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I see my thesis work as needing to be addressed from two perspectives. The first is the conceptual evolution of the work and of the parts that comprise it. The second is the evolution of the technical problems and solutions needed to make the conceptual goals into a physical reality.

Part I
Evolution of Concept and Content

I have, for many years, addressed certain themes in my work. From my earliest work, (paintings done in college over 25 years ago) to the present, I have been fascinated with masks, costumes, toys, and emblematic statuary and painting. They particularly interest me as embodiments of human aspirations, fears, social convictions, and myths. This kind of artifact sometimes carries obvious projections and sometimes more ambiguous, though no less powerful, ones. They are often intended to serve as a device of "empowerment", not only in cultures in which mask and costuming are integral and serious parts of religious/cultural structure, but as a component of isolated contemporary events, in our culture, like Halloween, Mardi-Gras, and costume parties. In aboriginal cultures, masks and costuming addressed ideas of empowerment in more broadly archetypical ways, (identification with forces in nature,-- sexuality, fertility, strength). In more complex cultures, societies more removed from an intimate interaction with nature, the identification may more likely be with social archetypes--(the "he-man", the "femme fatale", the "comedian", the "cute baby"). Implicit in my game is probably the notion that current "masks", (costuming, and symbolic objects) serve more as illusion, empty wish, avoidance or protection against life than a way of entering into it more fully. The use of archetypes in our society tends to resist reality, not implement it, and the more strongly people seek refuge in them, the more trapped they become. Symbolic objects can, obviously, function as reinforcement for current or traditional social norms. Occasionally, in the hands of artists or provocateurs, archetypes and symbolic objects can function as a
commentary on social norms. They can push these ideas and symbols to their limits or reset them in a different context.

I have been attracted to toys, in part, because they are an inexpensive and available means for me to begin to collect interesting man-made representations of human activity and human form. I am also attracted by the visual seductiveness of their bright color and interesting form. Early in 1985, I began photographing novelty items in a densely packed party store in Binghamton, N.Y. Two features especially attracted me. One was the presentation of each item "en masse", an instant metaphor for large numbers of people doing the same socially accepted activity. The second thing that attracted me was the confinement of these little people in plastic bags, a visual equivalent of the packaging that is endemic in our society. Not only of objects, but activities, events, ideas and art. All of which are too easily enclosed by titles, spokesmen, verbal and literal parameters, rendering them "easy to understand" and easy to sell. The price tags that sometimes blotted out the faces and bodies of the figures, seemed suggestive to me of the tie between packaging and purchase-- the bedrock of contemporary advertising--, the notion that all experiences and achievements can be packaged and bought.

In the fall of 1985, I was on exchange in Philadelphia for fall quarter to learn more about the relation between photography and offset printing at Tyler School of Art. It was in considering ideas for a "short-term" project to print that I first thought of the life-game. Uprooted again, I considered the unorthodox route my life had taken, the few socially typical choices I had made at the standard cultural crossroads. Here I was, for instance, in my late 40's, deciding to return to school and get a Master's Degree! I had a comparative image of the path of my life and the paths of childhood boardgames in which there was a single route to follow and a single destination to attain, in order to "win". I decided I would make a game about life which had no particular destination, and "winning" could only happen by achieving understanding through whatever experiences one encountered.

I also decided that the images for the cards in my game would come from the embodiments of life events in the cheap toys and novelties found at party-stores,
novelty shops and toy departments (to celebrate births, weddings, awards, etc.), that is to say, in the popular images people have made to reflect themselves. I knew at the time that I wanted to make the game seductive looking, --cheerful, colorful,-- in an obviously invented way, fun. The "seduction" would be an ironic appropriation of mainstream cultural messages, both in terms of the artifacts photographed and in the use of a game as the form of presentation. The impact of the more serious meaning of the game would happen after the "seduction". So I began in my free time to hunt down novelty stores, flea-markets and toystores in search of evocative "surrogates" and symbols for real life events. It became clear to me almost immediately that this was not a short term project, but one which required a lot of thought, a lot of time, and countless decisions at every level. It also seemed clear to me that it was important enough and comprehensive enough to replace the book project I originally intended to do. This was a book disguised as a game.

On my return to Rochester in December I continued seeking stores in which to photograph these artifacts and began to lay out an "architecture" for the game. I made lists of "characters" I would like to include, lists of basic life-situations I would like each of them to intersect with, (childhood events, love, sickness, loss, finances etc.) and lists of metaphoric encounters which might be desirable to include on the game-board itself. (Image # A, AA) I had hoped originally to have 10 or 12 characters. However, financial considerations first, and time considerations, second, made me change my mind. I needed to limit my offset printing to 6 flats and corresponding plates. If I had many characters, I would only be able to have 4 or 5 story cards within that printing space for each persona. This would certainly make a short game for the participants and a very slight narrative.

The problems of doing this project in game form began to seem overambitious for the normal time span of a Master's project, and I considered making a shorter, more poetic version as a book, (Image# 1, 1A) with cards to pull out and read, in pockets, on pages printed with sections of a game board. My board members encouraged me to keep it as a game, even if a game low in "strategy", simply to retain the impact of my parallel to the original box-game reference. So I narrowed the group of characters to four- a man, a woman, an artist, and a dog- with 14 narratives for each, and hoped that most or many of the situations and understandings I wished to speak about could
fragments from evolution of written material

rough drawing for project in book form

game board imagery

later 2-page mockup of project in book form

80th #1 inset cards

original drawing for game board

samples of photographic grass for original game board

sketch for gameboard
August 1987

Fine Line Ink drawing for gameboard

Heavy Line Ink drawing for gameboard

"romantic" landscapes intended for use on game board

Xerox + watercolor (first color study for game board)

game board for God Life
be absorbed into these four characters. The narratives on the back of the picture-cards, in my original conception were going to be very short and somewhat humorous, even sardonic. When I started to write from the notes I had made, I realized that I wanted to do more than a quick sardonic hit, much more. I soon began to seek the smallest readable type-size for the space on the back of the cards to allow for the fullest narrative. The element of humor was not discarded, but became quieter and not an automatic requirement of each story. I wanted to include significant understandings from my own life, and empathetic and imaginative takes on other people's lives. I used stories of my own life, stories collected from other people, either by request or observation, and to a great extent, totally hypothesized events to address issues I considered significant. In the end the stories were a magical and somewhat unpredictable amalgam of all these elements. In addition, I tried to co-ordinate the narratives with the images, so that each story bore some relation to the image on the other side of the card. The writing alone was four to five month's work.

The meaning and esthetics of the game board was another evolution. Initially I intended to have it carry more action, (verbal instructions, "pitfalls", "encounters"), and less visual weight. It was to be a relatively simple twisting ribbon of "blocks" (comprised of photographically derived sidewalk textures), set in a (photo-derived) grassy background. (Image #2, 2A ) After an intense encounter during the summer, with an exhibit of early cartography, I changed my approach. I had always been fascinated by the strange mixture of flat diagram and contradictory three-dimensional illusions in these early maps. The mixture of "realistic" spatial illusion and obviously manipulated, ("incorrect"), space seemed appropriate. So I drew a new game path, oddly three-dimensional.-- asalute to the maps, to Walt Disney, and to reminiscences of childhood fairy tales. (Image #3, 3A, 3B ) I intended to have a complex landscape around the path, - mountains, valleys, cliffs- a kind of 19th century romantic version of the world, (a still extant "archetype" of nature). I shot a variety of landscape sites, translated them into film positives and tried to collage a cohesive world around the paths. (Image #4 ) No matter how I juggled the mountains, valleys, rocks and trees, I remained dissatisfied. Then, as I was nearing the printing deadline, it struck me that the world of the background should be surrogate images of landscape, just as the cards contained surrogate images of
human activity. I decided to draw on my collection of old postcard views. I picked Hollywood of the 40's, Niagagra Falls, Moonlight on the Lake, etc., highly manipulated "views", all romantic. They were enlarged, reduced, altered, collaged, extended until they became an impossibly credible panorama tucking behind and rising "above" the game path.

The complexity and density of this collage/panorama created new esthetic problems. All the other elements had to be simplified and strongly unified in order to hold the composition together, and to keep the path strongly visible above the scene. The detailed photo texture of sidewalk (top and shadow side) (Image #7,7A) intended for the path had to be let go; the pattern of small, even, mechanical dots tried in its place had to be let go; the photo rock-barriers and "holes" (Image #9) in the path had to be let go (Image #8); the photo texture of actual river water (for the "river" on the board) had to be let go; 14 of the 15 drawings of water textures had to be let go! (Image #10)

In the end, to keep priorities intact and compositional unity, the sidewalks were painted flat yellow with orange shadows, the rock impediments were drawn in a simplified style like the path, (Image #11), (rather than presented with photographic detail), the river had the simplest of stylized drawn notations to indicate water, the written instructions on the board were spare in number, small in type-size, and integrated as drawings of road signs.

The one aspect of the board which underwent almost no change was the area designated for "going around in circles". In the conceptual structure of the game this was a pivotal feature, the worst "punishment" of the game: going round and round in the same self-contained little path until 'insight' or a rare bit of luck could get you off and moving again.

The last set of decisions involved the border and the title, the final elements in consolidating the "gamelike" look without undermining the already complex unity of the interior. The game title was transferred from its original prominent place in the border to a "post-card title" within the panorama at the bottom. The border pattern picked had linear similarity to the line drawing used on the board, and the colors I used were the three featured prominently on the board,- yellow , orange, and light
blue. (Image #6)

I had strong notions about the exhibition of this project. It was important to me to have a strongly interactive atmosphere, and to erase barriers to identification with the material by this active participation. I did a number of things to create this interaction. The first was to make invitations to the opening that included life-size masks of one of the four characters to be worn to the show. (Image #12 A-B-C-D) The exhibit itself included nearly life-size, self-supporting, hand-colored, photo figures of the four characters who, in effect, mingled with the live audience, (Image #13, 13B), and a proportionately scaled replica of the path of the game board spread out on the floor. (Image #13A) In addition, I enlarged a significant number of the narratives to 8" x 10", from each of the character's cards, so they could easily be read in an exhibit situation. (Image #14A) They were grouped with 11" x 14" cibachrome prints (Image #14B) of the images that were on the other sides of the cards. Last, but not least, I set up a table with the game set up to be played by any four guests who chose to try it. (Image #15) The directions to the game include, and in some ways center on the reading of the cards aloud, and the adding of personal and related anecdotes. I was extremely gratified that so many of the guests participated in this way, and had such a good time doing it.

In its completed form, the game included 4 characters, (a man, a woman, a dog, and an artist) to be cut out and stood on their shadows; 14 story cards for each character with colored photographic images on the reverse side, surrounded by a color, patterned, border, which identified the card with the character; a gameboard with collaged and altered scenes deriving from old postcards surrounding a bright yellow path, an orange circular path (Going Around in Circles), and a river; paper dice to be cut out and assembled; and a set of directions for playing the game.

The exhibit was comprised of a wall display which included the cards from the game, (presented both in complete sets for each character, and used in non-perpendicular, loose groupings around the room to give a light-hearted, decorative effect), 11" x 14" cibachrome enlargements of the photographic images used for the cards, enlarged sample narratives from the cards, (8 1/2" x 11"), and the 6 printing flats, uncut, as they came from the press, a table with the game set up for playing and four chairs, the
four standing characters (hand painted, 4 foot high photo images, and the enlarged path of the gameboard, mounted on sandwich-board, cut out and laid on the floor. Many guests entered with the masks of the characters on, and the exhibit was held in the old "jailroom" (entered through a heavy metal door with small barred window), at Writers and Books, in Rochester, N.Y.
The original photos for the cards were all shot in 35mm black and white Tri-X film, almost all on location in novelty shops, 5- &-10's, and party stores, where I could get the cluttered and unprecious look of the merchandise that I liked. ( Image #16 ) The next step was the translation of the 35mm negatives into film positives which would convert the tonal range of a continuous tone negative into a dot structure that would be printable by offset lithography. I did not choose to use the half-tone dot system, ( traditionally used for photo offset), for three reasons; one, I did not own a half-tone screen, which is extremely expensive; two, using half-tone screens for color, which I intended to add, requires angling of 45, 75, 90, and 105 degrees to avoid a moire pattern, which would be extremely difficult to control without special equipment in a normal photo-darkroom situation; and three, perhaps most importantly, I much preferred the visual look of a random dot image to a half-tone image. (Image #17, 17A)

I experimented with the production of random dot film positives, trying variables of film type, presence/absence of non-glare glass over the film during exposure, variables of timing and distance from the film, and Fine Line vs A & B kodalith developer. In the end, I used Kodalith 2556, plus non-glare glass (which refines the breakdown of image into a dot structure) to make the positives. I treated the production of these positives in the same way I would a paper positive, burning or dodging where desirable, altering timing to suit the variations in the negatives. Much harder to resolve was the translation from these positives into negatives that would produce the image that I wanted in offset printing. I made a great number of them by hand, contacting them in the darkroom under ordinary glass, and developing them in standard A and B developer. There seemed to be no advantage in developing the contact negatives in Fine Line developer.

I was, however, haunted by my inability to test these negatives for their ability to translate well into offset printing. I checked with members of the printing department at R.I.T., and though they were friendly and fascinated with the approach, they had never worked with random dot technology and their responses ranged from bewilderment to
flat-out predictions of its uselessness as a printer's negative--too fine a dot to be retained through platemaking and printing. However, I was offered the use, when available, of several pieces of equipment. One was a point-light exposure unit, and a vacuum board for making more precise contact images in the Repro Photo Lab. The point-light source is constructed so that the light rays travel in a straight line, rather than dispersing at various angles as a normal light source, and, coupled with the tight-contact of a vacuum board, produce a contact negative of greater precision. Also available to me were automatic machine developers for the exposed contact film, and a small proofing machine normally used for checking half-tone negatives. After experimentation, I selected the Fuji developing unit, and on the basis of proofs made with this equipment, arrived at a base timing for making contacts.

However, my confidence in the consistency and dependability of machine development over hand-development proved to be misplaced! When consistent procedure yielded me inconsistent results, I was reminded by the printing department that it is humans who replace chemicals (or don't) in these large machines, and that usage and chemical maintenance varied. I became obsessed then with 1), producing a range of negatives of different densities for each positive, so that I would have the "correct one" for translation via printing to paper and, 2), finding a dependable testing system for the results. It seemed altogether too probable that the proofs from the small proofing machine, which did not produce consistent results from day to day, would not correspond predictably to an actual printed image.

A year earlier, I had sought out Harold Scharmberg, in the College of Fine and Applied Arts, for use of his process camera to do some large-scale film work. He now recommended that I speak with Jere Rentzel of the NTID Printing Lab. Jere became very interested in my unorthodox procedures and my project. With his support, I was able to do two things:

1) proof my negatives on his large and carefully regulated proofing machine (Image #18, 18A )

2) run off small test plates, on an offset litho press of 6 of the 56 images in the game. We ran it on two kinds of paper, one clay-coated, similar to the stock I was using for the game,
other a standard weight bond. (Image #19, 19A )

This was a great relief, because, contrary to dire predictions, the random dot negatives yielded an image close to the original positives. (Image 20 A-B-C )

From the beginning, I knew that color was very important to the game, and that I did not want to use color simply as I found it. I wanted to have seductive, consistent and invented color. My first approach was to create carefully drawn block-outs, (Image #21), with opaening fluid, for individual areas of each picture. These would have allowed me to print colors selectively in these areas. The effect I wanted was very lush and rather unreal color. I tried both direct brush application and air brush to create these masks. (Image #22 ) But it was hopelessly cumbersome and time-consuming without the promise of useful results.

The next plan was to make transparent color proofs (NAPS) of both negative and positive areas at 50%, 40%, 30%, 20%, and 10% of full density with the help of borrowed tint screens. Having made a set of these reduced intensity negatives (magenta, yellow, cyan, and black) (Image #23), I played with the proofs in different combinations, (using both positives and negatives so all areas were filled with color), to see what they would yield. I even set some layers purposely out of registration for less predictable color relationships. (Image #24 ). Still, this approach to color seemed too static and limited to be useful for a set of 56 cards.

Then I tried very loose water-color drawings on artist's paper (working over the kodalith positive which was taped down to a light table). If this proved satisfactory, I intended to make my own in-camera color separations by shooting these drawings, with register-marks, with filters, (#29 red, #61 green, #47b blue). I had done some sample tests in Philadelphia at Tyler. Though I loved both the process of making the drawings, (returning to the painter in me), and the looseness and lushness of the drawings themselves, ( Image # 25 ), the constant crossing of color over photographically delineated borders proved to me too disruptive of the image, and created too much loss of "credible space" for my taste.

I then tried thinner artist's paper over the image on the light table, making color areas
Plan "A" - Negative positives of original, screened at 10% of full density.

Plan "B" - Negative positives of original, screened at 10-50% of full density.

Plan "C" - Negative positives of original, screened at 10-50% of full density.

Plan "D" - Negative positives of original, screened at 10-50% of full density.

Plan "D" combination of combination of positive overlays in any of positive areas.
more clearly related to the shapes of the original kodalith image. (Image # 26,27, 28 )

But having understood my wish to maintain "credible space" and the illusion of three-dimensionality, even the thinner watercolor paper was too thick to work the color in a physically accurate way. I also considered making color separations with a color copier, running separate sheets of paper for each color pass, (corresponding to the magenta, yellow, cyan, and black for offset printing), but I really disliked the changes in color, (29, 29A )

I turned next to "treated" acetate, with a surface that is supposedly prepared to better hold liquid drawing materials, and tried drawing with brushes and dyes on this surface. I used adhesive paired register-marks for the co-ordination of photo image and drawing. ( Image # 30 A-B-C ) I experimented with Marshall's Photo Retouch Colors, Cibachrome cake retouch dyes, Luma Brilliant Concentrated Water Colors, (liquid), and Photocolor, English Triple Strength Transparent Dyes. Though I used several of these color resources, most of the work was done with Luma Colors and Marshall's Dyes. Archival permanence was not an issue because the drawings were intended for color separations only. What was an issue was how well the color adhered to the plastic surface, and how closely the color, when dry on the acetate, related to the color intended. Certain colors seemed to adhere better than others, and certain colors seemed incapable of "reading " correctly on acetate. It was virtually impossible to get true brown or hot red. It was difficult to get "flesh" tone to adhere; it was almost impossible to get the fluid changes and shadings of color I had gotten on paper. Still, relatively speaking, I could maintain the credible illusion of form and space; I could have a relatively diverse palette; and I could have a consistent palette for the game as a whole. So I compromised on my original intention to use a hotter range of colors, replaced fire-engine red with magenta, ( a color that worked well), and used proportionately more blue and aqua, which also worked well. The "pink and aqua" combination was reminiscent of early plastic toys rather than printed toys, a workable conceptual substitute.

Jere Rentzl expressed interest in doing color separations for this project as a way not only of helping me but using it as an incentive to teach himself the use of a new piece of equipment in his laboratory, a Hell laser scanner. So, although it was appealing to think of having another aspect of the production under my own control, (by way of
Random dot positive

Color drawing on acetate

LEFT: film positive
RIGHT: color on acetate

Combination of color + film positive

RIGHT: color drawing on acetate to correlate

Various notation systems for keeping track of writing/images

Fragments from evolution + organization of written material

Fragment of organizational efforts

Test: color separations magenta, yellow, and cyan film layers

Early test of color separations

Early test of color separations

Proofreading and transcribing narrative
Color proofs of borders chosen for cards

Film mask "A" for border color

Film mask "B" for body color

"A" flat

Assembling images on A+B flats to make

Full sheet proof of 4th plate(s) before

5th press sheet
in-camera color separations), I opted for the promise of a more accurate and richer translation of color than "homemade" color separations would have yielded. I gave Jere a sample "combine" of kodalith print and acetate color drawing to use for color testing on his new equipment. It was decided to make color separations of the drawings with the pre-angled 133 line screens that were co-ordinated with the scanner, and to do a separate black plate for the photographic information of the original random dot kodalith. The drawing would be printed with the traditional translucent process colors, (magenta, yellow, cyan, and black), and this extra black-ink plate for the photo image would be run with opaque black ink, so that it would "take priority".

At this point it is important I think to speak about the coordination of services and tasks. My project grew and changed during the course of production. For efficient and effective production, this is not an ideal way to proceed! Ideally, in terms of efficiency, and cost, (if such a project were to be done outside the institution), complete clarity about objectives, procedure, budget, etc., would be desirable. The necessity for compromises may be inevitable, but a fairly complete sense of the end product is more than helpful.

One of the more difficult aspects of production was simply co-ordinating and keeping track of the many elements that went into production, and their current stage of completion. I was constantly devising notebooks, folders and categories which would both keep materials separate and help co-ordinate them. For the writing alone, records needed to be kept of these aspects of production:
1) which narratives were on which original disks
2) which narratives were on the disks in final form
3) which narratives were transferred to which typesetting disks
4) which narratives were complete and proof-read on the typesetting disks
5) which narratives went with which characters
6) which narratives went with which exact image on the cards
7) which narratives had negatives made
8) how the narrative negatives had to be laid out to be consistent with the orientation of the image on the other side
Similar organizational feats were involved with the making of positives, of negatives and "tested negatives", of proofs, of borders, of the 12 stripping flats that went with each printed sheet, etc.

A second aspect of organization revolved around the fact that I was attempting to do this project within the production services available at R.I.T. This meant constant negotiation and renegotiation in making arrangements for use of equipment and services. It meant that all regular school needs for equipment and labor took priority over my project. Though, potentially, the opportunities created by the school of printing far exceeded any alternate arrangements I might have made, and indeed, made the project possible, it also left me subject to endless postponements and changes in arrangements. In short, it left me without many of the controls I would have had in a paid contractual arrangement.

My initial arrangements had included:
- the use of the light tables (when they were available) in Professor Arpag's Image Assembly Lab
- the generous services of Professor Arpag in making "spread and choke" masks through which card images and card borders would be shot
- use of the point-light source, vacuum table, and automatic film processing equipment in the Repro-Photo Lab (when available)
- occasional use, if I needed it, of one process camera in the same lab
- use of Prof. Keough's Apple Program software to type up the narratives,
- use of the graphic arts computers in the College of Fine and Applied Arts, (when available)
- the printing of the first 2-4 sheets of cards by the students of Cliff Frazier's summer printing course
- the printing of the remainder of the game flats within the framework of Frazier's fall/winter printing classes

Orchestrating these diverse (yet limited) extensions of goodwill, and operating a wide
range of equipment with minimal instruction (and no available guidance at the non-instructional hours I could work), was unquestionably difficult.

I had targeted myself to have all the negatives and separation negatives shot and assembled, ready to be exposed onto printing plates for Cliff's printing students in the summer of 1986. I expected to complete the rest for his fall quarter's printing class deadlines.

Jere Rentzl became involved in the project in the spring, and spent the time he could outside of his teaching responsibilities, testing and taming the complex new scanner. (Image 32 A, B) But despite his best efforts, the color separations could not be done in time for Cliff's summer students. So Jere took the initiative to make printing arrangements with the T. and E. Center at R.I.T., which was still open to cooperation in regard to Master's Degree projects. In the end, however, nothing was printed that summer due to numerous delays and alterations of plans within the Center. I, initially to stem the frustration of not having a printed product, and then, almost immediately, to take advantage of an exciting esthetic possibility, made cibachrome positive prints from the paired kodaliths and acetate color drawings. The color quality was very exciting to me. And I later made an extensive set of 11" x 14" cibas to include in the opening exhibit of my game. (Image # 33)

During the 86-87 school year Jere generously acted as mentor and consultant, and arranged with Harold Scharmberg, (then teaching presswork in the NTID lab) for the sample printing (mentioned earlier) to be done from 6 random dot card-images.

Rena Weiss, who also taught in this lab, showed me a little about the typesetting capacities in the lab and how to transfer the narratives from my disk to software suitable to the typesetting equipment in the shop. I was permitted to work there during certain hours which would not interfere with student needs.

The stories were first written out by hand, then typed into the apple computer disk (since I had relatively greater access to the Apple computers), and printed out so I could see the texts more clearly and begin to refine the writing. Later, when I had picked the type style, (sans-serif for clarity and compression), and figured out the
smallest reasonable point size appropriate to the card area, I could then tell by the character count on the Apple Program if the story would fit on a card, and if not, how much it would need to be reduced. Then I transferred it, when possible, or retyped it onto the typesetting disk (with appropriate commands for size, margins, etc.) and printed it out on the photographic unit attached to the typesetting computer, checked it for typographical errors, corrected the errors and reprinted it. (Image #34) This photographically produced type was used to make the film negatives for the printing plates.

The production of the border patterns was approached differently than the production of the pictures inside. First, sets of negatives and positives were made from either hand-drawn black and white patterns, or found black and white patterns. I did not start with a color image. The patterns were picked to clearly differentiate the character-identity of the four groups of cards. The colors, conceptually, were picked to complement the essential color range already used for the interior images. Technically, they were selected from a chart of various colors which could be produced from the four process colors. Using tint-screens to duplicate the percentages of each process color needed, I made color proofs for both the "negative" and positive areas of each pattern. (Image #35) When I felt satisfied that the colors would be workable with each character's images, I simply stripped up 14 duplicate negatives and positives (Image #36 A, B) (registered to fit each other) for each set of cards, and wrote the formula for the colors chosen, so that the printer would expose them accordingly on the plates.

For example:  "A" (positive) areas for artist's border,

100% magenta
30% yellow
20% black

"B" (negative) areas for artist's border,

50% cyan
10% yellow
30% black

Before printing, all the negatives, front and back, for the cards, characters, instructions, dice and gameboard, had to be mounted, in register, on the orange layout sheets, (or
"flats") which correspond to the printing plates. For the cards, which were fit tightly together on the printing sheet, two sets of layout sheets were used for each set of cards to allow more space for the taping of the images. (Image #37, 18A)

The last major hurdle came in the printing itself. The negatives were created on the assumption that there were still available two types of black ink, translucent black, process-color ink, and a denser, opaque, black ink. The use of the opaque black ink would have kept the photo image dominant over the color that loosely occupied the forms. The printer at the T. and E. Center informed us, with the plates about to go on the press, that opaque black ink was not available. So in order to maintain the balance of parts originally intended, the solution arrived at was to drastically cut down the density of the magenta, yellow and cyan printing inks on the press from the printing "norm", and to increase the density of the black ink as much as possible beyond the norm. If the job were not already so time-consuming, (and my dot-structure had been the more traditional half-tone), the black layer of ink could have been run through the press twice for added density.

My plans for the whole summer, (1987), were built around the week of printing time I had been assigned. I raced through decisions and preparations for the final two flats, (the characters, instructions and gameboard), in order to meet my deadline, leaving some minor imperfections that bothered me. In the end, a series of postponements in the T. and E. Center brought my printing time exactly into the 3-week period when I would be absent from Rochester! However, with the basic approach worked out, the color densities set, and Jere as my proxy in Rochester, I chose to have the last 5 sheets printed, even in my absence, rather than risk another major delay. The most significant problem on my return was the unequal runs of the sheets. A game, of course, could only exist with all of its parts, so the edition was only as big as the sheet that had been printed in the fewest number! Yet I found that from my precious and limited paper supply, some cards had almost twice the number of sheets printed as other cards.

The sheets then had to be cut and trimmed into the respective game-parts. The most critical cuts, (the game cards), were done courtesy of Werner Rebsamen in his lab. The less critical cuts, (game board, instructions, character-block), I did myself on
equipment in the NTID lab.

Perhaps it is significant that the aspect of this project I failed to address was the final packaging! It seemed the least of my problems until I had to deal with it! The cards, of course, had to be collated into complete sets for each character, (for each game), and, lacking a molded container or separate housing for each pack, I had to choose a way to keep them together in sets. I settled on an elastic gold cord available from a fabric store, that I cut in sections and tied around each character's cards.

The elasticity permitted the cards to be replaced in the ring of cord without effort. Although my fantasy has been to house the game in a standard board-game box (about 1 1/2" high, 10" wide, and 18" long), I discovered this shape box was not available in the Rochester area, and to have a box made to order would require a minimum order in the thousands! (My edition was about 225). I also had some hesitation about folding the gameboard after all the effort that went into designing it, and considered a packaging that would allow the gameboard to be rolled rather than creased. Ultimately this seemed impractical -- too difficult to store and to mail along with the other parts of the game which needed to remain flat. The immediate solution, for the games sold at the time of the show, was an open-ended plastic bag as close in size as I could find to the cut parts of the game, with a stencilled title ("59c LIFE") or a title made of self-sticking dye-cut letters, applied one at a time. I know that in order to respond to inquiries from libraries, museums or museum stores, the packaging must be a little more sturdy, clearly closable, and easily shipped. This is a problem I am exploring at the time of writing this thesis paper.

In closing, I would like to say that I would not have substituted any other project for my Master's Thesis; that I have learned a tremendous amount in the process, even if I have not been able to put it all into practice; and that for others similarly inclined, it is a very exciting area, but definitely not one for the impatient or the faint-of-heart.