planning		*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Magid, L J		P C's New Role: Meeting Facilitator	Los Angeles Times				6-1987			Computer technology, methodology, group dynamics, meeting facilitation (Monday, June 15, 1987;	
Mann, J		Assessing Effectiveness Before a Design is Produced	Industrial Design					Industry		Methodology, evaluation, marketing effectiveness	
Manning, R A		Notes on the Visual Differential Theory	Visible Language		13	4	1979			Conceptual model, visual differential, Osgood, Dondis, order mode, graphic mode, literal mode	
Margolin, V	Design Discourse			University of Chicago Press			1989				
Marketing		Marketing: The New Priority	Business Week				11-1983			Marketing, market research, consumers, new product development, methodology, focus groups	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Maslow, A H; Mintz, N L		Effects of Esthetic Surroundings:	Journal of Psychology		41		1956	Psychology		Environmental theory, hypoempirical methodology, environmental psychology, near environments	
Mauro, C		Advances in Application of User Data to Product Design	Industrial Design		24		1977	Industry		Product design methodology, human factors research, data bases, consumer product evaluation, product safety (July/August 1977)	
Mauro, C		How and Where to Find Research Literature	Industrial Design				1979			Methodology, human factors research, on line data bases, literature search (March/April 1979)	
Mayer, R F	Preparing Instructional Objectives			Fearon Publishers			1962		Programmed Instruction	Preparing objectives	
McCarthy, B	The 4Mat System: Teaching to Learning Styles Using Right/Left Mode Techniques			Excel Publishing, Inc				Education		The complete 4Mat System model, problem finding, problem solving	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
McCoy, K		Client Guide to Printed Communication		Cranbrook Academy of Art			1977	Business		Client design input. design decisions	*
McGrath, D J		24 Hours of Crime in the City/ Typical Day: Minor Thefts, 23 Assaults, No Killings	Minneapolis Star and Tribune				1979			Methodology, research, direct observation, reportage, urban crime (March/April 1979)	
McLaughlin, G H		Comparing Style of Presenting Technical Information	Ergonomics		9	3	1966			Hypoempirical methodology, human factors research, evaluation, document design, typographic and graphic design	
Miller, R S ; et al	The Design of Educational Exhibits			London: Unwin Hyman			1988			Educational exhibits	
Morris, C	Signs										

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Moyer, K		The Hierarchy Project					1989	Graphic Design		Visual logic, criteria for making typographic decisions	*
Nadin, M; Ockerse, T		Semiotic Analysis						Graphic Design		Iconic, indexic, symbolic	*
Naisbitt, J	Megatrends			Warner Books			1982			Content analysis, social indications, predictions	
O'Brien, D	Innovation Is *Proceedings of a Workshop Held During the Design Policy Conference, Royal College of Art*			Applied Creativity			8-1982			Methodology, information generators, open ended questions, design policy conference, design innovation, group dynamics	
Osborn, A F	Applied Imagination			Scribner			1957		Creation and Applied Imagination,	Principles and procedures of creative thinking	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Overview		An overview of 'Creative Problem Solving", North Hennepin Community College								Creativity theory, creativity methodology, critical thinking	
Patton, P		The Shape of Ford's Success	New York Times Magazine				5-1987		Product Theory	Biography: Jack Telnack, Ford Motor Company, aero car, research and development, methodology, verbal goals	
Peirce, C S	Collected Papers of Charles Sanders Peice										
Pena, W	Problem Seeking										
Pert???? See Keough	Pert *The Planning of Engineering Projects*							Engineering		Time oriented network, network, events, acvtivities	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Picasso, P	Child and Caveman			Rizzoli			1977		Creative Problem Solving		
Picasso, P	Creation							Psychology	Creation	Literary, artistic	
PitneyBowes	Pitney Bowes	Graphic Standards Manual					3-71	Graphic Design		Graphic standards manual to introduce the primary elements of the new corporate identity program including guidelines	*
Plummer, C		Research and Program Development					1990	Social Science		Conceptualize, input, process, outcome	*
Plummer, C		Proposal Development Simulation					1989	Social Science		Input, process, output	*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Plummer, C		Discrepency Evaluation Cycle					1991	Social Science		Provides information for improving and assessing educational programs	*
Rapaport, A	First Annual Environmental Proceedings *An approach to the Study of Environmental Quality*			Halsted/ Wiley			1970	Anthropology		Environmental methodology, research, environmental perception, quality	
Reeves, T C; Lent, R M	Levels of Evaluation for Computer-Based Instruction			Wadsworth			1984			Vis com methodology, learning theory, evaluation, computer aided instruction	
Remington, R		Marketing/Analysis Questionnaire					1988	Graphic Design		Client analysis questionnaire	*
Remington, R		Semiotic Construct					1991	Graphic Design		Semiotic codes, paradigms, relationships, operations, evaluations.	*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Remington, R		Process For Designing Trademarks					1990	Graphic Design		Analysis, Synthesis	*
Remington, R		Identity Evaluation Matrix					1990	Graphic Design		Syntax, semantics, pragmatics	*
Remington, R		Visual Identity Element Matrix					1990		Matrix	Visual Identity Element Matrix	*
Remington, R		Identity Appropriateness					1989		Identity Appropriateness	Id type appropriateness analysis based upon William Covino classification system for symbols and logos	*
Remington, R; DePrez, G		Educational Program Development Plan: Design Management for Federal Agency Administrators					1975	Graphic Design		Problem analysis, proposal format	*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Riche, M F		Who Says Yes?	American Demographics				2-1987			Methodology, polls, surveys, demographym market research	
Robledus, A		Picas & Pixels								Marketing strategy	*
Rosenfield, S; et al		A Naturalistic Study of Visitors at an Interactive Mini-Zoo	Curator 25		25	3	1982			Environmental methodology, mini-zoos, research, education, learning, surveys, direct observation	
Rothenberg, Albert	The Emerging Goddess			University of Chicago Press			1979		The creative process in Art, Science and other fields	Creative thinking, creation	
Rowe, P G	Design Thinking			MIT			1987	Architecture		Systematic accounts of the design process in architecture, iconic, Asimow, decision tree, etc.	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Rubenstein, M	Patterns of Problem Solving *Twelve Patterns for Problem Solving*			Prentice Hall			1975	Mathematics		Creativity methodology, problem solving, mathematical models decision making	
Safan-Gerard, D		How to Unblock	Psychology Today				1-1978	Psychology		Creativity theory, methodology	
Schiller, G		An Experimental Study of the Appropriateness of Color and Type in Advertising	Journal of Applied Psychology		19		1935	Psychology		Hypoempirical methodology, correlational procedures, typography, color	
Screven, C G		Exhibit Evaluation: A Goal-Referenced Approach	Curator		19	4	1976			Methodology, exhibit design, goal-referenced evaluation, visitor learning in museums	
Screven, C G		How A Lump of Rock Failed to Make Its Point	Design		354		1978			Methodology, mockup evaluation, case study, museum exhibit design, Screven	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Screven, C G		The Effectiveness of Guidance Devices on Visitor Learning	Curator		18	3	1975			Visitor learning in museums, exhibit guidance devices, behavior studies, hypoempirical methodology	
Screven C G		Evaluation and the Exhibit Design Process: Pretesting Audiences as a Design Tool						Psychology		Specific method for evaluating communication effectiveness of a design process during the development of stages	*
Serrell, B		Loooking at Zoo and Aquarium Visitors	Museum News				1980		Environmental and Hypoempirical methodology	Environmental and hypoempirical methodology, zoo/aquarium research, demography, visitor behavior, etc. (November/December 1980)	
Serrell, B		Survey of Visitor Attitude and Awareness at an Aquarium	Curator		20	1	1977			Environmental methodology, aquarium, demography, attitude survey	
Serrell, B		The Evolution of Educational Graphics in Zoos	Environment and Behavior		20	4	7-1988			Environmental methodology, wayfinding, orientation, zoos, history, visitor behavior, signage, evaluation	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Shontz, W D; Trumm, G A; Williams, L G		Color Coding for Information Location	Human Factors		13	3	1971			Color theory, interface displays, perceptual psychology, color coding, hypoempirik methodology, aeronautical maps, cartography	
Siegel; Gale	Corporate Identity Siegel & Gale	Mellon Bank: Evolution of a Corporate Identity Program					1980	Business/ Graphic Design		Visual identity process, communications audit, concept, development, introduction, implementation,	*
Skaggs, Steven		Ways of Knowing: Four processes of receiving messages					1991				***
Smith, C N	Structuralism	Proportional Grids					1986		Methodology	Proportional grid systems, golden section rectangle, whirling squares, whirling squares by Hambridge, root rectangles	
Spoehr, T; Lehmkuhle, S W	Visual Information Processing			W.H. Freelance and Company			1982				

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Sweinhart, R O		Trademark Field	Carnegie Mellon University				1989	Graphic Design		Symbol and classification	*
Swineharrt, R O		Identity Marks Classification Matrix #1	Carnegie Mellon University				1988			Wordforms, letterforms, abstract forms, symbolic forms, pictograms (representational)	*
Thiis-Evensen, T	Archetype in Architecture										
Thirty... ?		Thirty Clarifying Responses						Evaluation		Methodology, a dialogue study, evaluation	
Tufte, E R	Envisioning Information			Graphic Press			1990				

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Turner, S D		Using Sentence Completions: A Way Into Worldview?			14	3	1982			Methodology, sentence completion, open en questions, hierarchi cluster analysis, geographic lifeworl	
Urban, G L; Hauser, J R	Design and Marketing of New Products *Consumer Measurement- A Review*			Prentice-Hall			1980	Industrial Design		Methodology, market research, literature search, consumer measurement, surveys, semantic differentials, Likert scales	
Urban, G L; Hauser, J R	Design and Marketing of New Products *Perceptual Mapping: Consumers' Perceptions of New and Existing Products*			Prentice-Hall						Methodology, perceptual maps, market research, product development	
Van Oech, R	A Whack on the Side of the Head										
Van Oech, R	A Kick in the Seat of the Pants										

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Vickers, D	Decision Processes in Visual Perception			Academic Press			1979				
Vygotsky, L S	The Psychology of Art			MIT Press							
Walizer, M H; Wienir, P L	Research Methods and Analysis: Searching for Relationships *The Never Ending Process*			Harper & Row			1978			Methodology, theory, anatomical parts, research methods	
Walonick, D		Vital Statistics: For Whom and Why?	Computer User				4-1986			Theory, methodology, statistics primer, forecasting	
Weckerle, H		Visual Classification System								Verbal, icon, mark, emblem	*

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Westinghouse		Developing the Grid System								Modular grid system: typographic, Ken Hiebert, Paul Rand	*
Whitney, P		Four Real Cases of Design Evaluation	Industrial Design				1979			Vis com theory, methodology, evaluation, flow diagram, case study, mockup: post design (January/February) 1979	
Whitney, P		Cognition and Design Group	Design Processes Newsletter		1	3	1985			Cognition	
Whyte, W H	Social Life of Small Urban Spaces *Time- Lapse Filming*			Conservation Foundation			1980			Methodology, time-lapse photography, direct observation, public urban spaces	
Wiersman, W	Research Methods in Education *The Review of the Literature*			F. E. Peacock			1975	Education	Systematic Process	Flowchart of activities, periodical literature, periodical indexes, abstract, computer-assisted search, descriptors, critical review	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Williams, F	Reasoning with Statistics *Factor Analysis*						1979			Methodology, correlational procedures, factor analysis	
Winkel, G H		The Challenge of the Case Study for the Environmental Design Researcher	Center for Human Environments, CUNY							Environmental theory, methodology, research, case study approach	
Winn, M		New Views of Human Intelligence								Types of intellegence, linguistic, intrapersonal, logical-mathematical, musical, interpersonal, spatial, bodily-kinesthetic	
Wurman, R. S		On Indicating Magnitude					1986	Urban Planning		Three ways of showing magnitude	
Yale University		Bibliography for Graphic Designer					1989	Graphic Design		Intended as a guide for Graphic Designers who wish to assemble a basic working library	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Zachrisson		Questions of Legibility	DotZero		1		1966			Vis com theory, hypoempirical methodology, typography, legibil congeniality	
Zakia, R		Representational Matrix					1991	Sign Theory		Semiotics, sign theory	*
Zakia, R; Stroebel, l; Todd, H	Visual Concepts for Photographers *Semantic Differential*							Education		Evaluation	
Zeisel, J	Inquiry By Design *Observing Environmental Behavior*									Environmental methodology, research, behavior, direct observation, sociocultural patterns, recording devices	
Zeisel, J	Inquiry By Design *Observing Physical Traces*									Environmental methodology, research, physical traces, direct observation, sociocultural patterns	

Author	Book	Article	Publication	Publisher	Volume	Issue	Date	Discipline	Subject	Topic	Locator
Zeisel, J	Inquiry By Design *Standardized Questionnaires*									Environmental methodology, research, questionnaires, surveys	
Zimmerman, Y		Identity Symbol Method					1974	Graphic Design/ Methodology	Fusion Methods	Abstract symbols created from basic geometric shapes	*

Locator

** Pamela Blum
Rochester Institute of Technology
College of Fine & Applied Arts
James E. Booth Building
Post Office Box 9887
Rochester, New York 14623-0887

**** Kevin Byrne
Minneapolis College of Art and Design
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Minneapolis, Minnesota 55404

* R. R. Remington
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Post Office Box 9887
Rochester, New York 14623-0887

*** Steven Skaggs
Fine Arts Department
University of Louisville
Louisville, Kentucky 40292

Appendix E

Timeline

Thesis Timeline for September 1991-June 1992

September 1991:

9-5 Fall Quarter Begins
9-5 Meeting with R.Remington: Review initial proposal.
9-17 Initial Statement due
9-26 Initial Statement approved

October 1991:

10-1 Meeting with RRR: Rework and refine proposal
10-8 Meeting with RRR: Continue refinements of goals, objectives and strategies
10-15 Meeting with RRR: Continue refinements of proposal
10-22 Meeting with RRR: Continue refinements of proposal

November 1991:

11-5 Meeting with RRR: Continue refinements of proposal
11-13 Final critique of proposal

December 1991:

12-3 Winter quarter begins
12-3 Meeting with RRR and Deborah Beardslee: Begin Theory and Method Index
12-10 Meeting with RRR and DB: Continue work on Index
12-17 Committee Meeting (1:00) RRR, DB and Pamela Blum: Review Index, discuss posters

January 1992:

1-7 Meeting with RRR and DB: Review changes on Index and research posters
1-14 Meeting with RRR and DB: Discuss possible Theory and Methods for poster
1-21 Meeting with RRR and DB: Continue poster development
1-28 Meeting with RRR and DB: Continue development and research

February 1992:

2-4 Meeting with RRR and DB: Continue research and development
2-11 Meeting with RRR and DB: Continue research and development
2-18 Committee Meeting: Begin Implementation

March 1992:

3-10 Spring quarter begins
3-10 Meeting with RRR and DB: Implementation of posters
3-17 Meeting with RRR and DB: Continue implementation
3-24 Meeting with RRR and DB: Critique Posters
3-30 Thesis Exhibit
3-31 Begin documentation of thesis

April 1992:

4-7 Documentation
4-14 Documentation
4-21 Documentation
4-28 First draft of thesis handed in to RRR, DB and PB

May 1992:

5-15 Committee Meeting: Sign Thesis
5-23 Graduation

June 1992:

6-12 Thesis due

Appendix F

Beardslee's
Visual
Design
Process
Handouts

10/29 # The Design Process

1. Problem Identification

Defining & Understanding the Nature of the Problem

Seek

2. Research & Analysis

Systematic Inquiry - Discover Facts or Relationships
that May Aid in Solving the Problem

3. Synthesis

Discover Interrelationships & Patterns
Sort, Sequence, Order Information or Parts of the Problem

4. Ideation

Generate Conceptual Solutions
Prepare Alternative Preliminary Designs

(DRAWING BOARD)
PREPARING ALTERNATIVES

Solve

5. Evaluation

Selection of Design Solution from Possibilities

6. Implementation

Refinement, Development, Production of Final Form

7. Retrospective Evaluation

Determination of Effects of Solution for Feedback into Future Problems

Seek

Feedback Loops

(AT ANY STAGE, USED TO STRENGTHEN THE ENTIRE PROCESS)

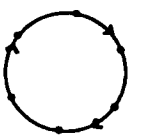
Process!

(DIFFERENT WAYS TO APPROACH THE 7 DESIGN PROCESSES)

Linear Process

Step-by-step, logical sequence

Circular Process

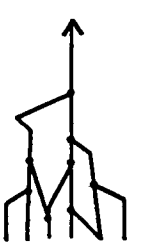


Starting at any stage and advancing to others in turn

Feedback Approach

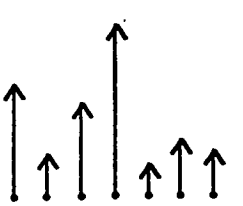
Moving forward while looping back to reconsider previous discoveries

Branching Paths



Allowing specific events and the interrelation of separate stages to control progress

Natural Pathway



Awareness of all stages concurrently but emphasis on one or two steps at a time

~~CASE HISTORIES~~

Problem Statements

Objectives

Constraints

Discussion

Requirements

Recording

Design Factors

1. Problem Identification

Key Words

Sub - Problems

Attributes

Parallel Problems

Role - Playing

Case Histories

Rank - Ordering

Courses of Action

Interaction Matrix

Timetable

Facilities

METHODS OR TOOLS TO AID IN STAGES ↑

User Identification

User Ergonomics

User Motivation

Literature Search

Environment

Sub-Problem Analysis

Function

Questionaires

Experiential Factors

2. Research & Analysis

Interviews

Mechanics

Bi-Polar Scales
(SEMANTIC DIFFERENTIA

Aesthetics

Direct Observation

Market Environment

Unobtrusive Measures

Archetypes

Scoring
(RSUP CYCLES)
IDENTIFYING PARTICULAR RELATIONSHIPS W/IN A CONTEXT.

Production

Constraints

Analogous Problems

(WURMAN)

Dependent Variables

Classification

Independent Variables

3. Synthesis

Venn Diagrams

(SET THEORY, FINDING INTERRELATIONSHIPS BETWEEN 2 BODIES OF INFORMATION)

Connections

Interaction Matrix

Outlines of Sub-Problem Solutions

Structured Relationships

Obvious Solutions

Remove Mental Blocks

BIOLOGY ORIGIN

Trendy Solutions

4. Ideation

Synectics (GORDON)

Ideal Solutions

Morphological Charts

Other Possibilities

Lateral Thinking

Brainstorming

(MIND MAPPING)

ASSOSIATIVE

(BRANCHING)

Selection

Feasibility Analysis

Rank Ordering

Reappraise Objectives

5. Evaluation

Comparing Ideas / Objectives

Goals

Definite Requirements

Constraints
(Budget, size, viewing, etc.)

Checklists

Requirements

Facilities

Finalize Design

Define Conceptual Ideas

Structural Ideas

Physical Ideas

Time / Task Schedule

Construct a Model

6. Implementation

Construct Variants

Implementing Performance Specifications

Compare Variants with Feasibility

Production

Specifications

Schedules

Documents

Production Supervision

Efficiency

Design Performance

Resolution of Objectives

Questionaires

Effectiveness

7. Retrospective Evaluation

Interviews

Solution of Sub-Problems

Observation

Incorporation of Requirements

Bi - Polar Scales

Handling Constraints

Checklists

List of Categories

Theory and Methods Index File: Possible Categories

Topic

Discipline

Periodical: Author
Title of Article
Title of Publication
Volume
Issue number

Book: Author
Title of Book
Place of publication
Publisher
Date

Appendix H

Remington's
Front
End
Tool
Kit

Roger's Front End Tool Kit: Index

47. Reading List on Methods from MCAD	K. Byrne
48. Notes on Methodology	K. Byrne
49. Case Study Article	K. Byrne
50. Design Evaluation Article	Screven
51. Thirty Clarifying Responses	
52. Criticism Article	Ghory-Goodman
53. Evaluation Form	Bennington
54. Discrepency Evaluation Cycle	C. Plummer
55. Audience-Centered Analysis	K. Byrne
56. Semantic Differential	Zakia
57. Learning Styles	M. Davis
58. Intelligence Article	
59. US Postal Regulations for Envelopes	
60. Handy Hints	Hodik
61. Pioneers in Graphic Design List	Remington
62. Graphic Design Curriculum	AIGA
63. Canon Diagram	

Revised 10/26/91

Byrne's Reading List

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Akin, O	An Exploration of the Design Process In EMERGING METHODS....		MIT Press			environmental methodology protocol analysis
Aleshire, K R	Online Data Bases: Time Vs. Money	1987 November		Computer User		methodology, research, literature search, online database
Alexander, C	A Result In Visual Aesthetics	1960		British Journal Of Psychology	51 (4)	theory, hypoempirical methodology, experiment, comparing forms, verbal-visual translation
Amer. Society Of Industrial Designers	Proposed Contract Forms		ASID			methodology, design management, design business, ASID
Anderson, B	Decision Making With Multiple Futures In THE COMPLETE THINKER					methodology, decision making, decision tree, multiple futures
ilgood, S; allerson, D; enefield, A	Exhibit Design And Visitor Behavior: Empirical Relationships	1988 July		Environment And Behavior	20 (4)	environmental theory, hypoempirical methodology, zoo, visitor behavior, exhibit design, evaluation, correlational procedures, case study
ring, R C; yman, S G	Developing Non Verbal Operating Instructions	1985 May		Proceedings, 32nd International Technical		vis com theory, vis com methodology, document evaluation, task analysis, graphic instructions

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Brinton, J	The 'Feeling' Of Type Faces	1961 October		CA	3 (10)	vis com theory, hypoempirical methodology, connotation, semantic differential, typography
Broadbent, G	A Plain Man's Guide To The Theory Of Signs In Architecture	1977		Architectural Digest	7-8/77	theory, methodology, semiotics, information theory, sign theory, semantics, denotation:connotations
Broadbent, G	Design Methods-13 Years After- A Review, In DESIGN:SCIENCE:METHOD	1981	Westbury			history, methodology
Broadbent, G	Geoffrey Broadbent On Current Directions In Design Methods	1986		Design Methods And Theory	20 (2)	history, methodology, stages, prospect
Broadbent, G	The Development Of Design Methods, In DEVELOPMENTS IN DESIGN METHODS					history, methodology, design methodology pioneers
Brower, B	The Pernicious Power Of The Polls	1988 March		Money		vis com theory, methodology, surveys, polls, marketing, demography
Brown, P B	The Anti-Marketeers	1988 March		Inc.		vis com theory, product theory, methodology, case study, marketing

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Brutton, M	Evaluate Or Mutilate? That Is The Question			Design		theory, methodology, criticism, evaluation, Jay Doblin:Massamo Vignelli, case study, ICOGRADA
Brutton, M	Why Designers Should Stop Worrying And Learn To Love 'Design Evaluation'	1978		Design	354	vis com theory, vis com methodology, criticism, evaluation, ICOGRADA Congress, case study
Burton, R B; Brown, J S	An Investigation Of Computer Coaching For Informal Learning Activities	1979		Int. J. Man-Machine Studies	11	vis com theory, methodology, computer aided instruction, informal learning, computer coaching
Cataldo, E, et al.	Card Sorting As A Technique For Survey Interviewing	1970		Public Opinion Quarterly	34	methodology, survey research, Q-technique
Caudill, W; et al	Product Evaluation By Jury, In ARCHITECTURE BY TEAM					enviromental methodology, research, postdesign evaluation, quality quotient
Champness, B G; deAlberdi, M	Measuring Subjective Reactions To Teletext Page Design	1981 September	Alternae Media Center			vis com theory, methodology, evaluation, typography, computer graphics, teletext
Cheek, N H	People At The Zoo	1973 June		Animal Kingdom		enviromental methodology, zoo, demography, attitude/behavior survey

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Coates, D	Measuring Product Semantics With A Computer	1988		Innovation	7 (4)	vis com/product methodology, semantic differential, computer aided problem solving
Cohen, M; Winkel, G; et al	Oreintation In A Museum—An Experimental Visitor Study	1977		Curator	20 (2)	vis com methodology, museum exhibits, hypoempirical methodology, maps, wayfinding signage
Collins, B L; Pierman, B C	Establishing Ways To Decide Whether People Understand Symbols	1979 July/August		Industrial Design		vis com theory, methodology, evaluation, symbols
Cross, N; Nathenson, M	Design Methods And Learning Methods, In DESIGN:SCIENCE:METHOD	1981	Westbury			vis com methodology, psychology of learning, learning styles, serialist:holist, convergent:divergent thinking, creativity,
D'Angelo. E	The Teaching Of Critical Thinking	1971	B R Gruner			theory, methodology, criticism, critical thinking
)avis, R C; Smith, 1J	Determinants Of Feeling Tone In Type Faces	1933		Journal Of Applied Psychology	17	vis com theory, hypoempirical methodology, typography, semantics, correlational procedures, congeniality study
)awson, J	Measures Of Aesthetic Sensitivity As Predicators To Performance In The Visual Arts	1980		Information Design Journal	1	vis com theory, experimental aesthetics, hypoempirical methodology, line drawings, semantics, correlational procedures,

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Delbecq, A L; Van De Ven, A	Nominal Versus Interacting Group Processes For Committee Decision-Making Effectiveness	1971 June		Academy Of Management Journal		methodology, group dynamics, decision-making
Dilnot, C	Transcending Science And 'Anti-Science' In The Philosophy Of Design Method, In DESIGN:SCIENCE:METHOD	1981	Westbury			theory, methodology, philosophy, criticism, subjectivity:objectivity
Doblin, J	A Proposed Theory Of Design					theory, hypoempirical methodology, USA theory, semantic differential, denotation:connotation
Doblin, J	How Designers Should Use Computers			Design Journal, STA	1 (1)	theory, methodology, computer aided discovery, intuitive vs. methodological, play, conceptual maps, determinism:probabilism,
Dougherty, P H	Researcher As Agency Therapist	Tuesday, October 30, 1984		New York Times		methodology, advertising research, creativity
)reyfuss, H	Joe And Josephine, In DESIGNING FOR PEOPLE					methodology, human factors research, ergonomics
)reyfuss, H	The Importance Of Testing, In DESIGNING FOR PEOPLE					methodology, evaluation, human factors, mockup evaluation

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Fechter, J	The Key To This Factor Is Human			The Residential Roundup		methodology, human factors
Friedman, A; Zimring, C; Zube, E	Environmental Design Evaluation: Epilogue, In ENVIRONMENTAL DESIGN EVALUATION	1978	Plenum Press			environmental methodology, evaluation, surveys, interviews, reliability, obstrusive measures, nonobtrusive measures, simulation,
Frith, U	Reading By Eye And Writing By Ear, In PROCESSING OF VISIBLE LANGUAGE	1979	Plenum Press			visible language, verbal-visual translation, hypoempirical methodology, language reception, language production
Gagne, R M; Wager, W; Rojas, A	Planning And Authoring Computer-Assisted Instruction Lessons, In INSTRUCTIONAL SOFTWARE: PRINCIPLES AND	1984	Wadsworth			computer-aided instruction, methodology, learning theory
Getzels, J W; Czikszentmihalyi, M C	Aesthetic Opinion: An Empirical Study	1969 Spring		Public Opinion Quarterly	33 (1)	vis com theory, hypoempirical methodology, experimental aesthetics, aesthetic evaluation, expert:nonexpert, correlational
Graham, J	Getting The Best From Your Creative Staff	1979 October		Industrial Design		creativity theory, methodology, idea development, deadlines
Green, P E; Wind, Y	New Way To Measure Consumers' Judgments	1975 July-August		Harvard Business Review		vis com/product theory, methodology, survey research, conjoint measures, perceptual maps, cluster analysis, case study

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Guilford, J P; Holley, J W	A Factorial Approach To The Analysis Of Variances In Esthetic Judgments	1949		Journal Of Experimental Psychology	39	vis com theory, hypoempirical methodology, experimental aesthetics, Q-technique, correlational procedures, factor analysis
Hardiman, G W; Zernich, T	Some Considerations For The Measurement Of Preference In The Visual Arts			Rev. Of Res. In Vis Arts Ed.	73 (4)	theory, hypoempirical methodology,experimental aesthetics
Hewes, J J	Combing The Electronic Archives	1985 May		MacWorld		methodology, research, online database, online search strategies
Hollie, P	What's New In Market Research	Sunday, June 15, 1986		New York Times		vis com theory, methodology, market research, survey, polls
How A Lump Of Rock...	How A Lump Of Rock Failed To Make Its Point	1978		Design	354	methodology, mockup evaluation, case study, museum exhibit design, Screven
How To Aim Accurately...	How To Aim Accurately At The Minds Of Child Readers	1978		Design	354	methodology, mockup evaluation, case study, publication evaluation, illustration, Sesame Street magazine, Girven Kirk
Hucek, A; Whitney, P	Annotated Bibliography			Icographic		methodology, research, evaluation

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Jacob, H	Lecture Charts					education, methodology, visual lectures, lecture charts
Jay, A	Rate Yourself As A Client, In THE CLIENT—CONSULTANT HANDBOOK	1979	Gulf Publishing			methodology, client-consultant relationship, professionalism
Kirk — add.						
Koten, J	Car Makers Use 'Image' Map As Tool To Position Products	Thursday, March 22, 1984		Wall Street Journal		theory, methodology, market research, automobile, perceptual maps
Krampen, M	Design As Creative Problem Solving					vis com methodology, creativity theory, problem solving, protocol analysis, expert:novice
Krampen, M	Icons Of The Road	1983		Semiotica	43 (1/2)	vis com theory, information theory, hypoempirical methodology, semiotics, perceptual psychology, symbols, icons, road sign systems,
Leff, H S	Construing The Physical Environment: Differences Between Environmental Professionals And Lay Persons,	1973	Dowden, Hutch, & Ross			environmental theory, environmental perception, hypoempirical methodology, exper:nonexpert
Lewin, T	Casting An Antrhopological Eye On American Consumers	1985 February		New York Times	Sunday, May 11, 1986	theory, methodology, market research, anthropology, direct observation

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume Issue	Topic (Key Words)
Lewis, E; et al	An Empirical Comparison Of The Effectiveness Of Typeset, Typewritten, And Dot Matrix Business Documents: Summary &	1984 May	Compugraphi c Corp.			vis com hypoempirical methodology, research, typography, legibility
Magid, L J	PC's New Role: Meeting Facilitator	Monday, June 15, 1987		Los Angeles Times		computer technology, methodology, group dynamics, meeting facilitation
Mann, J	Assessing Effectiveness Before A Design Is Produced			Industrial Design		methodology, evaluation, marketing effectiveness
Marketing...	Marketing: The New Priority	November 21, 1983		Business Week		marketing, market research, consumers, new product development, methodology, focus groups
Maslow, A H; Mintz, N L	Effects Of Esthetic Surroundings: 1. Initial Effects Of Three Esthetic Conditions Upon Perceiving 'Energy' And 'Well-Being' In Faces	1956		Journal Of Psychology	41	environmental theory, hypoempirical methodology, environmental psychology, near environments
lauro, C	Advances In Application Of User Data To Product Design	1977 July/August		Industrial Design	24	product design methodology, human factors research, data bases, consumer product evaluation, product safety
lauro, C	How And Where To Find Research Literature	1079 March/April		Industrial Design		methodology, human factors research, on line data bases, literature search

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume Issue	Topic (Key Words)
McGrath, D J	24 Hours Of Crime In The City / Typical Day: Minor Thefts, 23 Assaults, No Killings	1979 March/April		Minneapolis Star And Tribune		methodology, research, direct observation, reportage, urban crime
McLaughlin, G H	Comparing Style Of Presenting Technical Information	1966		Ergonomics	9 (3)	hypoempirical methodology, human factors research, evaluation, document design, typographic and graphic design
O'Brien, D	Innovation Is..., Proceedings Of A Workshop Held During The Design Policy Conference, Royal College Of Art	1982 August	Applied Creativity			methodology, information generators, open ended questions, design policy conference, design innovation, group dynamics
Overview Of Creative Problem...	An Overview Of 'Creative Problem Solving', North Hennepin Community College					creativity theory, creativity methodology, critical thinking
Patton, P	The Shape Of Ford's Success	May 24, 1987		New York Times Magazine		product theory, biography: Jack Telnack, Ford Motor Company, aero car, research and development, methodology, verbal goals,
Rapaport, A	An Approach To The Study Of Environmental Quality, In PROCEEEDINGS, FIRST ANNUAL ENVIRONMENTAL	1970	Halsted/Wiley			environmental methodology, research, environmental perception, quality
Reeves, T C; Lent, R M	Levels Of Evaluation For Computer-Based Instruction	1984	Wadsworth			vis com methodology, learning theory, evaluation, computer aided instruction

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Riche, M F	Who Says Yes?	1987 February		American Demographics		methodology, polls, surveys, demographym market research
Rosenfield, S; et al	A Naturalistic Study Of Visitors At An Interactive Mini-Zoo	1982		Curator 25 (3)	25 (3)	environmental methodology, mini-zoos, research, education, learning, surveys, direct observation
Rubenstein, M	Twelve Pattems For Problem Solving, From PATTERNS OF PROBLEM SOLVING	1975	Prentice Hall			creativity methodology
Safan-Gerard, D	How To Unblock	1978 January		Psychology Today		creativity theory, methodology
Schiller, G	An Experimental Study Of The Appropriateness Of Color And Type In Advertising	1935		Journal Of Applied Pscyhology	19	hypoempirical methodology, correlational procedures, typography, color
creven, C G Scriven,	Exhibit Evaluation—A Goal-Referenced Approach How about add	1976		Curator	19 (4)	methodology, exhibit design, goal-referenced evaluation, visitor learning in museums
creven, C G	The Effectiveness Of Guidance Devices On Visitor Learning	1975		Curator	18 (3)	visitor learning in museums, exhibit guidance devices, behavior studies, hypoempirical methodology

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Serrell, B	Looking At Zoo And Aquarium Visitors	1980 November/December		Museum News		enviromental methodology, hypoempirical methodology, zoo/aquarium research, demography, visitor behavior, direct observation,
Serrell, B	Survey Of Visitor Attitude And Awareness At An Aquarium	1977		Curator	20 (1)	enviromental methodology, aquarium, demography, attitude survey
Serrell, B	The Evolution Of Educational Graphics In Zoos	1988 July		Environment And Behavior	20 (4)	environmental methodology, wayfinding, orientation, zoos, history, visitor behavior, signage, evaluation
Shontz, W D; Trumm, G A; Williams, L G	Color Coding For Information Location	1971		Human Factors	13 (3)	color theory, interface displays, perceptual psychology, color coding, hypoempirical methodology, aeronautical maps, cartography
Turner, S D	Using Sentence Completions: A Way Into Worldview?	1982		Area	14 (3)	methodology, sentence completion, open ended questions, hierarchical cluster analysis, geographic lifeworlds
rban, G L; auser, J R	Consumer Measurement—A Review, In DESIGN AND MARKETING OF NEW PRODUCTS		Prentice-Hall			methodology, market research, literature search, consumer measurement, surveys, semantic differentials, Likert scales
ban, G L; auser, J R	Perceptual Mapping: Consumers' Perceptions Of New And Existing Products, In DESIGN AND MARKETING OF NEW		Prentice-Hall			methodology, perceptual maps, market research, product development

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Walizer, M H; Wienir, P L	The Never-Ending Process, In RESEARCH METHODS AND ANLYSIS: SEARCHING FOR RELATIONSHIPS	1978	Harper & Row			methodology, theory, anatomical parts, research methods
Walonick, D	Vital Statistics: For Whom And Why?	1986 April		Computer User		theory, methodology, statistics primer, forecasting
Whitney, P	Four Real Cases Of Design Evaluation	1979 January/Febr uary		Industrial Design		vis com theory, methodology, evaluation, flow diagram, case study, mockup:postdesign
Whyte, W H	Time-Lapse Filming, In SOCIAL LIFE OF SMALL URBAN SPACES					methodology, time-lapse photography, direct observation, public urban spaces
Williams, F	Factor Analysis, In REASONING WITH STATISITICS	1979				methodology, correlational procedures, factor analysis
inkel, G H	The Challenge Of The Case Study For The Environmental Design Researcher		Center For Human Environment s, CUNY			environmental theory, methodology, research, case study approach
ıchrisson, ?	Questions Of Legibility	1966		DotZero	1	vis com theory, hypoempirical methodology, typography, legibility, congeniality

Author	Title	Date	Publisher (If Book)	Source (If Periodical)	Volume / Issue	Topic (Key Words)
Zeisel, J	Observing Environmental Behavior, In INQUIRY BY DESIGN					environmental methodology, research, behavior, direct observation, sociocultural patterns, recording devices
Zeisel, J	Observing Physical Traces, In INQUIRY BY DESIGN					environmental methodology, research, physical traces, direct observation, sociocultural patterns
Zeisel, J	Standardized Questionnaires, In INQUIRY BY DESIGN					environmental methodology, research, questionnaires, surveys

Index

Introduction

Design Theories and Methods Index

As one becomes interested in a subject there is almost always a desire to read more about it. This Design Theories and Methods Index is by no means a complete record of all the works and sources available. It indicates the substance and range of readings upon which I have begun to form ideas. The Index is intended to serve as an information resource for those who wish to pursue the study of design theory and methodology.

The Design Theories and Methods Index has been created to bring together source information from a variety of disciplines in order to make a substantial contribution to the comprehension and practice of the creative process in the field of visual communication. The categories included in this Index are: **Author; Book; Article; Publication; Publisher; Volume; Issue; Date; Discipline; Subject; Topic and Locator.**

The editor of the Index has had to exercise constraint because of limited space in the assignment of the supplementary keyword phrases that are used under the **Subject** categories. Consequently, the user must often look under the **Topic** category before finding the intended field of inquiry.

The user may not find the entry at the first place searched. Therefore, a computerized database retrieval allows the user to look under any one of the main categories believed appropriate.

In the Index, authors appear alphabetically. If no author is known, the title or subject of the entry is listed under the **Author** column.

In some cases, the title of a book is followed by the chapter or chapters of interest which are italicized. If the entry is a book, the publisher and date of publication will appear under the appropriate category.

If the entry search is for an article, the complete article name can be found under the heading **Article**. Also found under this category is any unpublished work. The publication name is listed under the **Publication** category which also includes journals. Journal entries include issue and volume numbers, as well as the month and year of publication for easier access and location.

Unpublished works can be obtained from consulting the **Locator** column at the end of the Index. All codes for locators are listed at the back of this volume in the section entitled **List of Locators** which includes complete names and addresses where the information can be obtained.

Subject entries are broader and often not so sharply defined, whereas topic entries are as focused and as specific as possible.

The criteria for **Discipline** entries for inclusion involves considerations of whether the entry falls into the domain of several disciplines rather than one. This is why frequently several disciplines will be listed under this heading.

Contributions by readers from non-standard sources are vital if coverage is to continue to be extensive. Copies of relevant articles or publications are welcomed and contributors will be appropriately acknowledged in future issues of the Index.

Carla Tedeschi

List of Contributors

This section is to give proper acknowledgement to those who have made considerable contributions to the Index in addition to the editor. Without their help and altruistic aid the Design Theories and Methods Index would not have been possible.

Deborah A. Beardslee
Deborah Beardslee possesses a Bachelor of Fine Arts Degree in Graphic Design and a Masters degree in Visual Communications.

In addition to teaching full time at Rochester Institute of Technology, she is also actively involved in research related to visual communication, design methodology, design education, and interdisciplinary relationships. She currently serves as a member of the board of the Graphic Design Education Association.

Pamela Blum
Biography to come.

Kevin Byrne
Kevin Byrne holds a bachelor's degree in fine arts and graduate degrees each in graphic design and geography. In addition to teaching fulltime at the Minneapolis College of Art and Design, Byrne writes occasionally about visual communications design for several trade and scholarly publications. His interests include communication theory, design methodology, formulative evaluation of design prototypes, and Postscript-based cartography. He currently serves on board of the American Center for Design and is publications editor for the Graphic Design Education Association.

Meredith Davis
Biography to come.

R. **Roger** Remington
R. Roger Remington is Professor of Graphic Design at Rochester Institute of Technology. A graduate of RIT and the University of Wisconsin, he is also President of Royce Productions, a Rochester-based marketing/communications firm.

His career has included being a practicing graphic designer, a consultant, a printmaker, an administrator, a teacher, a historian, a writer and most recently an advocate for the preservation and interpretation of the history of Graphic Design. He has been co-producer of two major symposia on the history of Graphic Design at RIT, of which the first, conducted in 1983, is generally perceived as an historical event in itself. In early 1989 the MIT Press began distribution of a new book, Nine Pioneers in American Graphic Design, which was written with colleague Barbara Hodik. He is developing the "Graphic Design Archive", a desk-top electronic archive on the history of Graphic Design. This is being accomplished by joining the capacious storage of the laserdisc with the interactive capabilities of the computer. Remington has received continuing grants from the National Endowment for the Arts, the New York State Council on the Arts, the Graham Foundation, RIT and Apple Computer Inc.

He is an active participant in educational enhancement programs, serving as Vice-President of the Graphic Design Education Association. In this capacity he was co-chair of the 1989 Annual National Symposium of GDEA. He is a member of the Board of Directors of GDEA and was a founding member of the Board of Directors of GDEA and was a founding member of the AIGA/Rochester chapter.

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James E. Booth Building
Post Office Box 9887
Rochester, New York 14623-0887

*** Steven Skaggs
Fine Arts Department
University of Louisville
Louisville, Kentucky 40292

Skagg's Reading List

BIBLIDGRAPHY CARD NUMBER 33

AUTHOR John Deely

TITLE Introducing Semiotic

PUBLISHER Indiana University Press

CITY Bloomington, Indiana

DATE 1982

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BIBLIDGRAPHY CARD NUMBER 34

AUTHOR Julian Jaynes

TITLE The Origin of Consciousness in the Breakdown of the Bicameral Mind

PUBLISHER Houghton Mifflin

CITY Boston

DATE 1976

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BIBLIDGRAPHY CARD NUMBER 35

AUTHOR Clifford Geertz

TITLE The Interpretation of Cultures

PUBLISHER Basic Books

CITY New York

DATE 1973

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BIBLIDGRAPHY CARD NUMBER 36

AUTHOR

TITLE

PUBLISHER

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BIBLIDGRAPHY CARD NUMBER 37

AUTHOR SKAGGS, STEVEN

TITLE WAYS OF KNOWING: FOUR PROCESSES OF RECEIVING MESSAGES

PUBLISHER — UNPUBLISHED MS —

CITY

DATE 1991

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BIBLIDGRAPHY CARD NUMBER 38

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BIBLIDGRAPHY CARD NUMBER 39

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BIBLIDGRAPHY CARD NUMBER 40

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PUBLISHER

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BIBLIOGRAPHY CARD NUMBER 37

AUTHOR John Hell

TITLE Perception and Cognition

PUBLISHER University of California Press

CITY Berkekey, California

DATE 1983

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 38

AUTHOR Charles S. Harris, editor

TITLE Visual Coding and Adaptability

PUBLISHER Lawrence Erlbaum Associates

CITY Hillsdale, New Jersey

DATE 1980

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 39

AUTHOR John G. Seamon

TITLE Memory and Cognition

PUBLISHER Oxford University Press

CITY Oxford

DATE 1980

ADDITIONAL INFO:

Prev Next Sort Find Sort

BIBLIOGRAPHY CARD NUMBER 40

AUTHOR Douglas Vickers

TITLE Decision Processes in Visual Perception

PUBLISHER Academic Press

CITY New York

DATE 1979

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 41

AUTHOR Vicki Bruce and Patrick Green

TITLE Visual Perception

PUBLISHER Lawrence Erlbaum and Associates

CITY Hillsdale, New Jersey

DATE 1985

ADDITIONAL INFO:

Prev Next Sort Find Sort

BIBLIOGRAPHY CARD NUMBER 42

AUTHOR Mary Henle, editor

TITLE Vision and Artifact

PUBLISHER Springer

CITY New York

DATE 1976

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 43

AUTHOR Arthur Asa Berger

TITLE Signs in Contemporary Culture

PUBLISHER Longman

CITY New York

DATE 1984

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 32

AUTHOR Umberto Eco

TITLE A Theory of Semiotics

PUBLISHER Indiana University Press

CITY Bloomington, Indiana

DATE 1976

ADDITIONAL INFO:

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BIBLIDGRAPHY CARD NUMBER 41

AUTHOR LASSWELL, HAROLD D.

TITLE PROPOGANDA TECHNIQUES IN WWI

PUBLISHER M I T

CITY Cambridge

DATE 1971 (reprint of 1927 ed.)

ADDITIONAL INFO:

Prev Next Sort Find Sort

BIBLIDGRAPHY CARD NUMBER 42

AUTHOR ARNHEIM

TITLE Art & Visual Perception

PUBLISHER U of Cal Press

CITY Berkeley

DATE 1965

ADDITIONAL INFO:

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BIBLIDGRAPHY CARD NUMBER 43

AUTHOR GOMBRICH, E. H.

TITLE MEDITATIONS ON A HOBBY HORSE

PUBLISHER Phaidon

CITY London

DATE 1963

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BIBLIDGRAPHY CARD NUMBER 44

AUTHOR KRAMPEN, MARTIN

TITLE SIGNS & SYMBOLS IN GRAPHIC COMMUNICAT. IN DESIGN ~~ISSUES~~ QUARTERLY 62

PUBLISHER WALKER ART CENTER

CITY MINNEAPOLIS

DATE 1965

ADDITIONAL INFO:

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BIBLIDGRAPHY CARD NUMBER 45

AUTHOR EHSES, HANNO and ELLEN LUPTON

TITLE DESIGN PAPERS 5: Rhetorical Handbook

PUBLISHER

CITY

DATE 1987

ADDITIONAL INFO:

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BIBLIDGRAPHY CARD NUMBER 46

AUTHOR JUNG CARL G.

TITLE MAN & HIS SYMBOLS

PUBLISHER DELL

CITY New York

DATE 1968

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BIBLIDGRAPHY CARD NUMBER 47

AUTHOR BARTHES, ROLAND

TITLE Elements of Semiology

PUBLISHER CAPE

CITY LONDON

DATE 1967

ADDITIONAL INFO:

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BIBLIDGRAPHY CARD NUMBER 48

AUTHOR MORRIS, CHARLES

TITLE ~~ON~~ SIGNS

PUBLISHER

CITY

DATE

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Spoehr and Lehmkuhle BIBLIOGRAPHY CARD NUMBER 1

AUTHOR Katherine T. Spoehr and Stephen W. Lehmkuhle

TITLE Visual Information Processing

PUBLISHER W.H. Freeman and Company

CITY San Francisco

DATE 1982

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Peirce BIBLIOGRAPHY CARD NUMBER 2

AUTHOR Charles Sanders Peirce

TITLE Writings of Charles S. Peirce: A Chronological Edition

PUBLISHER Indiana University Press

CITY Bloomington

DATE 1986-

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Peirce BIBLIOGRAPHY CARD NUMBER 3

AUTHOR Charles Sanders Peirce

TITLE Collected Papers of Charles Sanders Peirce

PUBLISHER Ed: Charles Hartshorne, Paul Weiss, Arthur Burks /Harvard

CITY Cambridge

DATE 1931-1958

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 4

AUTHOR David Perkins and Barbara Leonder, editors

TITLE The Arts and Cognition

PUBLISHER The Johns Hopkins University Press

CITY Baltimore

DATE 1977

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BIBLIOGRAPHY CARD NUMBER 5

AUTHOR John Brown, editor
Recall and Recognition

TITLE

PUBLISHER John Wiley and Sons

CITY London

DATE 1976

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BIBLIOGRAPHY CARD NUMBER 6

AUTHOR Marr, David

TITLE Vision

PUBLISHER W. H. Freeman

CITY San Francisco

DATE 1982

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BIBLIOGRAPHY CARD NUMBER 7

AUTHOR Waldrop, M. Mitchell

TITLE Man-Made Minds - The Promise of Artificial Intelligence

PUBLISHER Walker and Company

CITY None Listed

DATE 1987

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 8

AUTHOR Lev S. Vygotsky

TITLE The Psychology of Art

PUBLISHER The M. I. T. Press

CITY Cambridge, Massachusetts

DATE English Translation, 1971

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 9

AUTHOR Victor Margolin, editor

TITLE Design Discourse

PUBLISHER University of Chicago Press

CITY Chicago, Illinois

DATE 1989

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BIBLIOGRAPHY CARD NUMBER 10

AUTHOR Edward R. Tufte

TITLE Envisioning Information

PUBLISHER Graphics Press

CITY Cheshire, Connecticut

DATE 1990

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BIBLIOGRAPHY CARD NUMBER 11

AUTHOR Marshall Blonsky, editor

TITLE On Signs

PUBLISHER The Johns Hopkins University Press

CITY Baltimore, Maryland

DATE 1985

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BIBLIOGRAPHY CARD NUMBER 12

AUTHOR D. S. Clarke

TITLE Principles of Semiotic

PUBLISHER Routledge and Kegan Paul

CITY London

DATE 1987

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BIBLIOGRAPHY CARD NUMBER 13

AUTHOR Edmund Leach

TITLE Culture and Communication

PUBLISHER Cambridge University Press

CITY Cambridge and London

DATE 1976

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BIBLIOGRAPHY CARD NUMBER 14

AUTHOR Douglas R. Hofstadter

TITLE Metamagical Themas

PUBLISHER Bantam Books

CITY New York

DATE 1986

ADDITIONAL INFO:

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BIBLIOGRAPHY CARD NUMBER 15

AUTHOR James Gleick

TITLE Chaos

PUBLISHER Viking

CITY New York

DATE 1987

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BIBLIOGRAPHY CARD NUMBER 16

AUTHOR Michael Cole and Barbara means

TITLE Comparative Studies of How People Think

PUBLISHER Harvard University Press

CITY Cambridge, Massachusetts

DATE 1981

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BIBLIOGRAPHY CARD NUMBER 57

AUTHOR Peirce's Theory of Signs as Foundation for Pragmatism

TITLE John J. Fitzgerald

PUBLISHER Mouton & Co.

CITY Paris

DATE 1966

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BIBLIOGRAPHY CARD NUMBER 58

AUTHOR Rudolf Arnheim

TITLE Visual thinking

PUBLISHER University of California Press

CITY Berkeley

DATE 1969

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Feibleman BIBLIOGRAPHY CARD NUMBER 59

AUTHOR James K. Feibleman

TITLE An Introduction to the Philosophy of Charles S. Peirce

PUBLISHER The M.I.T. Press

CITY Cambridge, MA

DATE 1970

ADDITIONAL INFO

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BIBLIOGRAPHY CARD NUMBER 60

AUTHOR Roger M. Downs and David Stea (editors)

TITLE Image and Environment: Cognitive Mapping and Spatial Behavior

PUBLISHER Aldine Publishing Co

CITY Chicago

DATE 1973

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BIBLIOGRAPHY CARD NUMBER 61

AUTHOR Charles S. Hardwick

TITLE Semiotic and Significs: The Correspondence Between Charles S. Peirce

PUBLISHER and Victoria Lady Welby Indiana University Press

CITY Bloomington

DATE 1977

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Sebeok BIBLIOGRAPHY CARD NUMBER 62

AUTHOR Thomas A. Sebeok

TITLE The Sign and Its masters

PUBLISHER University of Texas Press

CITY Austin, TX

DATE 1979

ADDITIONAL INFO:

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Saussure BIBLIOGRAPHY CARD NUMBER 63

AUTHOR Ferdinand de Saussure

TITLE Course in General Linguistics

PUBLISHER edited by Charles Bally and Albert Sechehaye Trans: Roy Harris

CITY Open Court LaSalle, Illinois

DATE 1983

ADDITIONAL INFO:
Originally Published as
Cours de linguistique generale
In 1916 by Payot In Paris

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BIBLIOGRAPHY CARD NUMBER 16

AUTHOR John A. J. Gowlett

TITLE Ascent To Civilization: The Archeology of Early Man

PUBLISHER Alfred A. Knopf, Inc.

CITY New York

DATE 1984

ADDITIONAL INFO:

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Skagg's Unpublished Discussion Paper: Ways of Knowing

WAYS OF KNOWING:
FOUR PROCESSES OF RECEIVING MESSAGES
A Discussion Paper

Basic communication theory tells us that the flow of messages goes like this:

Sender > Signal/Channel > Receiver

A designer's clients can be said to be the sender, the printed piece becomes the signal, the audience receives the message. In this working paper, I want to take a closer look at the reception of the message. In particular, I want to offer a model of the process of reception. A model that is sympathetic to a designer's needs and intuitions. A model that allows for a more comprehensive conception of the act of decoding than that which is commonly held in our profession, yet a model that avoids unnecessarily fine distinctions.

What can we say about reception? That it is partially a physiological and perceptual process. That it is also a process that turns basic percepts over to a higher level of processing known as cognition. That cognition involves memory, experience, associations. We know that branches of psychology study the ways in which perception and cognition operate and that a great deal remains to be explained.

From another perspective, we are aware that a branch of linguistics, known as semiotics, takes the interaction of signal and receiver to be 'sign'. We understand that this study of signs takes a less empirical route than do the psycho-sciences and that semiotics has yielded both insight and confusion about the nature of signs.

Taken together, psychology and semiotics offer a great deal of information about reception. But the the semiologist and the psychologist speak different languages when they discuss these issues. Their jargon, disputed even within their own camps, is certainly a hinderance to any attempt to create an overview that encompasses both spheres. Certainly, the graphic designer has a desire to understand what happens when his work is absorbed by the receiver. But is it possible to steer clear of the snarls posed by the brambles of semiotics, the thicket of psychology? Is it possible to arrive at a conception that seems both clear and forthright, complementing general theories while giving particular insight to

the designer?

Designers rarely think that the reading of their signals involves anything more than simply 'getting the message' - as if 'getting it' was a single activity. This atomistic view of reception sometimes leads to rather byzantine and heated discussions about the value of a given solution. The dispute between Joe Duffy and Tibor Kalman played out in pages of CA magazine* is a case in point. Duffy's design firm had devised a new look for Classico tomato sauce. It featured a jar that resembled the kind used in home preserving. The label employed references to an earlier, simpler time. Kalman felt that such ploys were deceptions - that, in fact, the tomato sauce was prepared in a large factory, that the ingredients were no more fresh than other similar products. The Classico label, to Kalman, was a lie.

*CA. August 1990

Throughout this whole conversation, the 'meaning' and the 'symbolism' of the Classico packaging were discussed as if they existed physically upon the label along with the list of ingredients. By taking the act of the audience's reception to be a homogenous, unified process, Kalman and Duffy missed the chance for a more insightful and precise discussion. The ability to articulate their views, perhaps that viewpoint itself, was severely constrained and the discussion became more heated as their frustration increased.

The discussion between Kalman and Duffy was noteworthy only because it serves to illustrate that even the most penetrating, stimulating discourse about design breaks down into a haze of blurred, ambiguous concepts. Their debate is repeated a hundred-fold every day in design studios and classrooms. The problem is not, as some have suggested* that designers are non-verbal creatures who need grammar transplants. The problem is that very little serious work has been done by graphic designers to understand the process of visual communication. This need is especially acute when it comes to understanding the process of reception.

*See for instance: "Design Speak vs. Communicating For Success". RitaSue Siegel, *CA.* June 1990

There is a profound contrast between the graphic designer's* notion of reception (as an unsegmented lump) and that of the psychologist's or semiologist's. From their positions, reception certainly is not a single, monolithic event. If reception were a pie, psychologists in particular seem to delight in seeing just how finely that pie can be divided. First, there is perception which itself is split into peripheral neurological systems (such as the action of rod and cone cells in our eyes) and into basic 'executive' functions such as feature detection or attention. Then, there is cognition which at some fuzzy point takes over from perception and which involves memory, associations, and the accumulation of knowledge. Finally, there is the formation and operation of the personality along with the behavior that may be expected to ensue.

*Îndeed, all the arts could probably be included here

Meanwhile, semiotics often pretends that signs exist without the need for such inconveniences as sense organs, brains, people.

Semiotics tries to describe of the nature of signs themselves. Reception to the semiologist is simply the act of joining a 'signifier' to a 'signified'. It is that very wedding of signifier/signified that constitutes the sign. For to the semiologist, signs are not external 'things' but are the union of percept and concept. The semiotician is less interested in slicing the pie of reception itself; is more interested in categorizing all various flavors of pie that exist. The psychologist divides, the semiotician multiplies.

Graphic design theory, if such can be said to exist, must rest upon the twin supports of semiotics and psychology. It must interconnect and complement them, extend and enhance them. Yet, can a designer find it worthwhile to master these areas of inquiry without re-interpretation? I think not. I believe graphic designers need a paradigm that is respectful of the general theories yet one that is more immediately relevant to a designer's problems - and to a designer's instincts.

So, here is our problem: how might graphic designers deal with this problem of reception - how do we slice the pie? With semiotics and psychology as backdrop, what concepts can we pull forward that have utility for us? These are big questions, but they are important questions and a discussion of the issues seems overdue. The model presented below is intended to form a departure point for that discussion.

I suggest that designers need slice the pie into quarters. Designers need to consider four processes of reception in order to adequately function as encoders of visual messages. Slicing the pie into more pieces will not provide significantly more insight into the graphic design process - fewer pieces would inadequately account for the responses to visual signals. Here are the four processes - the four ways of knowing - that I propose graphic designers consider:

Reception - The Four Processes
Formulation
Classification
Extraction
Accommodation

FORMULATION

Formulation consists of all the perceptual/cognitive events that result in a person seeing a particular structure to a visual surface. The process is called formulation, the resulting received structure I call the surface order. Formulation allows us to see unified clusters or groups of visual 'stuff', even before that 'stuff' is identified, 'understood'. It is formulation that attracted the interest of the gestalt psychologists. The principles that they isolated - proximity, similarity, closure, etc. - seem to guide or affect formulation as a process, probably reflecting our need for

information to be packaged in the most efficient possible way . Through formulation, there is a sense of proportion, of relatedness between items, a sense of units and sub-units. A structure is bestowed upon raw visual data and that structure - that surface order - is offered to higher cognitive levels for further processing.

Imagine seeing the title page of a book. Before you are ever aware of the title, or even that the page is a title page, the light pattern (Saussure, from the semiotic perspective would say sound-pattern or signifier) that constitutes the visual surface is handled by rods, cones, and neurons. Along the line it is packaged into distinct clusters of information. These very first steps have happened so quickly and at such an early stage of cognition, that we are not aware that the process has occurred at all. The gestalt principles that govern the process seem to be so natural that they are likely to be ascribed to the visual elements themselves, not taken to be a perceptual/cognitive function. Yet it is at this very early stage of perception that much of the information that will be read and transformed into meaning has already undergone a series of perceptual transformations preparing it for higher cognitive levels.

Formulation is virtually instantaneous. It also seems to be 'transparent', in the sense that we are not aware that we are doing it. Surface order seems to flash upon our consciousness as a given. So it would seem that it is a sub-conscious activity. Yet, despite being beneath the threshold of consciousness, there is no function more important to the practice of graphic design than anticipating formulation when encoding a surface. Because not only is it the form, the structure, the surface order that carries the message forward toward consciousness - it is the emotional response to the surface order that renders 'expression'.

Does formulation differ substantially between people or between cultures? I would like to know more about this issue. Intuitively, one would expect a great deal of diversity between cultures at higher, conscious, levels of cognition. But such a basic sensory function as formulation might be a 'wired-in' program, basically universal (though affected by such 'abnormalities' as nearsightedness, etc). A given typographic arrangement may be variably interpreted as elegant or rude, old-fashioned or contemporary, depending on the life histories of the various perceivers, but the text will be seen as consisting of the same clusters of words. Although you may have a different sense than your neighbor of the "personality" of a typeface, if you and your neighbor are literate in English and share the same degree of visual acuity, there should be little disagreement about its legibility. Legibility is a surface order issue.

Many of the misunderstandings that occur in the discussion of design solutions arise through a failure by the parties to clearly discriminate between levels of decoding and the emotional

responses that each level of decoding produces. Formulation is a structuring process. The result of that process - surface order - leads to discussions about formal relationships, proportion, unity, legibility, complexity, and the ability to decode information efficiently. While surface order inherently triggers an emotional response, formulation on the part of the perceiver is not, in itself, a function of emotion but innate, subconscious, decision-making regarding spatial organization.

Formulation is...

Perceptual, Gestalt-linked
Instantaneous
Subliminal and Subconcious
Innate, we are all 'wired' from birth to formulate
Invariable across cultures (virtually)

Classification

Classification is a process by which the surface order acquires a potential, or provisional, identity. It involves the placement of the new surface order into a 'slot', a category, based upon the receiver's previous experience. Do not be confused by my use of the term 'classification'. I know that many things are classified; a poem may be classified as sad or short or abstract. The kind of classification I'm referring to here is strictly based upon the characteristics of the visual arrangement known as surface order. It's function is to link the new surface order with broad classes of things you've seen before.

As an example, let's return to the title page. We have seen how the visual surface is formulated to produce a surface order. When that surface order is delivered to higher levels of cognition, it is compared to previously perceived arrangements. Some of these remembered surface orders may have turned out to have been title pages for books. If the new surface order bears a sufficiently close relationship - a family resemblance - to these prior experiences, then an expectation is created that this new thing is also a title page.*

Classification takes place because of our cognitive ability to associate new perceptions with previous ones. There are many kinds of associations that occur at all stages of perception and cognition, but classification is special. I believe that classification - the use of particular schemas or templates for incoming surface orders - is a critical process for graphic designers to consider. There are three reasons why it is so crucial: 1) it's a subconcious process, 2) it's an implicit issue in most discussions of target audience, but seldom recognised as such, and 3) it provides a connection with the semiotic concept of semantic marker (this term will be explained shortly).

*Psychologists call these mental categories schemas, or templates. Perhaps the mind finds it efficient to group things into categories, much in the way gestalt principles manage to simplify a group of visual elements. There is a great deal to learn about the relevance of schemas for designers: this area would seem to me to be fertile for more investigation.

A largely subconscious process

Most of the time classification is a process that happens subconsciously. Classification prepares us for full interpretation of the messages in our environment, we do not need to be aware of the operation of the process itself. But it is possible to bring classification into our awareness and to make it a topic of discussion. One such instance is when we speak of 'style'. When an object is in the "Art Deco style", the surface order has been assigned to a class of surface orders that the perceiver has learned to call by the name "Art Deco". Style is important in art history, but not all surface classification is linked to such monumental cultural gateposts. For instance, if you are driving through a commercial strip, you are continuously monitoring the objects you see. Shop placards, street names, traffic signals and advertising posters all offer themselves for attention. The ability to quickly file objects into categories on the basis of surface characteristics makes it unnecessary to read irrelevant verbal messages or to decode all the objects in the perceptual field unless they agree, on the level of surface order, to the classification that you seek. So you are able to isolate all the "placard-like" signals, for example, before extracting the full information . And so one may say that something is in the "style" of a street sign.

An implicit issue

Perhaps because classification occurs at a subconscious level most of the time, it tends to a hidden factor in the planning of visual communication. While the marketing manager may be concerned that a proposed design won't 'reach' a given audience, the parties in the discussion have a difficult time pinpointing exactly what the problem is. How often one hears, "It simply looks wrong - it looks good, but wrong for this audience." The inability to be more articulate about what, precisely, is wrong and how it is wrong hampers efforts to reach a suitable conclusion.

A case of misclassification occurred when a fine Louisville designer was asked to design a label for a whiskey to be marketed in Mexico . The whiskey was aimed at an "upscale" market and it was important that the label denote elegance and sophistication. The resulting design was spare and understated. The distiller, the marketing team, the designer were sure they had a winner. But in market tests, the label performed disasterously. The reason? In the experience of the intended audience, the pricier products have tended to have quite complex labels; the more "cluttered" a design is, the more it is considered to be a reflection of quality. The clean, spare, restrained design was classified "cheap liquor" - precisely the reverse of the way the surface order would have been classified in the United States.

A connection with the concept of semantic marker

There is, in semiotics, the idea that units of meaning arrange themselves in relation to other units of meaning. For instance, 'red' is somehow positioned closer to 'hot' than it is to cold. Within this 'semantic field', this web of meanings and relatedness, there are certain stressed concepts that act as landmarks. These are known as semantic markers. It is intriguing to speculate that the schemas that result from classification could be analogous to semantic markers. To think of them as such, provides a connection between the psychological and the semiological traditions. It would seem that much further work could be done investigating this concept.

The schema is of central importance to graphic designers. It forms a foundation that can be manipulated in quite subtle ways. With slight variations, one can produce an objective rendering, an emulation, a parody, using the same schema as the base concept. Perhaps the schema is the fount of symbolism.

Cultural variation and classification

The story of the Mexican whiskey label suggests that classification is a process that is strongly linked to culture. This is not surprising since, to a far greater degree than formulation, classification makes use of a person's prior experiences and memories.

A case in point was relayed to me by Jack Kehoe, the former director of the University of Georgia Program Studies Abroad Program. Once, he and a colleague visited a small town in Italy. It was his friend's first trip abroad. Walking through the streets of the town, his friend noticed the abundance of posters pasted on the walls bordering the street. Each poster proclaimed an exhibition in large centered capital letters, "Mostra: Luigi Pellegrini", "Mostra: Alberto Rossi", "Mostra: Bernadetta Cosano".

The layout of these posters very much resembled those seen in ArtForum and other fine arts magazines familiar in the United States. The colleague remarked on the flourishing state of the arts in this small, provincial town. Only later, after a fuller reading, did it become clear that these were obituary notices. They were

exhibitions, but at funeral hames, not art galleries! The formal black borders and prominent names were very similar in composition to the gallery notices advertised in the United States. Their surface order was certainly remote from the discrete, almost hidden fine print of an American newspaper's obituary page.

There are other examples of the variability of surface classification between cultures. Spare compositions making use of grids have been popular in central Europe long before the "Swiss style" graphics of the mid 20th century. Centered, symmetrical typography making use of ornamentation have tended to be popular in Great Britain for centuries.

Even within a given culture, surface classification changes through time. "Russian Constructivist" is classified in a different way by Americans today than Americans in 1926. The names for styles often reflect this. The prefix "neo" in "neo-classic", for instance, indicates a style that paid homage to the classic period through emulating (but not copying) that earlier period's surface order. As soon as a particular classification becomes part of a culture's shared vocabulary, the style becomes linked with that place and time, becomes a schema of the then and there.

Surface classification is...

Based upon surface order only
Subconscious
Associative, therefore based on prior experiences
Related to semantic markers
Culturally variable

EXTRACTION

Classification gives us a potential, or provisional, identity about a visual surface. Extraction is the pulling out from that surface the full denotative message. Classification happens so 'quietly' that it hides in the receiver's subconscious. However, the receiver is very much aware of extracting. When someone, looking at an image on a poster, describes the image as a cellist alone on a darkened stage preparing to play, or that there is a concert Friday night at 8:00, the information is extracted from the image and the typography of the poster. Extraction is the reading of an image or text. If classification can be described as a procedure that categorizes, extraction can be described as a procedure that interprets.

To clarify their distinctive features, consider each process as a producer of progressively larger chunks of information. The product of the process of formulation is surface order. The product of the

process of classification is schema. The product of the process of extraction is message. Or, you can think of it this way: During formulation, the focus is on *how* something is. During classification, it is on *what kind* of thing it is. During extraction, the focus is on *which specific* thing it is.

Perhaps because we are conscious of it, extraction seems to be more accessible to verbal articulation. Because of this, it is easy to be fooled into thinking that the extracted message constitutes the entire message of the surface, and to be totally unaware of the roles played by formulation and classification. Yet these three processes each have their role to play.

Imagine that a visual surface were a packaged gift. You receive the package, noting its size, shape, proportion, color, weight (formulation). Perhaps you shake the package to see if it rattles or shifts. On the basis of these features, you guess that it contains, perhaps, a shirt (classification). What you are doing here is placing the known physical qualities into a context of potential items that bear a family resemblance to the physical qualities you've observed. You hypothesize a provisional, or potential identity. Finally you open the package and pull out the gift - "Hey, it's a shirt!" (extraction). At this point your knowledge of the particular shirt, with its full description of color, pattern and style vivid and clear as you behold it, seem to wash away the hazy imaginings of "shirtness" you may have harbored while opening the package. You are left with the awareness of having received a shirt. The extracted content (the message) somewhat diminishes the consciousness of the preceding stages. So it is with the process of extraction. The pulling of full message content from the "container" of surface order, through the intermediate stage of classification, is such a powerful force, and one to which the perceiver is so attentive, that other levels seem to recede into a haze of subliminality.

Our gift analogy fails in one important sense: no matter what kind of container the shirt is placed in, it will be the same shirt when it is extracted. Messages are much more slippery. During visual communication, each stage of the process has an influence on the others. If the container is strongly classified as "x", it may impart some of that "x-ness" on its content "y".

Take, for instance, the effect classification has on message content. Consider the following example:*

*adapted from Spoehr and Lehmkuhle, *Visual Information Processing*

TAE CAT SAY TIA

The ambiguous letterform "H" is half way between an "H" and an "A". The fact that most people read the word CAT suggests that the message extracted has been influenced by the classification of the visual surface order as part of the category "English word". CHT

does not fit the category, while CAT does. SAY and SHY however are equally potential members of the category "English word", and so confusion lingers. TIA, on the other hand, offers no potential content in either interpretation as long as it is contained in the category "English word", but would be interpreted as TIA (aunt), by anyone from Latin America because it belongs to the category "Spanish word", whereas TIH offers no content. In the world of visual messages, gifts in shirt boxes *become* shirts.

Extraction is...

Conscious and sub-conscious
Denotative and connotative
Culturally determined and therefore highly variant, even to sub-cultures
Contains the message
Strongly influenced by personal experiences

ACCOMMODATION

To understand the concept of accommodation, we must go back momentarily to classification. We spoke of the effect of association and personal experience and how these not only influenced, but permitted classification to occur. Of course, these past experiences and associations were themselves the result of the previous reception of information.* So there must be a final element to the receptive act that includes the retention of incoming information in the mind.

*This is the basis for the semiologists concept of unlimited semiosis. Every sign is a result of previous signs, which were the result of previous signs ...

Before the Behaviorist tradition removed from psychology all agents of action except for the functions of muscles and glands, there was the concept of apperceptive mass. Your apperceptive mass is all the attitudes, beliefs, understandings and viewpoints that make you you. A concept deriving from the 17th century German philosopher G. F. Leibnitz, it refers to the fact that our mental experience seems to be whole-cloth, not simply a collection of isolated scraps. In the 19th century, J. F. Herbart extended the concept by stressing that apperception functioned because new ideas could be taken in, or accommodated by an existing complex of ideas. Though the ideas of Leibnitz and Herbart were considered preposterous by psychologists in our own century (among other things, Herbart seemed to believe that ideas existed as actual physical 'lumps'), their view of the mind as active agent, processing new information by the use of prior information seems uncannily to foretell the semiologist's notion of signs as well as the the course of research into artificial intelligence.

Given that bit of background, we can define accommodation as the process during which the received message is taken in by the apperceptive mass. The new information affects to some degree the

condition of the apperceptive mass. It literally 'changes your mind'. You make the message your own. The new message might reinforce, contradict, or dissociate itself from your previously held ideas. Regardless how much may be remembered or forgotten, the message has some influence on the apperceptive mass. As Herbart recognized, ideas do have a way of bouncing off each other.

Accommodation is a method of "resetting the dials" of cognition in preparation for the next reception. An English speaker, having encountered the word "TIA", makes a new category for Spanish words, or at least for this particular Spanish word. Accommodation permits experience to play its part in the unlimited chain of messages. The product of accommodation is a change in the apperceptive mass itself - knowledge.

Accommodation is ...

unconscious and subconscious
Culturally determined, therefore highly variable
Influences and shapes apperceptive mass

I've tried in this paper to offer a model of the way in which people receive information. It is a model that is based on a synthesis of ideas from semiotics and psychology. I believe that by considering the reception of their messages according to these processes, discussion of the merits of any particular design will be facilitated. It's certainly not clear that holding to any particular theoretical model will make someone more creative, yet it is equally unclear that holding to a particular theory impairs the creative facility. At the very least, the formation of basic theory - by designers, for designers - can provide some insight about what we do. And this alone is justification for those of us who have never been satisfied to hold the Nike® "just do it" attitude.

Appendix M

Standard Discipline and Subject Categories

Standard Disciplines

Anthropology

Industry

Urban Planning

Business

Social Sciences

Mathematics

Sign Theory

Dance and Theatre

Environmental Design

Standard Subjects

Typographic Variables

Theory of Learning

Engineering Design

Theory

Instructional Objectives

Information Entropy and Life

Process Model

Visual Perception

Questionning and Thinking Matrix

Theory of Visual Perception

Validity

Graphic Design Process

Standard Disciplines	Standard Subjects
Psychology	Critical Thinking
Art	Methodology
Philosophy	Environmental Methodology
Graphic Design	Matrix
Design	Apple Desktop
Education	Identification
Architecture	Environmental Methodology
Science	Creative Thinking
Industrial Design	History
Linguistics	Brain Functioning
Engineering	Evaluation
Human Ecology	Vis com theory

Standard Disciplines

Standard Subjects

Creative Problem Solving

Architectural Model

Communication Theory

Project Planning

Programmed Instruction

Creation and Applied Imagination

Product Theory

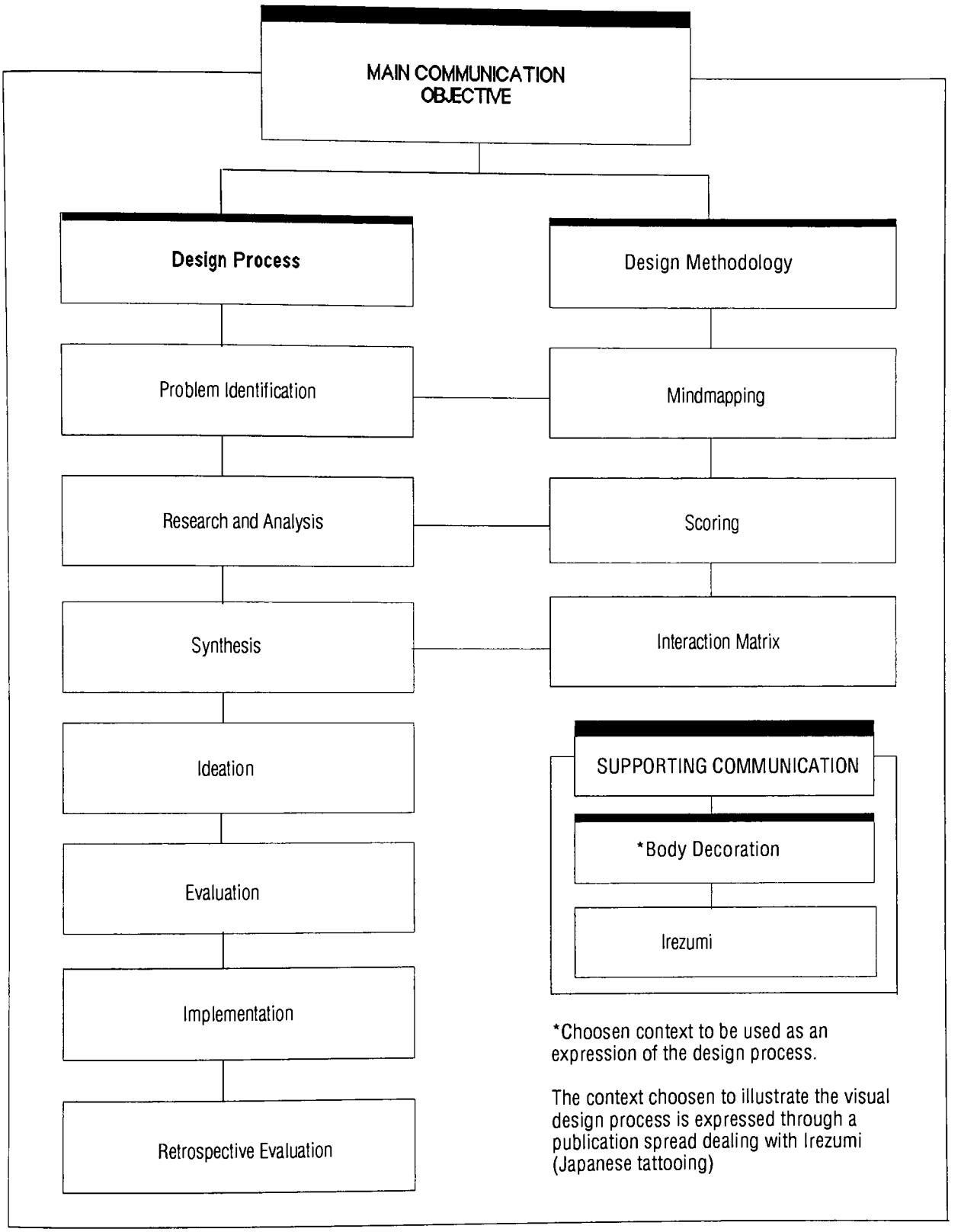
Creation

Identity Appropriateness

Systematic Process

Fusion Methods

Written
Diagram


MAIN COMMUNICATION OBJECTIVE
Design Process
Problem Identification
Research and Analysis
Synthesis
Ideation
Evaluation
Implementation
Retrospective Evaluation
Design Methodology
Mindmapping
Scoring
Interaction Matrix
SUPPORTING COMMUNICATION
*Body Decoration
Irezumi
*Choosen context to be used as an expression of the design process.
The context choosen to illustrate the visual design process is expressed through a publication spread dealing with Irezumi (Japanese tattooing)

Appendix O

Visual
Design
Process
Poster
Series


11
APR 92F03
35
APR 92F03
23
APR 92F03
14
APR 92F03
34
APR 92F03

problem identification

Synthesis is the point during the process to begin discovering interrelationships and patterns, to sort, sequence or order the interrelation of the parts of the problem. Simply stated, after first examining a situation and discovering what is involved, one utilizes the knowledge gained and does something to resolve the situation. One can synthesize by eliminating, replacing or changing parts or relationships according to the insight found in analysis.

Various methods that can be used are Venn diagrams, intersection matrices, sub-problem structuring and classification of design information.

synthesis

Beauty

Integration Matrix

This matrix is a diagram where functions are listed along two perpendicular axes and then the relationship of each function to the other functions is categorized.

The intersection matrix's purpose is to open up new thinking in new ideas and kinds of solutions to a given problem. The intersection matrix can be verbal or visual. The functions in this matrix are pragmatic and emotional key words that relate to a specific topic.

Elaborate
Decisacy of Line
Boldness of Design

Subtle Interweaving

matrix

Mystical

problem identification

mind map

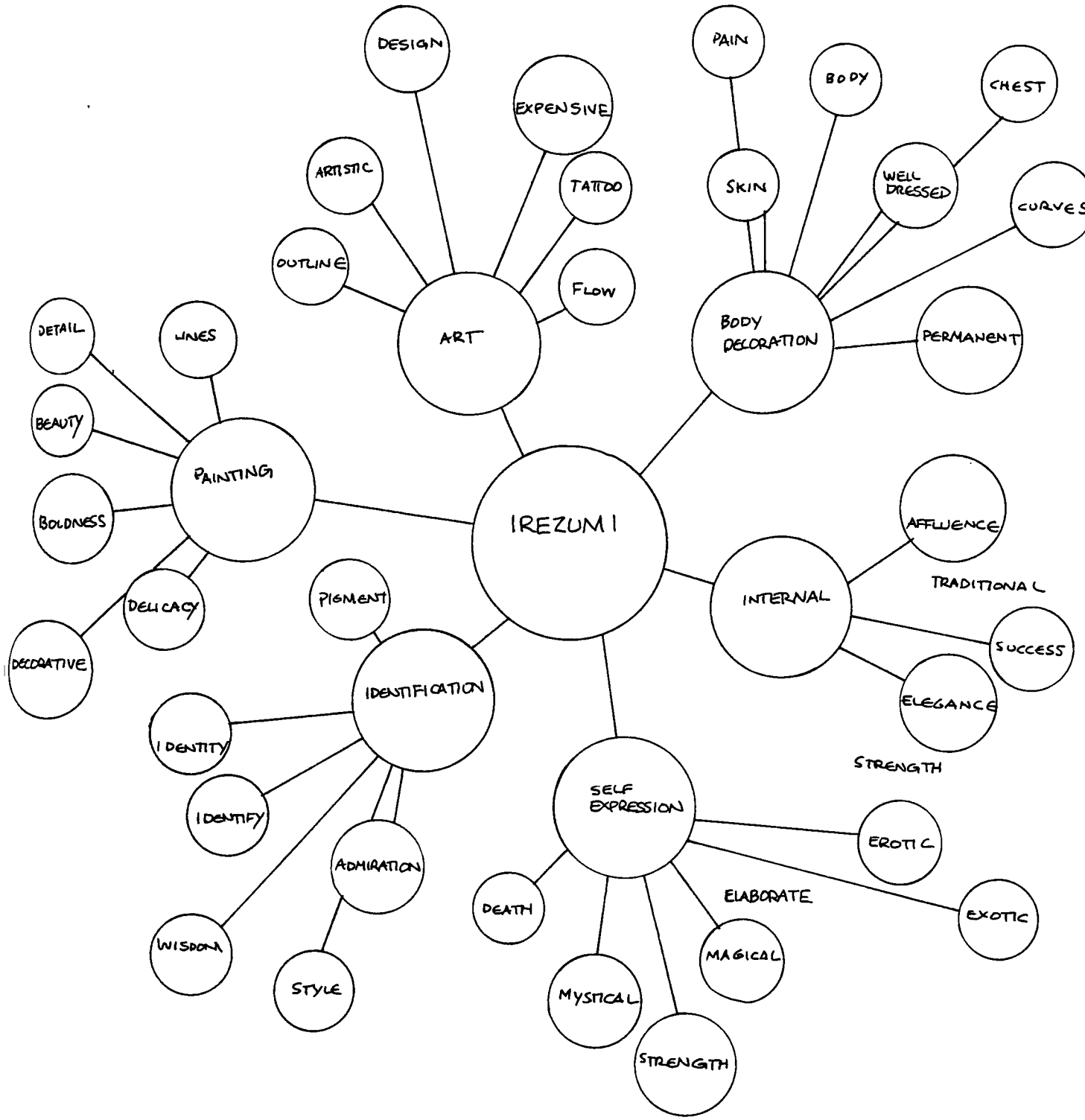
research and analysis

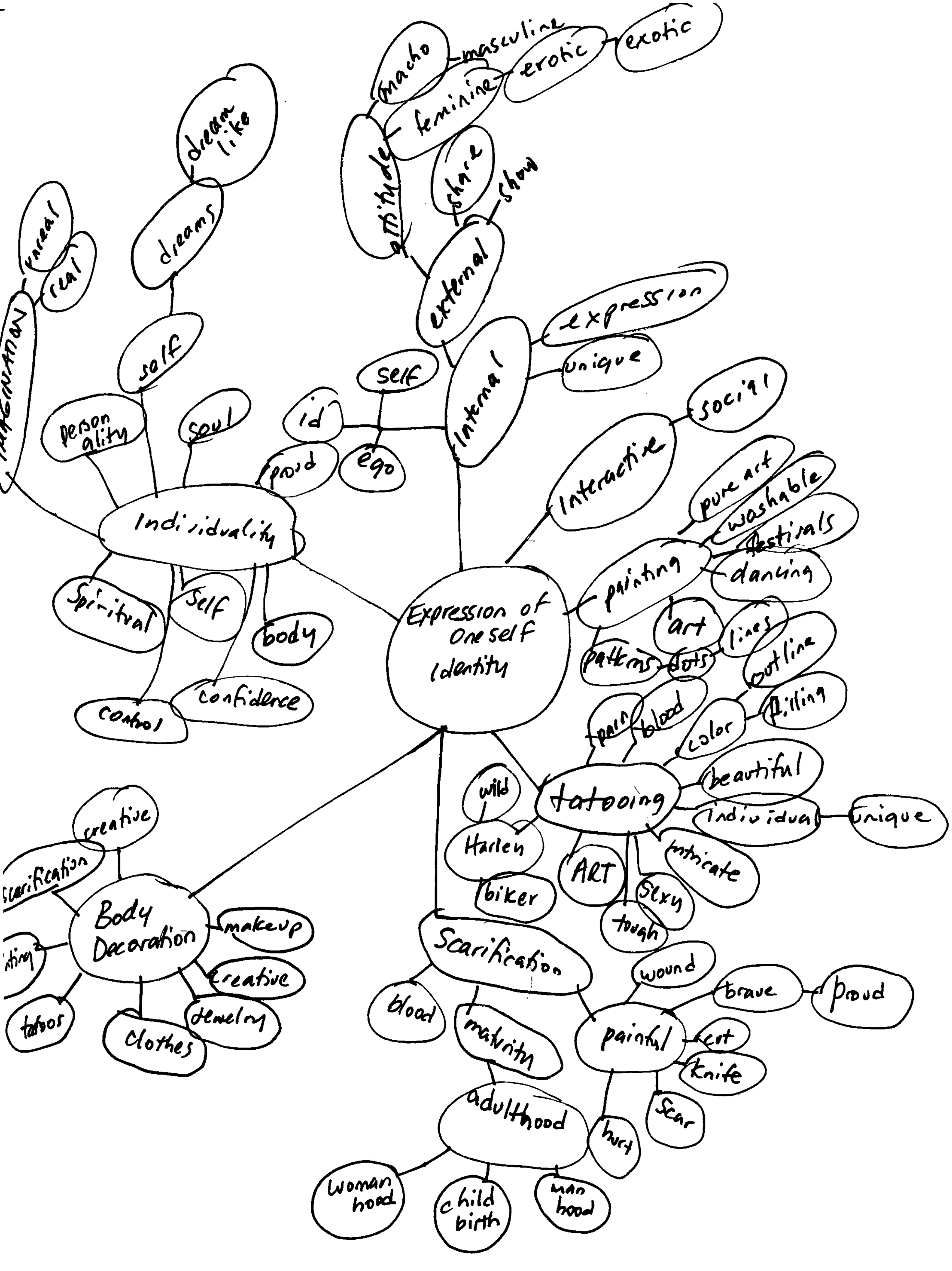
scoring

synthesis

matrix

Method:
Mind
Mapping


IREZUMI
ART
DESIGN
EXPENSIVE
TATTOO
FLOW
OUTLINE
ARTISTIC
BODY DECORATION
PAIN
BODY
CHEST
SKIN
WELL DRESSED
CURVES
PERMANENT
PAINTING
DETAIL
LINES
BEAUTY
BOLDNESS
DELICACY
DECORATIVE
INTERNAL
AFFLUENCE
TRADITIONAL
SUCCESS
ELEGANCE
STRENGTH
IDENTIFICATION
PIGMENT
IDENTITY
IDENTIFY
ADMIRATION
WISDOM
STYLE
SELF EXPRESSION
EROTIC
EXOTIC
ELABORATE
MAGICAL
DEATH
MYSTICAL
STRENGTH

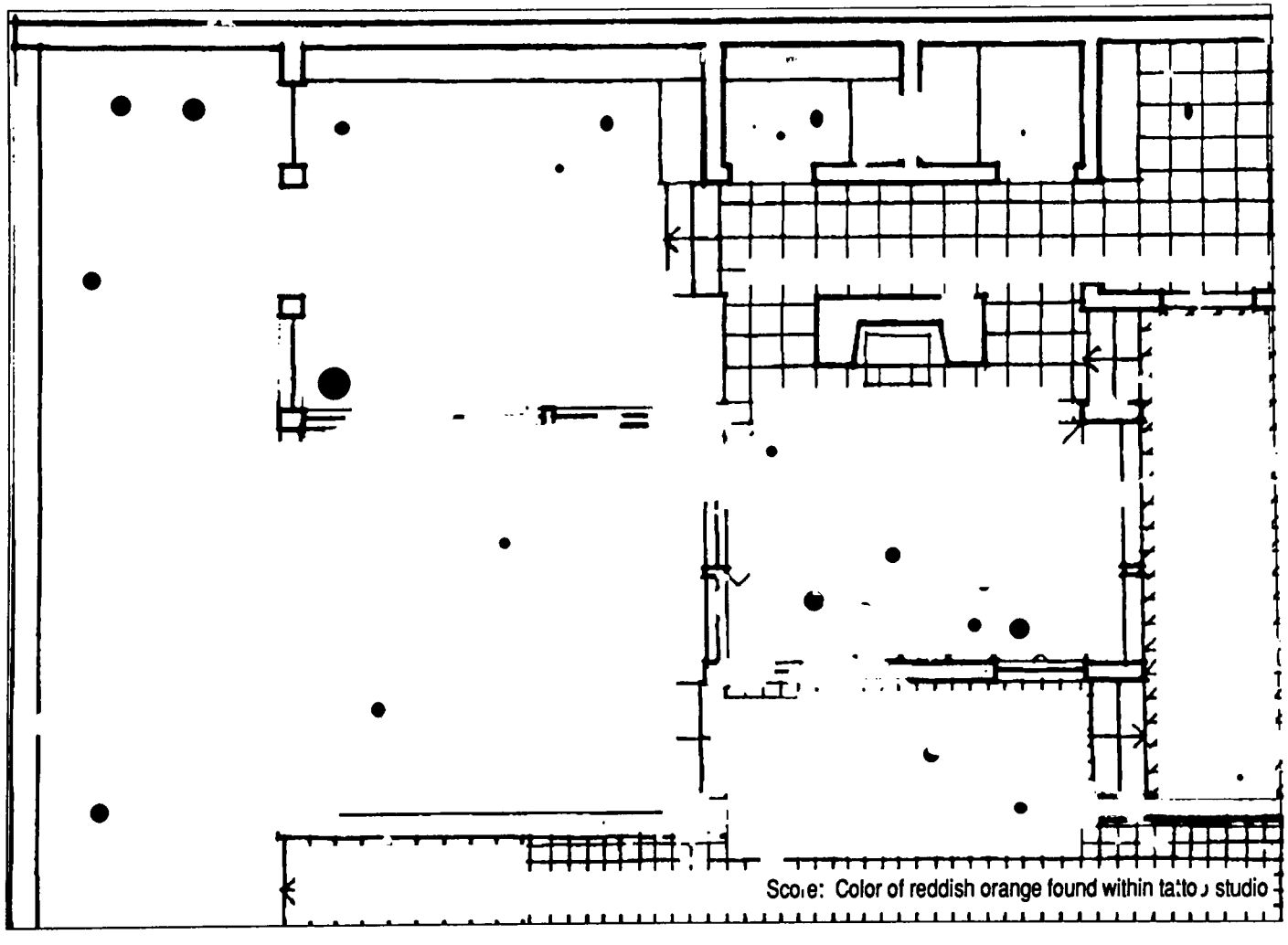


Expression of One self Identity
Individuality
self
dreams
dream like
unreal
real
IMAGINATION
person ality
soul
proud
Spiritual
Self
body
confidence
control
internal
self
id
ego
external
share
show
attitude
macho
masculine
feminine
erotic
exotic
expression
unique
interactive
social
painting
pure art
washable
festivals
dancing
art
lines
outline
patterns
dots
pain
blood
color
filling
tatooing
beautiful
individual
unique
intricate
sexy
tough
ART
wild
Harley
biker
Scarification
blood
maturity
adulthood
woman hood
child birth
man hood
wound
painful
brave
proud
cut
knife
scar
hurt
Body Decoration
creative
scarification
makeup
creative
jewelry
clothes
tatoos

Appendix Q

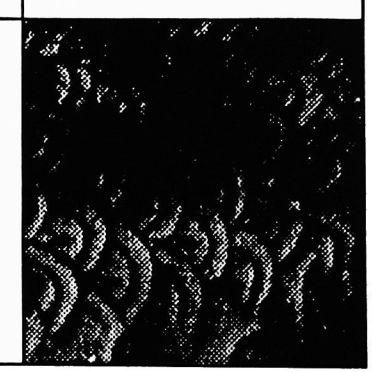
Method:

Scoring


Scale: Color of reddish orange found within tattoo studio

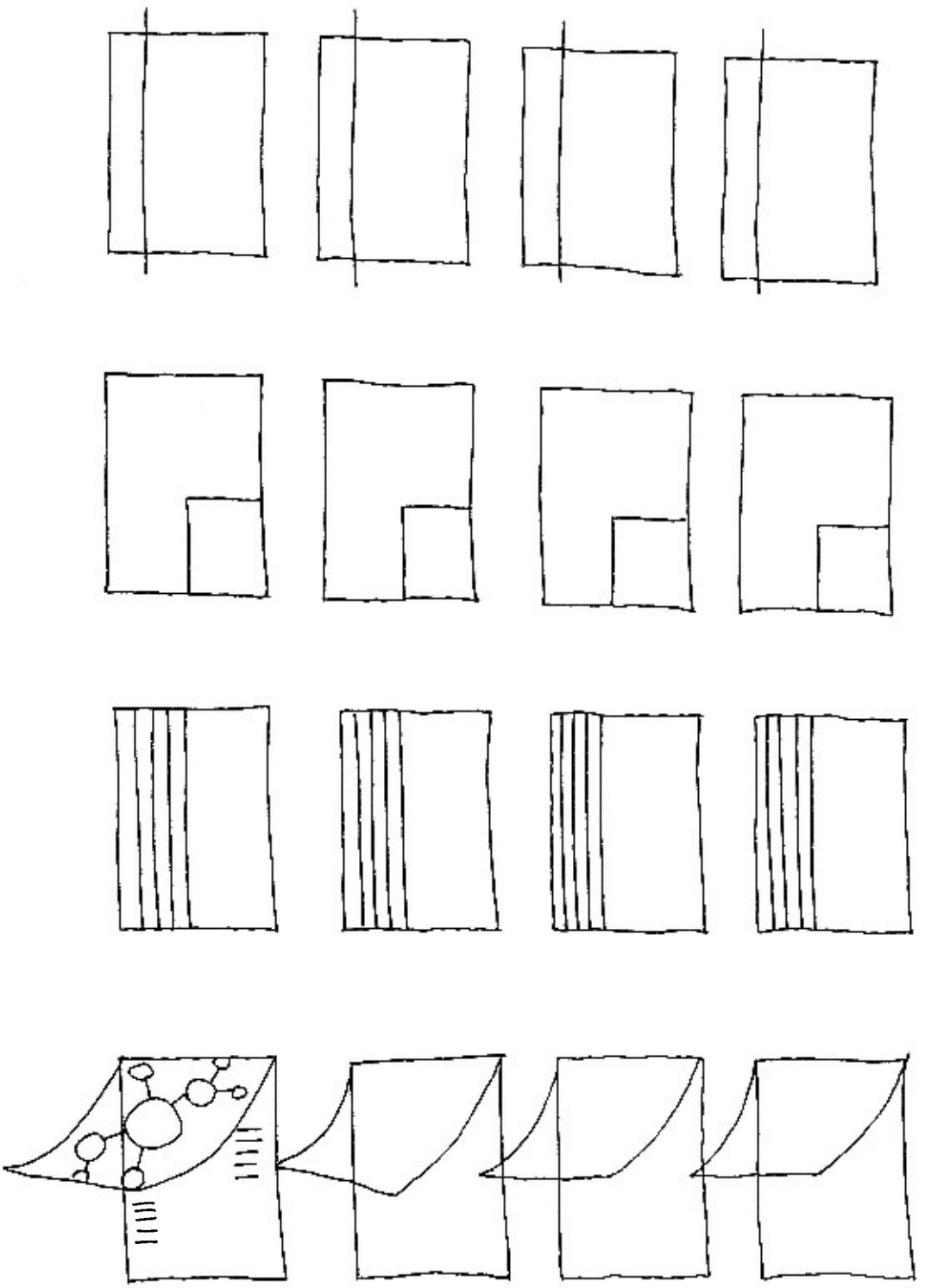
Appendix R

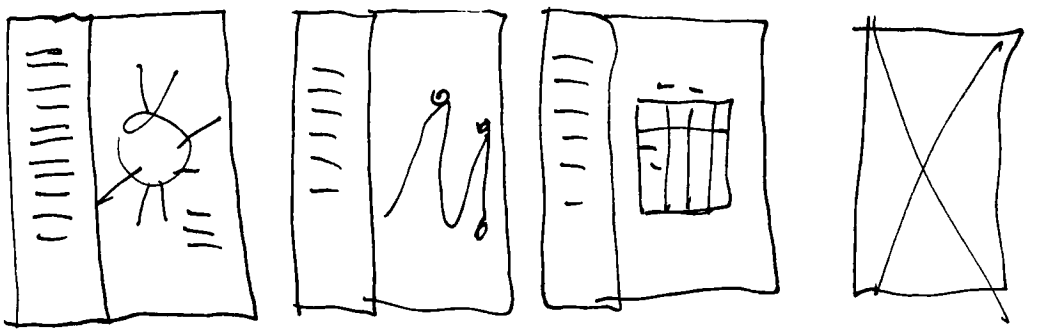
Method:
Interaction
Matrix

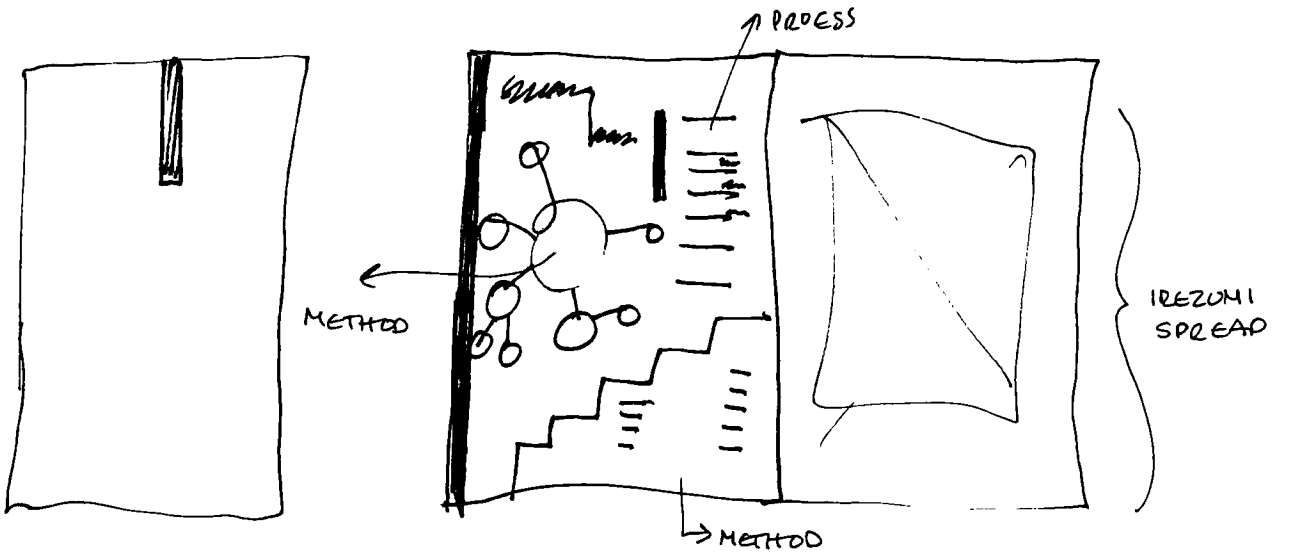
	Spiritual	Mystical	Exotic	Erotic
Japanese				
Traditional				
Permanent				

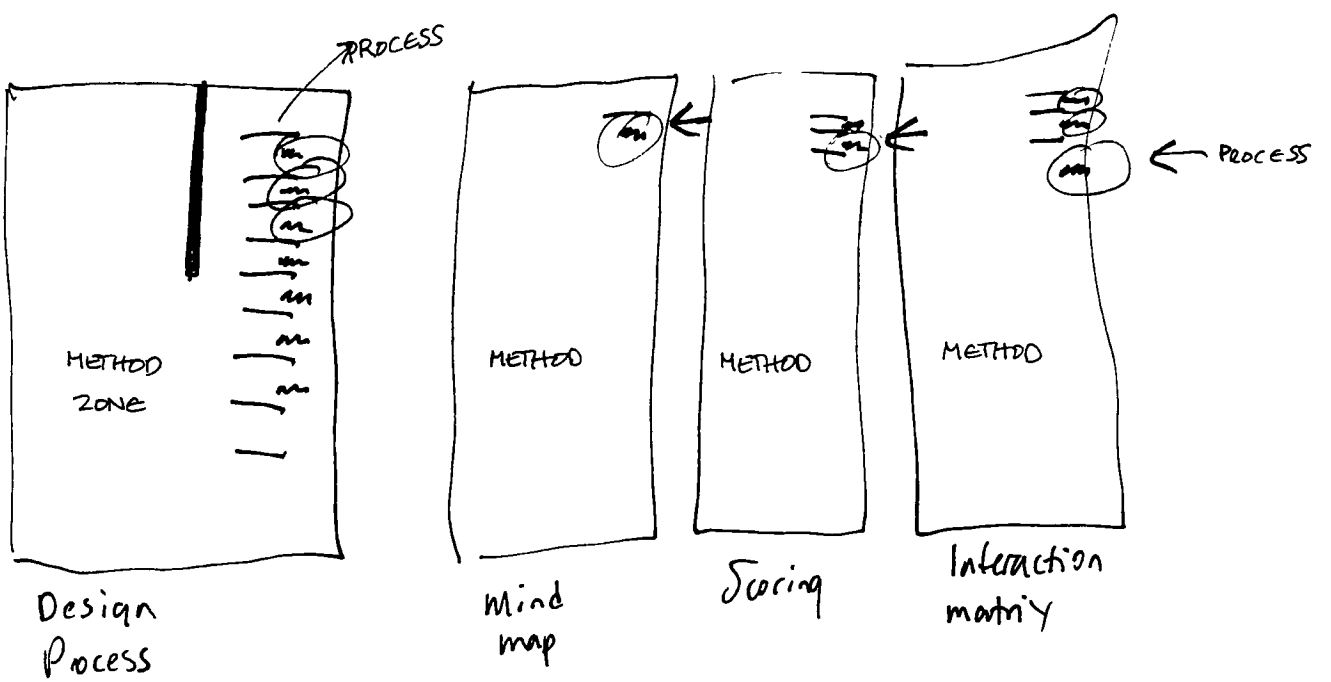
Appendix S

Placement
Exploration



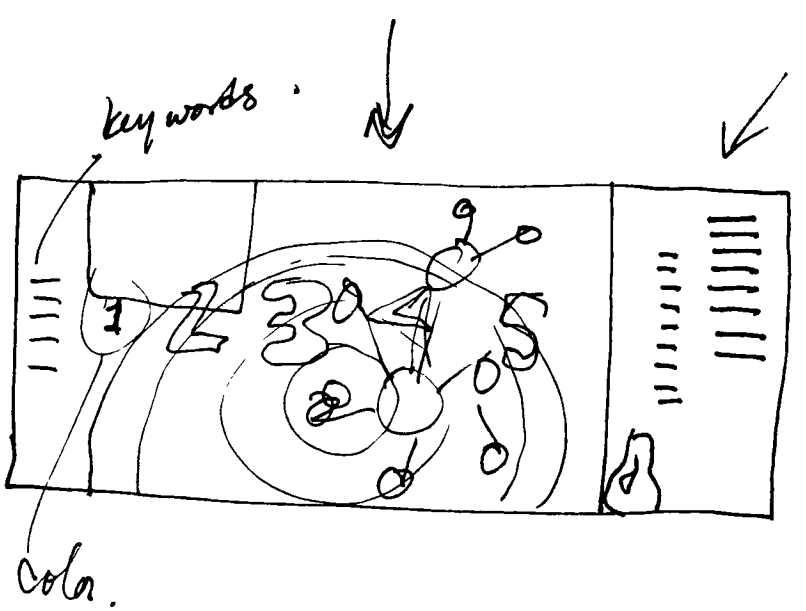


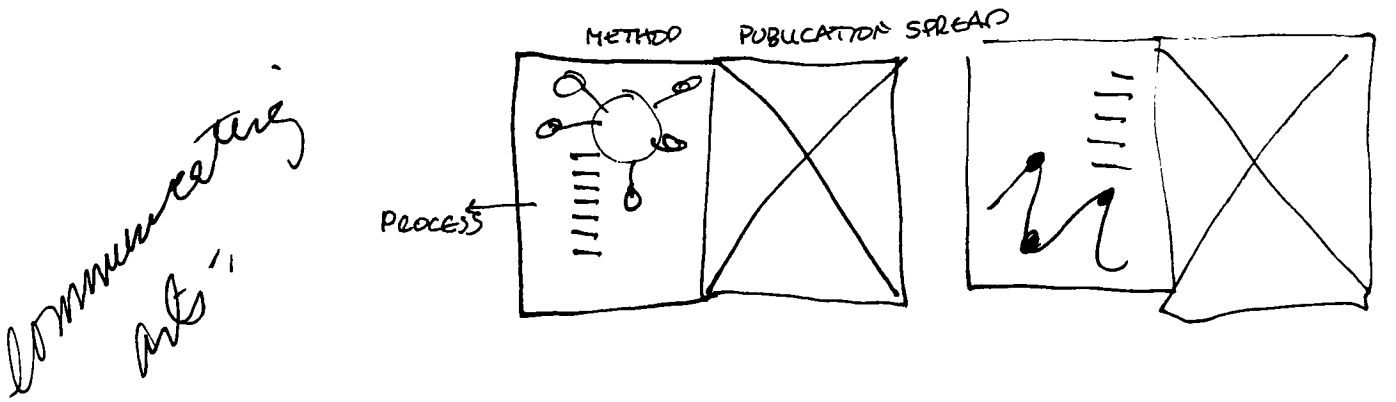

PROCESS
METHOD
IREZUMI
SPREAD
METHOD

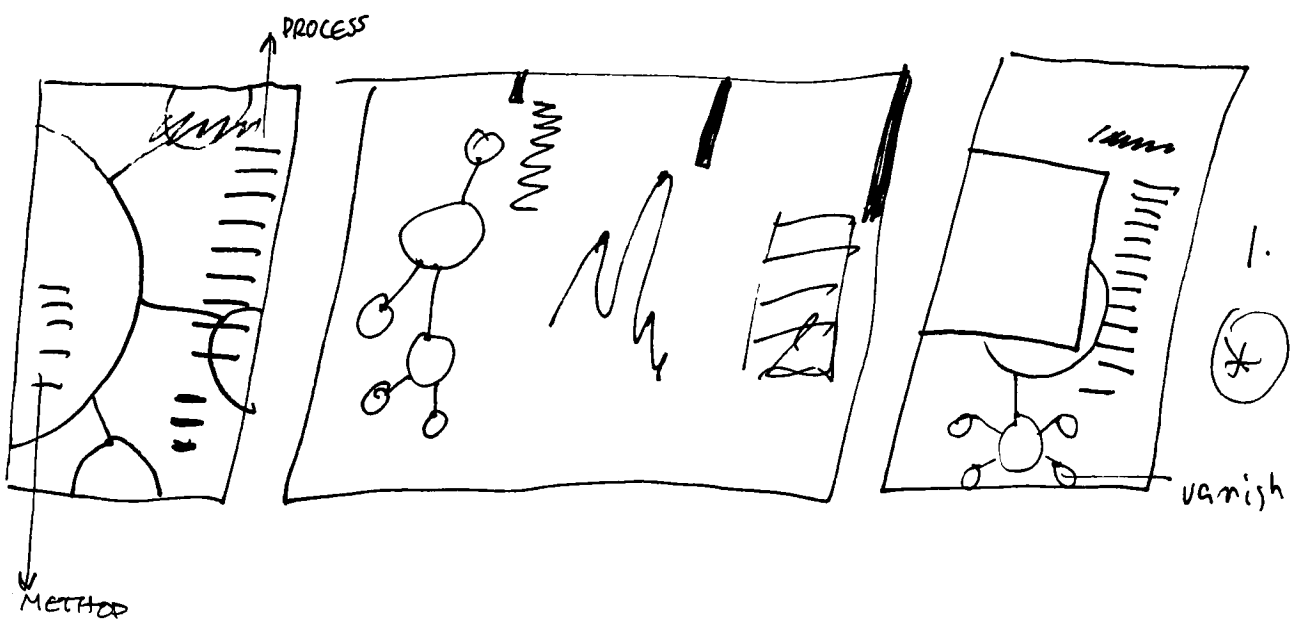

PROCESS
METHOD
ZONE
METHOD
METHOD
METHOD
PROCESS
Design
Process
Mind
map
Scoring
Interaction
matrix

PROCESS

IN PROGRESS

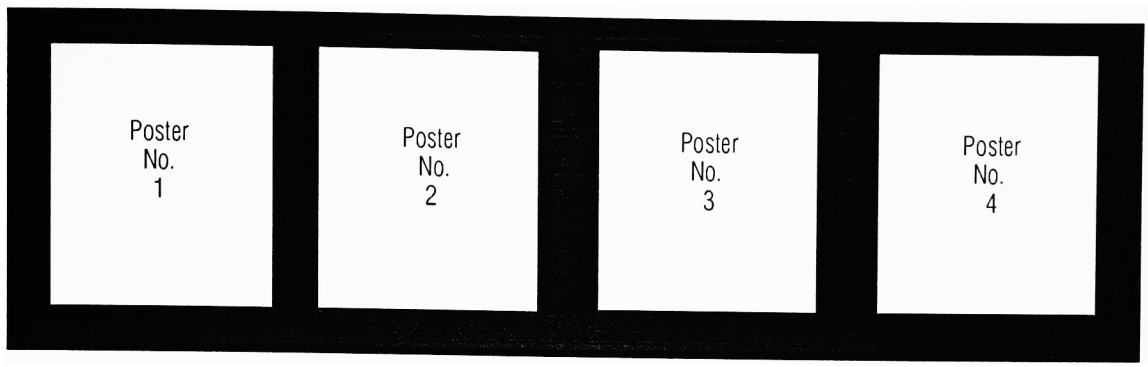


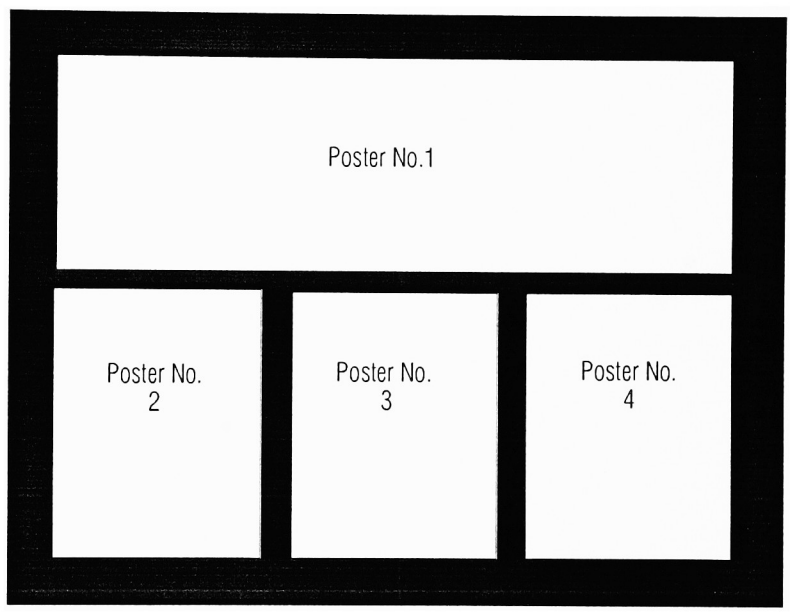


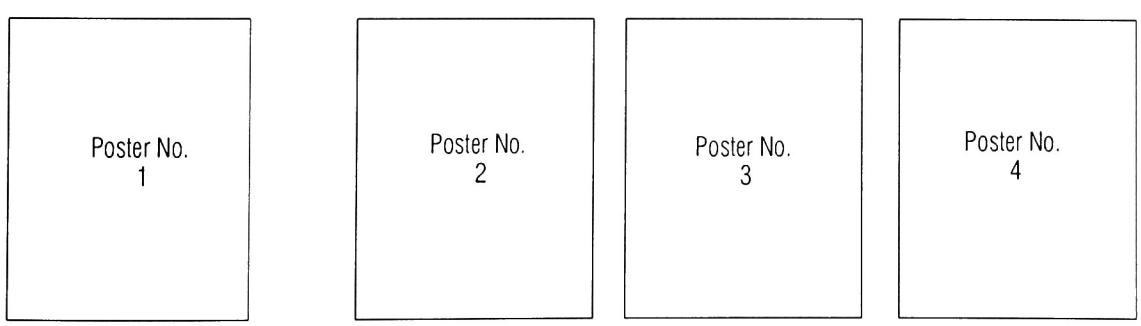


Appendix T

Poster
Format
Exploration







Design Process

Problem Identification

Research and Analysis

Synthesis