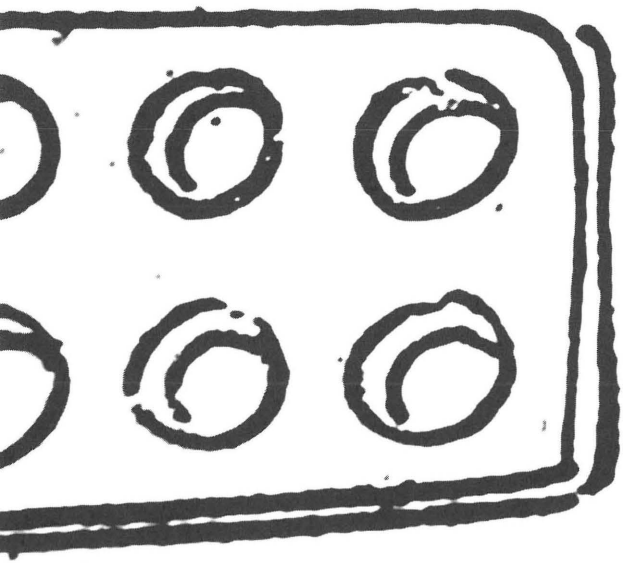
CONTENTS

AN ECCE REVER REAC

School of Design
Seoul National University
Seoul, Korea

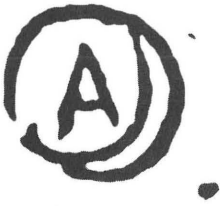
Visible Language 33.3
Kim, 196-235



MIN-SOO KIM

NTRI
SIBLE
TION

Yi Sang's Experimental Poetry in the 1930s and Its Meaning to Contemporary Design[1]



This article bridges east and west by introducing to the western design community the experimental poetry of a Korean avant-garde poet Yi Sang (pen name, Hae-Kyoung Kim, 1910-1937). His experimental poetry from the 1930s, his use of space-time perception and his design sensibilities all contribute to meaning in contemporary design. While many researchers in Korea have investigated his poetry, relatively little insight has been developed regarding his methods and goals for his poems. Trained as an architect, it is my assumption that his strange and often incomprehensible poems from the early 1930s should be interpreted not in the context of textual or literary theory as often supposed, but in the context of visual texts found in such fields as architecture, graphic design and typography. His poetry consists of persistent space-time conceptions as shown in the domain of modern visual arts. By decoding Yi Sang's logics on poetry, we may find how the underlying concept of modern design in the 1930s was encountered by a Korean poet. The 1930s are a legendary period when Korea began to absorb western modernism into its culture, even though it arrived indirectly through Japanese intervention. While this article investigates signs and their inner logic of Korean response to the aesthetic modernism of the 1930s, I argue that even though western modern culture forcefully affected Korean modernists, Yi Sang's creative mind moved beyond modernism and toward deconstruction.

BEYOND POETRY

Nearly six decades have passed since the Korean avant-garde poet, Yi Sang (pen name Hae-Kyoung Kim, 1910-1937) died. Recognized as a genius[2] and a modernist poet, who wrote experimental poetry in the early 1930s when Korea was under the rule of imperialist Japan, many literary scholars have agreed that his poetry coincided with the development of radical aesthetic conceptions and practices of Korean literary modernism of the 1930s. These expressed intellectual attitudes towards an aesthetic purity for poetry through language refinement as it responded to the emergence of urban daily life.[3] Thus the major research on Yi Sang's works have shed light mainly on literary meaning, style and its structure; sometimes on psychoanalytic aspects, when he broke down conventional usage of language, attempting to express "stream of consciousness" and address latent sexuality more effectively.

But these efforts are so limited that they often fail to afford plausible interpretations to Yi Sang's poetry. As a result, most of his early poems still remain incomprehensible. This unintelligibility is largely due to the complex nature and diversity of his talents and practices, which literary approaches have neglected. He is not a man to be confined only to the domain of poetry, but is a man of versatility: as an architect[4] or a graphic designer and typographer.[5] Without recognizing such a creative versatility, it is impossible to decipher his enigmatic work.

The purpose of this article is twofold: firstly, to uncover how Yi Sang's time-space conception or his design sensibilities were related to his experimental poetry. This essay proposes that his strange and apparently incomprehensible poems written in the early 1930s should be interpreted not merely in the context of literature, but also in the context of visual arts such as architecture, graphic design and typography. As we shall see in the following discussion, his poetry consists

of persistent time-space conceptions as shown in the domain of modern visual arts. Secondly, this article introduces Yi Sang's works to those outside Korea. By decoding his logic on poetry, we may figure out how the underlying concept of modern design in the 1930s was interpreted by a Korean artist. During this time, western modernism began to be absorbed into Korean culture, though it arrived indirectly through Japanese influence. While the influx of western modern culture has forcefully affected Korean modernists, Yi Sang's creative mind moved beyond its origin in modernism toward deconstruction.

There is profound evidence that Yi Sang made poems to be interpreted as

"the text of the **VISUAL ARTS**."

First, early in his career, his sensibilities were developed as a painter. (During high school, he learned western painting from Hee-Dong Ko, who practiced western style paintings for the first time in Korea.) As early as 1931, he was recognized in the *Korean Art Exhibition* for a self-portrait. He also made highly compressed illustrations for serials in newspapers and magazines (*figure* 1). Secondly, while attending the most rigorous polytechnic high school in Seoul, his ambitions shifted from painting to architecture. (This was a practical move as the only option to continue painting or drawing in the higher educational system at that time in Korea was within architecture.) After graduation, from 1931 to 1933, he became an architect and worked at the department of architecture of the Japanese government-general.

Thirdly, most of Yi Sang's experimental poems now classified by Korean literary scholars as incomprehensible were produced during his early period as an architect. They were published in the Japanese-language architectural journal, *Korea and Architecture* (*Chosen to Kenchiki*). It was during his career as an architect that most of his experimental work developing logics in poetry were established. Thus, "An

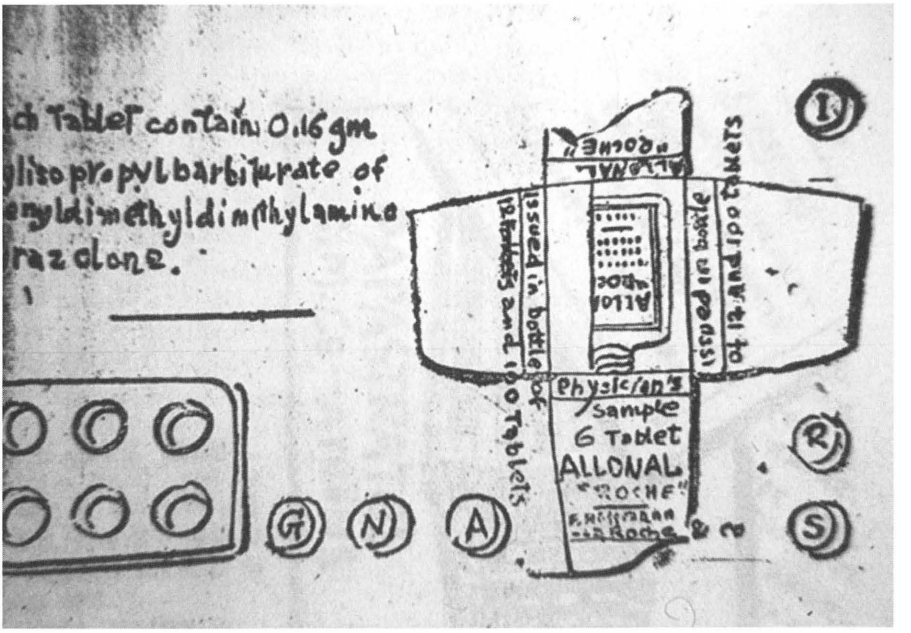


figure 1: An illustration drawn by Yi Sang, *Cho Kwang*, September, 1936.

Eccentric Reversible Reaction" (July, 1931), "Bird's-EyeView" (*Chogamdo*, August, 1931), "A Memorandum on Line" (from No. 1 to No.7) series, "A Plan for Three-Dimensional Angle" (*Samchagak Sulgaedo*, October, 1931) and "An Unlimited Hexahedron in Architecture" (*Kunchuk Muhan Yukmyeongakchel*, July, 1932) were not only published in *Korea and Architecture*, but also consisted of architectural lexicons in terms of their titles and contents. Furthermore, fifteen serialized Korean-language poems of "Crow's-Eye View" (*Ogamdo*), presented in a Korean newspaper, *Korea Central Daily News* (*Chosun Joongang Ilbo*) in 1934, were ones extracted from his notebooks,[6] made before his resignation as an architect of the Japanese government-general.

Fourthly, such a connection is palpable as he often mentioned dictums from the German Bauhaus leader, Laszlo Moholy-Nagy's book, *The New Vision*,[7] in the preface of *Korea and Architecture*, where he published his experimental poems. At that time, as an architect, he participated in the editing process of the journal. The fact that he absorbed the principle of "a dynamic-constructive system of forces"[8] from *The New Vision* is very important, in that it offers some clues to understand what he attempted in his poems. The following preface written in the August 1933 issue of *Korea and Architecture* illustrates how he grasped the idea:

Laszlo Moholy-Nagy –

We free ourselves from the thousand-year-old error of art, originating in Egypt, that only static rhythms can be its elements. We proclaim that for present-day perceptions, the most important elements of art are kinetic rhythms. Biological construction is a form of life phenomena, and it is the basic principle of all human and cosmic development.

The notion of kinetic rhythms in the preface above was originally developed by the Russian constructivists and is related to the futurists' notion of the "dynamic." From the futurist idea that the notion of repose – the static – should be broken down to put forward the dynamic as a principle of artistic creation. The "Realist Manifesto" of Gabo and Pevsner asserted that art must be guided by space and time, eliminating physical mass as a plastic element, while Moholy-Nagy proclaimed a manifesto of "The dynamic-constructive system of forces" in *The New Vision*. It meant that what must be developed was the dynamic construction (vital constructivism and force relations), in which the physical was to be employed merely as the carrier of forces, not the static physical construction of material and form relations. This is why Yi Sang broke down the unity of the linear structure of poems and viewed the linguistic mechanism as constructive elements. His poems are visual texts, experimenting with words in cooperation with diagrams and numerical charts.

Finally, based on the theoretical influences mentioned, Yi Sang actually transferred the idea of abstraction and the dynamic-constructive system of forces into graphic design. This was especially true when he designed covers for the architectural journal, *Korea and Architecture*, for which he was awarded both the first and the third place in its 1929 annual competition. The first place cover design showed an absolute surface treatment through abstraction (*figure* 2). Another cover embraced activation of space, constructed within forces actually at tension by a series of lines, which in turn were constructed within the space as active force (tension). He was eliminating any ornamental surface treatment and using physical mass as a plastic element. He emphasized dynamic construction in graphic representation. Both covers are significant in that no one has achieved similar effects until, at least, the 1960s in Korea. Now let us focus on what he actually did in his experimental poems and how they reveal meaning in contemporary design.

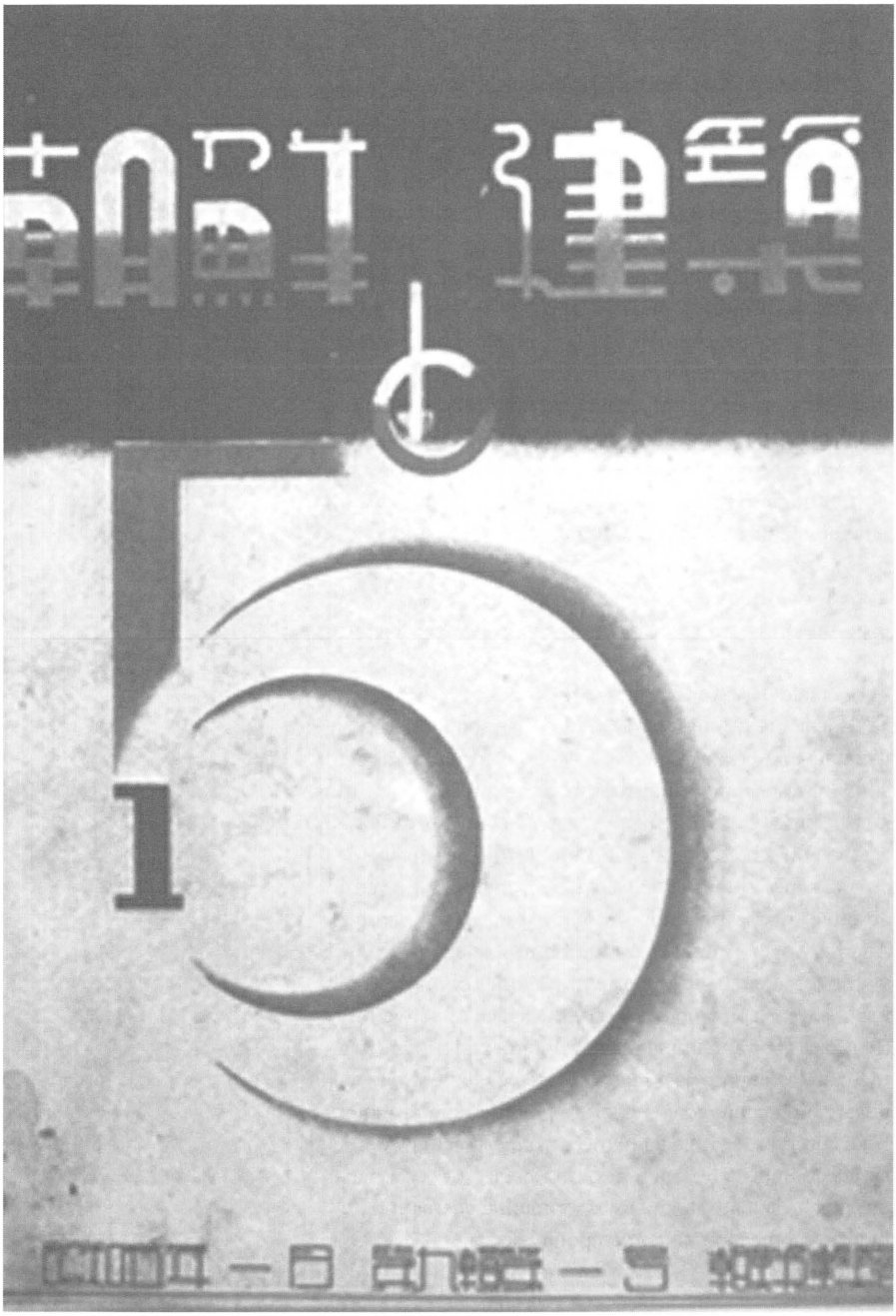


figure 2: A cover design awarded first place in the competition of *Korea and Architecture*, 1929.

INTERPRETING YI SANG'S EXPERIMENTAL POETRY

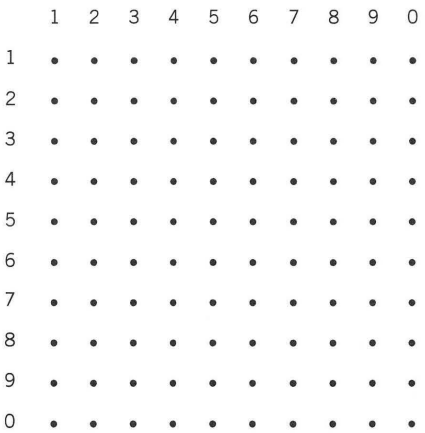
The major characteristics of Yi Sang's poetry lie in the pursuit of three different processes of dialectic, opposition and reunification within its form and structure. The first is opposition and reunification of image and word, the second is of letters and visual devices such as diagrams and numerical charts within the text and the third is of different streams of dynamic force created within the image itself.

The first approach, opposition and reunification of image and word, was initially brought forward in the poem, "A Memorandum on Line No. 1" from "A Plan for a Three-Dimensional Angle," released in an October 1931 issue of *Korea and Architecture*. The derivative concepts were explained only with literal language in poetry, like "An Eccentric Reversible Reaction" (*Korea and Architecture*, July 1931) and "A Memorandum on Line No. 4' (*Korea and Architecture*, October 1931). Let us uncover the meaning of "A Memorandum on Line No. 1"[9] (*figure* 3).

The overall structure of "A Memorandum on Line No. 1" is constructed by dots on X-Y coordinates numbered from 1 to 0, which is accompanied by verses that consist of words and phrases. The pictorial image created by numerals and dots at the beginning seems like plain coordinates of a hundred pillars for a schematic architectural construction, thereby suggesting a definately fixed structure within the axis X and Y. This is merely a concrete object revealing geometric spatial order, which neither require any literary explanation nor permit accidents within a definite space. However, such an order is gradually deconstructed by the following verses.

Verse 1, "the cosmos is of power by power," completely negates the suggested pictorial image: now it dissolves into an infinite space from its physical immovability in three-dimensional space. Then Yi Sang presents the verse 2, "People throw away numbers," as a precondition for the

A MEMORANDUM ON LINE NO. 1



1. (The cosmos is of power by power)
2. (People throw away numbers)
3. (Quietly make me a proton of an electron)

4. Spectol

5. axis x, axis y, axis z

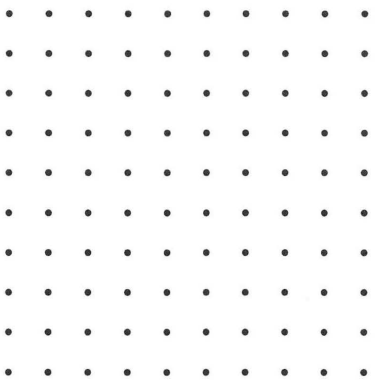
6. The control over velocity etc. for example, if the light does in fact travel at 300,000 km/sec it is not impossible for an invention of man to run away at 600,000 km/sec. Take that and multiply it millions and millions of times then a man can see the evidence of millions and millions years' prehistory. Do we call that the infinite breakdown? An atom is an atom is an atom. Does physiological metabolism mutate? An atom is not an atom is not an atom is not an atom. Is radiation a breakdown? People have to know the thing that can save eternal eternity is not life but light.

7. The smell of taste and the taste of smell

8. (The birth through the desperation of the three dimension)
9. (The birth through the desperation of movement)
10. (If the earth is an empty house the feudal days will yearn earnestly with tears)

figure 3: "A Memorandum on Line No. 1"
Korea and Architecture, October, 1931.

next deconstruction. The following figure shows a transformation of the image caused by discarding numerals from the coordinates.



Following the verse, the above figure leaves only the relationship between anonymous dots, like unsettled particles. One can see this as a result of some accident within absolute order. In other words, a negation of "fixed substantivity" by the coordinate, is related to the subsequent verse 3, "Quietly make me a proton of an electron," showing how the verse is related to the notion of matter and human existence: not only is it a negation of the Newtonian mechanical model of the universe which assumes material particles, the so-called "atom as the basic element of the universe," but in effect, also the deterministic ego-centrism of Cartesian philosophy.

Yi Sang was fully aware of quantum physics, which represented new ideas about existence in modern physics, replacing Newtonian-classical physics. At the turn of the century, physicists began to address the question of the ultimate nature of matter experimentally. They discovered several phenomena connected with the structure of atoms, which were indispensible to classical physics. They were able

to probe deeper and deeper into nature, uncovering one layer of matter after another in the search for its ultimate elements. Thus the existence of the atom stood at the start of a line of discoveries: of extremely small particles, including its constituents (the nuclei and electrons) and finally the components of the nucleus (the protons and neutrons) and many other "subatomic particles." In the 1920s, further discoveries by Niels Bohr, Werner Heisenberg and others revealed that particles were nothing like the solid objects classical physics had supposed: subatomic units of matter were very "abstract entities" and had dual aspects. Depending on how we look at them, they appear sometimes as "particles," sometimes as "waves;" and this dual nature is also exhibited by light which can take the form of electromagnetic waves or particles: "quantum theory."

This notion of quantum theory was obviously expressed in verse 3, "Quietly make me a proton of an electron." by which Yi Sang attempted a new self-declaration that expressed himself, not as a crystallization of "atomic being," but as a "quantum being" (with dual characters of particles and waves) that silently travel at the imperceptible speed of light. This verse suggests complete negation of the deterministic concept of self by Descartes. The modern concept of self derived from Descartes is, in its extreme, represented by reason, and here all philosophical objects are considered an establishment of existence of autonomous reasoning. This means that there is fundamental division between "I" and the world – the spirit/matter dualism: in Descartes' philosophical proposition of "I think, therefore I am" (*cogito ergo sum*), "I" points out that itself is a wholly conscious being and depicts an autonomous and isolated being.

Through juxtaposing opposite verses 4 and 5, Yi Sang ascertained that the single key to perceive quantum being can only be the "spectral apparatus" (Spectrol in verse 4) that arranges spectral effects of light in the order of wavelength, not the Euclidean geometry that has x, y, z coordinates (verse

5). Next, verse 6 has something to do with the principle of relativity which is a complement of the quantum theory. Indeed, soon after the formulation of the quantum physics, modern physicists found that incorporation of quantum theory and theory of relativity was necessary in order to fully explain nuclear phenomena. They realized that every description of natural phenomena involving velocities close to the speed of light needed to take account of the principles of relativity. This was because they found that protons, electrons and neutrons, which had replaced the previous nucleus and myriad of particles in the state of sub-atoms, moved so fast that their speed comes close to the speed of light. Einstein's theory of relativity brought forward an explanation about the "relative time and space" of the moving particle which had to be conceived as a dynamic pattern, a process involving the energy which manifested itself as the particles' mass. The theory of relativity tells us that time and space are not separated but correlated as a four-dimensional continuum and, if different observers move at a different speed in the same case, all cases can be considered to be discrepant. Here, all measurements carried out in time and space lose absolute significance. This new notion was well captured in Yi Sang's other poem, "A Memorandum on Line No. 5" (*Korea and Architecture*, October 1931) as follows:

When a man runs faster than light can he see the light? He can see it, he marries twice in the vacuum of age, Or is it three times? He runs faster than light... (omitted)

Therefore, if a man runs faster than light, as in verse 6, "prehistoric evidences" will be visible through transcendence of time and space. Thus he suggested that matter consists of something which is both a particle and a moving wave, through the verses "an atom is an atom is an atom" and "an atom is not an atom is not an atom..." Next, he

noted that "movement," driven by the light, forces the human into infinite time and space, undoing the absolute meaning of the self. In such a case, according to the theory of relativity, two events which are seen as occurring simultaneously by one observer may occur in different temporal sequences for other observers. This notion was dramatically captured in verse 7, "The smell of taste and the taste of smell," which means that all measurements involving time and space lose their absolute significance. Now he finds out that, as in verse 8, the ultimate destination of this breaking-down process is emptiness or nothingness by manifesting, "If the earth is an empty house the feudal days will yearn earnestly with tears."

At this stage, Yi Sang had to resist all sorts of prejudice concerning existing language, significance and subsistence. Because he realized that, at the deepest level, understanding matter was no longer derived from direct sensory experience, ordinary language, which had taken its images from the sensory world was no longer adequate to describe the new vision. So he had to abandon more and more of the images and concepts of ordinary language.

This self-awareness was realized in the second step of Yi Sang's poetry. He began to see words as holding formative visual elements, rather than things that have literal significance, and proceeded to replace the literal language with the developing visual language. Among fifteen serialized Korean-language poems of "Crow's-Eye View" (*Ogamdo*), presented in a Korean newspaper *Korea Central Daily News* in 1934, "Poem No. I" (*Shi che i ho*), "Poem No. II" (*Shi che i ho*) and "Poem No. III" (*Shi che sam ho*) are good examples in this context. These poems, unlike those which previously employed literal language to explain diagrams as in "A Memorandum on Line No. 1," now function as images themselves. (For instance, see "Poem No. I of "Crow's-Eye View"[10] in *figure* 4.)

CROW'S EYE VIEW: POEM NO. 1

1 Thirteen kids make a mad dash down the street.
(if the road is a dead-end alley, that's appropriate.)

2 The first kid says, "It's scary!"
And the second kid says, "It's scary!"
And the third kid says, "It's scary!"
And the fourth kid says, "It's scary!"
And the fifth kid says, "It's scary!"
And the sixth kid says, "It's scary!"
And the seventh kid says, "It's scary!"
And the eighth kid says, "It's scary!"
And the ninth kid says, "It's scary!"
And the tenth kid says, "It's scary!"

3 And the eleventh kid says, "It's scary!"
And the twelfth kid says, "It's scary!"
And the thirteenth kid says, "It's scary!"
3—1 Among the thirteen kids gathered there are only scary kid and scared kids
(Actually, it was better that they were there for no other reason.)

4—1 If one among these kids is a scary kid, that's o.k. too.
If two among these kids are scary kids, that's o.k. too.
4—2 If two among these kids are scared kids, that's o.k. too.
If one among these kids is a scared kid, that's o.k. too.

5 (Even if the alley is a through-way, that's appropriate.)
If thirteen kids don't make a mad dash down the street, that's o.k. too.

figure 4: "Crow's-Eye View: Poem No. 1"
Korea Central Daily News, 1934.

In verse 1, the phrase of "...make a mad dash down the street" and that of "a dead-end alley" are in antagonism, not only in terms of structure, but also of significance, which form a further oppositional set with the final verse 5. For example, "a dead-end alley/a through-way alley" and "...make a mad dash.../...don't make a mad dash..." correspond to the basic factors of opposition. Stated in verse 2 is the scared kids from "the first kid" to "the thirteenth kid," and in a separated verse 3 there are three kids from "the eleventh kid" to "the thirteenth kid." *Figure* 5 shows such a relationship in diagrammatic view. What can be brought to understanding through the figure is that Yi Sang's fundamental reason for the setup of the thirteen kids was to have an ideal array with respect to image. From the first kid to the tenth kid, ten kids are taken as a diagrammatically bigger unit of 1, and the rest of "the eleventh kid to the thirteenth kid" are considered as a proportional unit to 1. In summary, this is a similar method employed in the equation "1+3 or 3+1" from "A Memorandum on Line No.2" (*see figure* 6) while a diagram from "A Memorandum on Line No. 2," shows a series of oppositional units produced by 1 and 3 (*see figure* 7).

Such a diagrammatic approach was possible, because he was well aware of the basic principles of architectural proportion by virtue of knowledge of Euclidean geometry. Since classical Greek architecture, space separation commonly used in architectural proportion derived from the fact that the consecutive proportional length of a diagonal line to a side from a square is 1: $\sqrt{3}$. Evidence of this fact is that the kids from the first to the tenth were positioned in verse 2, while three kids from the eleventh to the thirteenth were separated in verse 3.

As mentioned above, the image of nuclear fission in "Poem No. I" is more intensified in the literally composed "Poem No. II" and "Poem No. III." Especially in the case of "Poem No. II," the visible divisions achieved by typographic

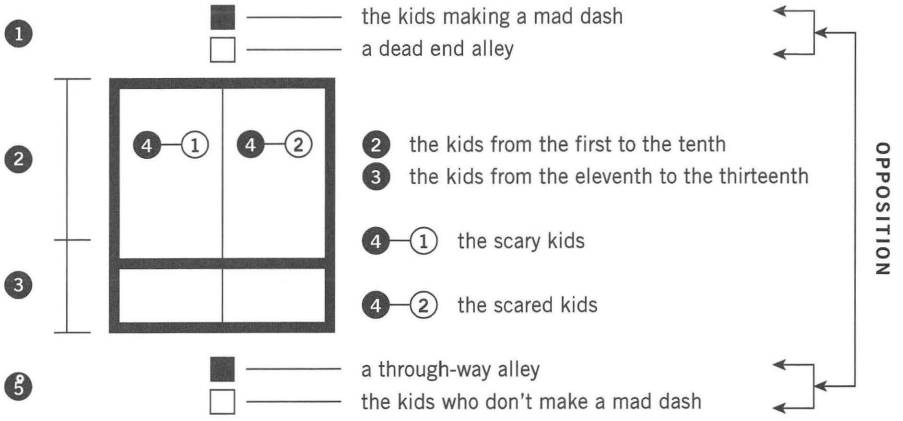


figure 5: A diagrammatic view of "Poem No. I."

A MEMORANDUM ON LINE NO. 2

1 + 3
3 + 1
3 + 1 1 + 3
1 + 3 3 + 1
1 + 3 1 + 3
3 + 1 3 + 1
3 + 1
1 + 3

point A on a line
point B on a line
point C on a line

A + B + C = A
A + B + C = B
A + B + C = C

intersection A of two lines
intersection B of two lines
intersection C of two lines

3 + 1
1 + 3
1 + 3 3 + 1
3 + 1 1 + 3
3 + 1 3 + 1
1 + 3 1 + 3
1 + 3
3 + 1

(...omitted)

figure 6: "A Memorandum on Line No. 2," *Korea and Architecture*, October, 1931.

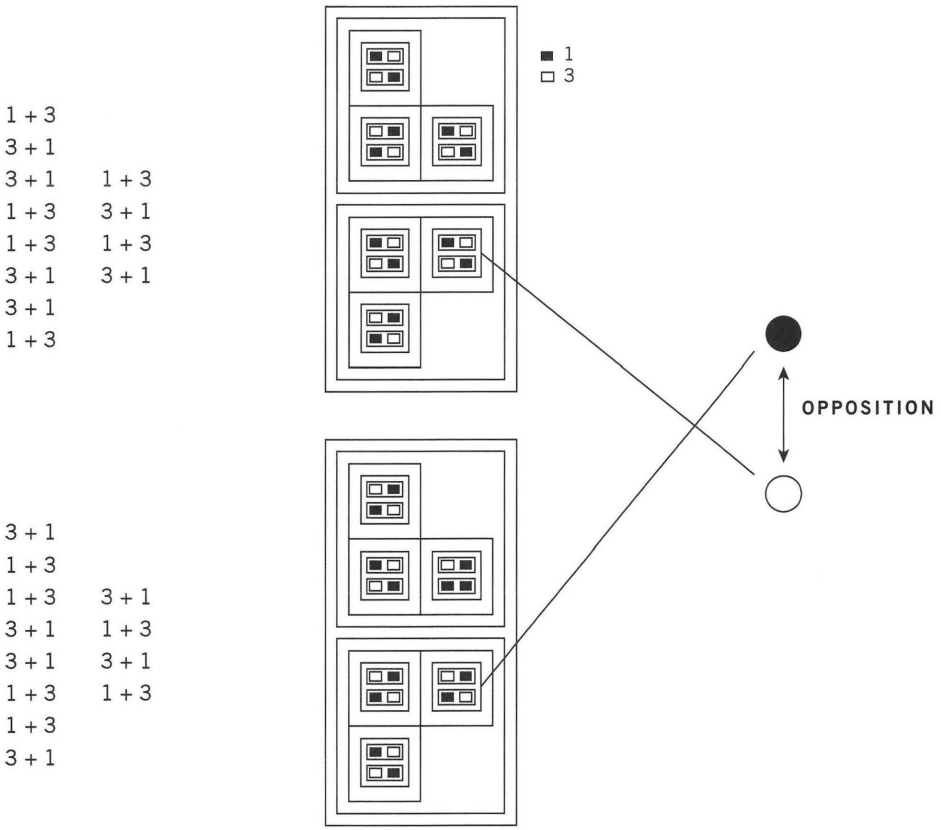


figure 7: A diagram showing a series of oppositional units in "A Memorandum on Line No. 2."

spacing were removed to adopt an endless repetitive structure by employing automatic descriptive technique (so-called automatism) of surrealism as follows:

POEM NO. II [11]

when/my/father/dozes/off/beside/me/i/become/my/father/and/ also/i/become/my/father's/father/and/even/so/while/my/father/like/my/father/is/just/my/father/why/do/i/repeatedly/my/father's/father's/father's/.../when/i/become/a/father/why/must/i/leap/over/my/father/and/why/am/i/that/which/while/finally/playing/all/at/once/my/and/my/father's/and/my/father's/and/my/father's/father's/ father's/roles/must/live?

As a result, we can now suppose that poetry of this kind was devised to convert visual images into a diagrammatical composition of literal language. Also, these are in line with the content of "A Memorandum on Line No. 1," which signified continuous breaking down of absolute substances. Certain scholars argue that Yi Sang's repetitive use of synonyms by means of "~'s~'s/~of~of" in the poems written in Japanese was meant to mimic Japanese dadaists like Kitasono Katue in the 1920s. However, this is an absolutely superficial and erroneous over-simplification that merely compares the similarities in the literary style of European and Japanese dadaists. Rather, it could be said that while the avowed Japanese dadaists only imitated their Western counterpart, Yi Sang reached the apex of dadaism by his own original means.

For example, European dadaists laid emphasis upon the "law of innumerable construction" as their most valued target of pursuit. Originally, dada artists objected to standardization through integration of the anarchist attitude and organic posture. For this, dada poets investigated both "illogical chance composition" exploring semantic disorder and "logical and extra-logical compositions" examining

various kinds of semantic coherence. The former approach was typically manifested when a dadaist, Tristan Tzara, proclaimed in his "Recipe for a Dadaist Poem," which recommends:

> Take a newspaper. Take a pair of scissors. Choose an article as long as you are planning to make your poem. Cut out the article. Then cut out each of the words that make up this article and put them in a bag. Shake it gently. Then take out the pieces one after the other. Copy conscientiously in the order in which they left the bag.[12]

This recipe functioned not only as an experiment for creating "illogical chance poetry," but also formed a consciously bizarre anti-recipe, demonstrating the limitations of dogmatic literary conventions. Collaborating with Richard Huelsenback and Marcel Janco, Tzara also created the "simultaneous poem" – a form of "chance poetry" composed of randomly juxtaposed texts in different languages which the three authors read simultaneously accompanied by various noises.

The latter approach, "logical and extra-logical compositions," was typical in Kurt Schwitters' "Logically Consistent Poetry."[13] The nature of absolutely logical poetry suggests that such poetry must be made of "unequivocal" materials: words. As a unique figure in dada circles, Schwitters rejected his former aesthetics of imitations in favor of an aesthetics of the material. This is one of the reasons why he founded his *Merz* art, which meant "the adjustment of one element to another." He used cloth, cardboard, machine parts, iron, wire, old pieces of furniture, rope, newspapers and rubbish of any kind, adjusted these different materials to each other, and fixed their relationship by nailing, gluing and pasting them together to form a relief-collage. It was intended to dissolve the cultural norms according to which materials have their logical purpose.

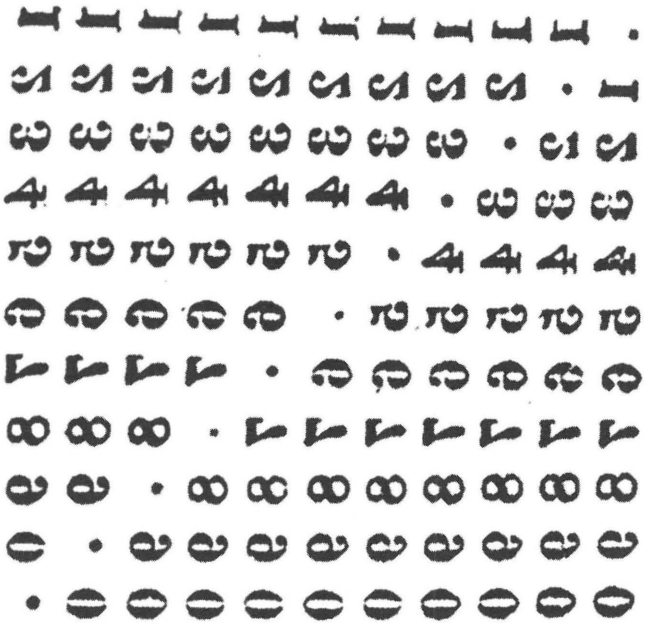
Despite their different approaches, there is no doubt that dadaists in general intended to search for "a rule for nothingness." In 1919, Tzara suggested in his Note on Poetry that a poet should "learn to recognize and gather the traces of force... engraved on crystals... [and] in clouds... Give each element its integrity, its autonomy, conditions necessary for the creation of new constellations."[14] In the same way, Schwitters identified dada art as purposeless, but as a balance attained through the evaluation of its parts. In much the same way, Hans Arp called for an art which would be "anonymous... like the clouds;" which would offer "a balance between heaven and hell; and which would not wish to copy nature... [but] produce like a plant."[15] Therefore, in an attempt to fulfill their ideals, dadaists all seem to have advocated a balanced, organic poetry following its artistic ideals, while accepting that a poetry giving "autonomy" to all of its elements could not evince the impersonal and "purposeless" anonymity of dada's plastic works. As Arp concluded, dadaist poetry should have to allow "a nose to appear in a square," which means that there should be a compromise between formal perfection (a square) and expressive freedom (a nose). In reality, however, it is important to note that the dada poets' works ultimately failed to exemplify this organic ideal. In other words, dadaist poetry was not able to "gather the traces of force...engraved on crystals... [and] in clouds and failed to create a balance between heaven and hell," and grow "like a plant" – no nose in a square. Dada poets only produced two opposite modes of rule for nothingness: the rule of absolute illogical chance as seen in Tzara and others; and the rule of absolute logical order as seen in Schwitters.

However, as I already mentioned, in Yi Sang's poetry we can find that continuous autonomy is produced through a concrete structure in conflict, and accidental factors hidden by clouds are sprung out, which eventually resolve to an unlimited possibility. His poetry, although composed

of geometric diagrammatic images, was not itself an absolute one. His poetry deconstructed the square by an exquisite nose, clearly a process of growing organically like a plant. Such achievement had no exact precedent. His poetry predicted the true image of "concrete poetry:" that is, ideogrammatic poetry practiced by a group of Brazilian poets in the 1950s, which allowed adoption of dynamic structure with graphic space as a structural medium as well as a multiplicity of concomitant movements.

The best example of such features can be found from the confrontation of abstraction and the counteraction within the structure of the pure graphic image, which is the third characteristic of Yi Sang's poetry. "Poem No. IV" from "Crow's-Eye View" (*see figure* 8) put stress merely on the visual form consisting of numbers and dots, whose basic motives for the image had been originated from "A Memorandum on Line No. 1." It was based on an upside down image of "Diagnosis 0:1," from "An Unlimited Hexahedron in Architecture" (*Kunchuk Muhan Yukmyeongakche*) published in *Korea and Architecture*, July 1932 (*see figure* 9). Here, Yi Sang seems to pursue methods of integrating the previous experiments by virtue of pure graphic image without the assistance of literal language. At the outset, the visual image from a finite coordinate in "A Memorandum on Line No. 1" had been itself a typical model of absolute substance, existence and space, which was subject to negation or deconstruction. In other words, it was an image intended to represent substance and existence, Newtonian space of Euclidean geometry and separated time concept, and Cartesian concept of absolute self. And the image was dissolved by the successive verses in words. But here in "Poem No. IV," he abstracted all the concepts manifested from "A Memorandum on Line No. 1." The fact that the interim experiment headed towards these procedures had already appeared in "Diagnosis 0:1" reveals a possibility of tracing his attempts to hold original thoughts only with

Poem No. IV
A Problem Concerning the patient's condition



Diagnosis 0:1
10.26.1931
As above Physician-in-Charge
Yi Sang

figure 8: "Crow's-Eye View: Poem No. IV," *Korea Central Daily News*, 1934.

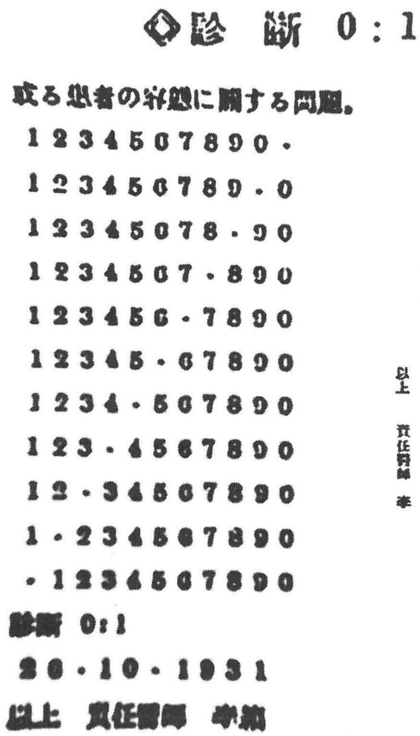


figure 9: "Diagnosis 0:1" (left) and "Poem No. IV" (right).

the graphic language and not the literary language. By counter-tracing his flow of thought manifested in "Diagnosis 0:1," we can find answers to the meaning of "Poem No. IV."

In "Diagnosis 0:1," it seems that Yi Sang imagined dots moving in space once fixed by numerical coordinates of "A Memorandum on Line No. 1." He might have considered an image of numberless dots as his starting point. Then he replaced dots of the "infinite coordinates" by numbers 1, 2, 3... 9, 0. His ultimate experiment was to set "1" and "0" as the basic factors of opposition and bring about spatial changes generated by dots ("•"). It is a very complicated relative form having an opposing structure and a vibrating system in terms of image and content. The overall shape of the poem is equipped with at least three modes of opposing structures (*see figure* 10).

Now consider what is taking place within the inner structure. Firstly, the disposition of dots in the space of infinite coordinates assumed in "A Memorandum on Line No. 1" has generated a new space in conjugation with many different combinatorial methods. At first, "0" is placed in newly created spaces by dots in the infinite coordinates, with the exclusion of the first row, and dots continuously disrupt the combination of numbers of each row. These disruptions successfully create new combinations in each row. For instance, the original combination of ten numbers from 1 to 0 proceeds to the alteration into ten types of combination formed by nine numbers with the help of dots until the next one is reached, and finally restores the altered combination to the original one of 1 to 0. This is easily explicable with a diagram (*see figure* 11).

Analyzing *figure* 11, the initial combination constructed by ten numbers from 1 to 0 is disrupted into ten different combinations by a single dot within the structure, and again, accurately restored to a unity of ten numbers. The direction of motion leads us to the same result in the

opposite case as stated in a phrase of "An Eccentric Reversible Reaction:" "two types of beings, affection by time," which was the very first poem Yi Sang published in *Korea and Architecture*.

In conclusion, "Diagnosis 0:1" was a visual poem that concerned two types of beings affected by time, namely "0" (10) and "1" and that which illustrated how one combination (1), confirmed by 10 basic elements (0), is re-disrupted into ten (0) combinations by a single dot (1). We must notice the fact that number "0" and "1" have nothing to do with literary allegory. They themselves have profound philosophical significance. Up until now, scholars have brought forward various explanations on what "0:1" really means: in its extreme, it is considered a sexual denotation of female and male genitals, based on the sheer literal shape of a hole and a stick; or sometimes as an opposition of emptiness and existence. These interpretations, however, only penetrate the literary significance that number carries in literary imagination, and no speculation was made on the role and interaction of 0 and 1 as an individual being in a whole structure. In summary, "0:1" draws the flow of dynamic energy between two types of endlessly altering, inseparable eternal beings, which reminds us of the state of the "Tao"of Taoism and the "Zen" of Buddhism.

Next, it seems that Yi Sang used subtitle, "A problem concerning the patient's condition," as a carrier to transfer such a philosophical notion into rather conventional literary form. Given that he had originally derived the basic elements of formative images from "A Memorandum on Line No. 1," it is likely that he added the last verse, "Diagnosis 0:1" and its poetic signature, "As above Physician-in-charge Yi Sang," after his plastic experimentation completed. What he, as a "physician-in-charge," suggested after the diagnosis of the patient is obvious: the being cannot be isolated from the observer; rather it always alters in relation to time and space; so the patient we consider is in no way a patient; or

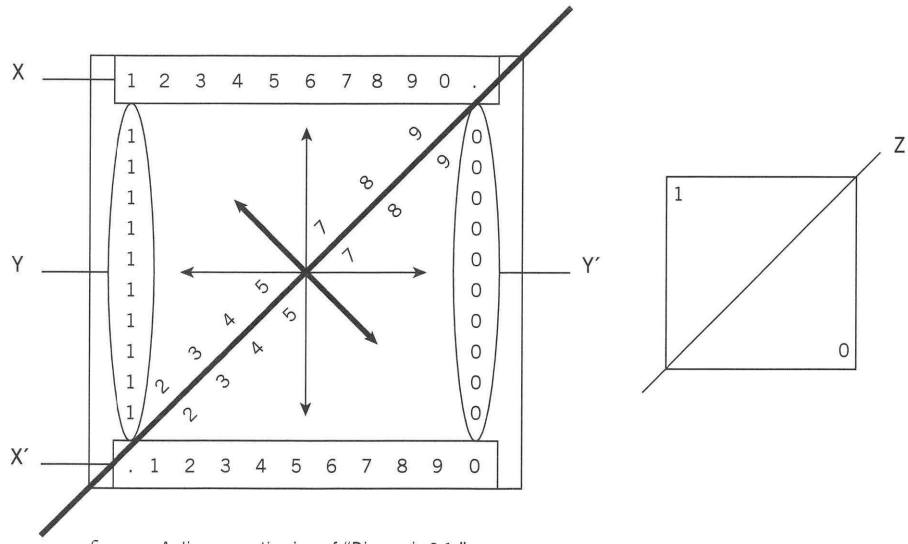


figure 10: A diagrammatic view of "Diagnosis 0:1."

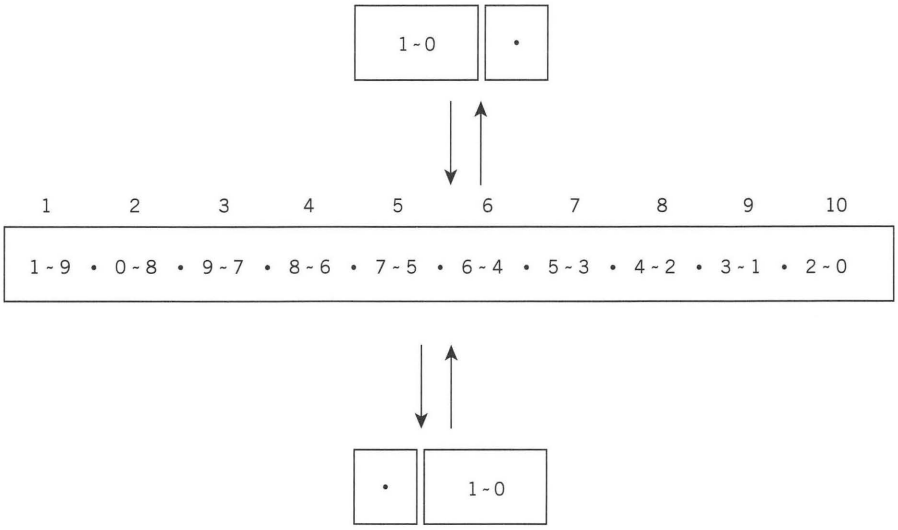


figure 11: A diagram showing ten different combinations and the direction of internal disruption in "Diagnosis 0:1."

the normal and the abnormal is dependent upon where the diagnostician stands.

However, it seems that Yi Sang might have felt dissatisfaction at the image projected in the final stage of laying down subtitle, diagnosis and signature. This is because, the final image of the poem "Diagnosis 0:1" might have seemed much too "normal" to him. Therefore, in an attempt to emphasize the patient's condition, he felt the need of some visual treatment. He upturned the number arrays of the poem in "Poem No. IV" of "Crow's-Eye View," which produced a great success. He not only visualized the concept of negation, but also integrated the movement toward infinite time and space and the disruption of absolute self.

THE REVOLUTIONARY NATURE OF YI SANG'S POETRY

The achievement of "Poem No. IV" is that, by potential movement of its dynamic structure, it permits meaningful confusion of an exquisite "nose" within the absolute order of a "square." This special feature of Yi Sang's poetry not only attained what dada poets were unable to grasp, but also can be traced back to the creators of modern concrete poetry organized by adoption of dadaism after the 1950s.

Concrete poetry succeeded in the visual investigation of nonlinear dada poetry. However, concrete poetry, unlike the autonomy that dadaists resigned themselves to balancing their conflicting desires for formal perfection, accentuated "togetherness of words." It utilized "graphic space" as a structural agent. In concrete poetry, words are not used primarily as an intentional carrier of meaning, but served as an aesthetic communication scheme and shared quality with an ideogrammatic graphic. As such, by adopting the pure visual "impression" derived by togetherness of words, concrete poetry carries the figure that converts the phrase into significance in terms of the characteristics of its montage image.

The best example of a successful montage is Seiichi Niikuni's "River/Sandbank," in 1974, which bears similarity with Yi Sang's "Poem No. IV." (*see figure* 12). Niikuni's poetry was composed from accurate and conscious visual observation unattained by dada poet's noisy "simultaneous poem" or "sound poem." It sentimentally visualized the features of a flowing river over a "delta" by means of placing "river" on the left triangle over "sandbank" on the lower right triangle. At this stage, we can discover the special features and radical nature of Yi Sang's "Poem No. IV."

It not only materializes all the visual elements possessed by concrete poetry from forty years ago, but also illustrates his transcendence of dadaists and modern concrete poets. As shown in the above discussion, he proved the very essence of the "dialectics of negation," which was capable of unifying both extreme ends of absolute chance and absolute order. Dada poets never hoped to attain it; they worked only in isolated extreme dimensions, despite their original intention to create a balance between them. This was finally realized in "Poem No. IV," generating "dynamic internal movement." On the other hand, we can just see the referential significance from the examples of concrete poetry. In Niikuni's "River/Sandbank," verbal words afford the movement in the slanted side of the lower right triangle. However, no direct verbal referents exist in "Poem No. IV," except its literary expressions of subtitle, diagnosis and signature. Only the relationship among the "abstract beings" – numbers and dots – exist.

In spite of all this, what is the reason for the amazing latent capacity of the new magnificent meanings derived from the abstract being? This could be attributed to the power inherent in the abstract form. But it is important to note that the abstract form Yi Sang used was not "the form of being" generally adopted by conventional abstract art. His abstract form was "the form of becoming" delivered by the flow of an ever-transforming energy – light – which he desperately desired. In other words, it was the possession

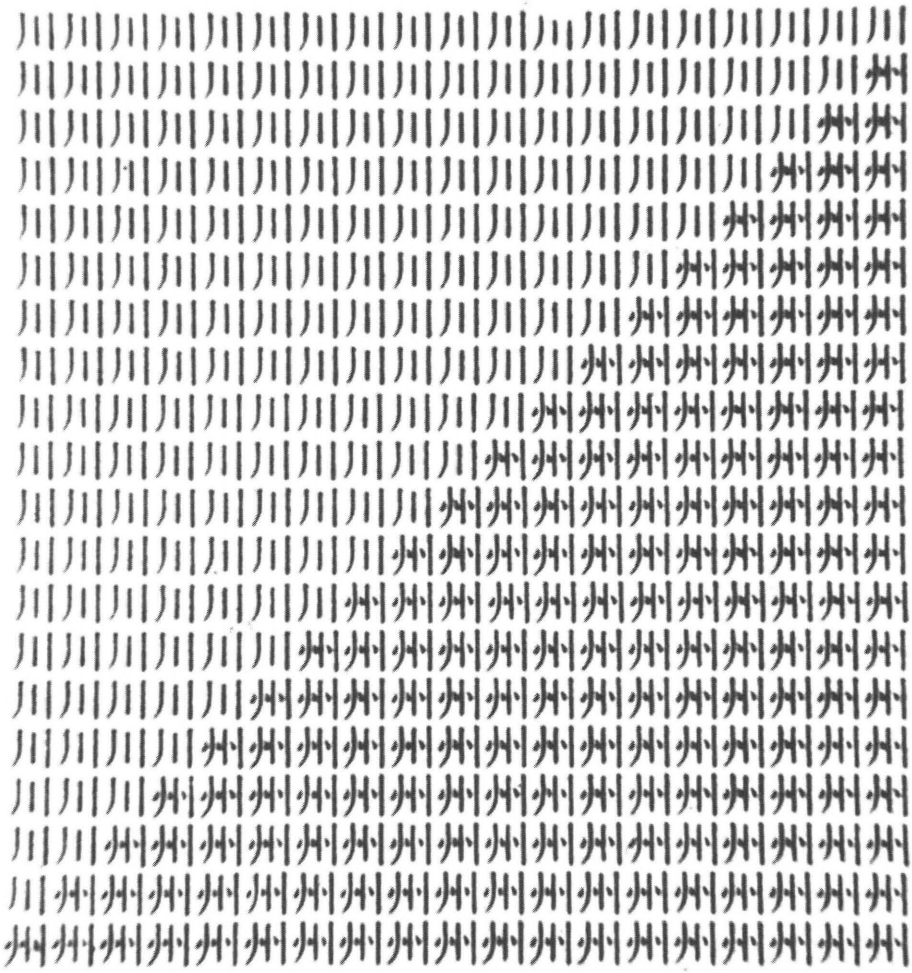


figure 12: Seiichi Niikuni's poem, "River/Sandbank," 1974.

of such power that permitted no fixed abstraction. At the same time, it had a power of self-explanation. Such revolutionary nature has never before existed in any form of art and design until deconstructionist design theory and its actual practice became evident in the contemporary domain of visual arts.

Today, the ultimate goal of modern design represented by deconstructionist architecture is taking place through dissociation of the architectural "telos" on structure and function. Deconstruction provides the frame in which it is possible to establish a distance from what has hitherto dominated architectural thinking. It allows for the unintended, in the sense of giving a place to that which cannot be predicted; a search no longer dominated by teleology. Architecture no longer organizes space as a function or in view of economic or techno-utilitarian norms. Of course, these norms are taken into consideration in deconstructionist architecture, but they find themselves subordinated and re-inscribed such that they no longer command the final word. For this, deconstructionist architects utilize various strategic concepts such as decentering, dissociation, disjunction, dislocation, incongruity, discrepancy and discontinuity.

At the outset, deconstruction was launched as a philosophical idea that, as the French philosopher Jacques Derrida first developed, assumed that language has the ability to stir up the position of power that is present within the text. It originated from his claim that language cannot function as a sign without being considered as the relationship with other presences, showing that the text never exactly means what it says or says what it means.[16] It is precisely this assumption that Derrida set out to subvert by insisting on the non-self-identical nature of the linguistic sign, its involvement in an unlimited signifying process (or what he named différance) which cannot be arrested by any such limit.

Différance is a kind of strategic neologism compounded by two verbs "to differ" and "to defer." In brief, what it

signifies is the fact that meaning can never be accounted for in terms of punctual self-presence; that language is not only – as Saussure argued – a "differential" structure of contrasts and relationships "without positive terms," but also that meaning is endlessly deferred along the chain of linguistic substitutions and displacements that occur whenever we seek to define what a given term signifies in context.[17] In a sense, those "aesthetics of absence" in the visual arts and literature may be portrayed as a style of anti-essentialism or anarchic nihilism which rejects any affirmation of texts, visual or otherwise. However, it implies that the human being himself is assumed to have individually different meaning and relative subjectivity, and that there exists the omnipresence of figural language in the texts. The message of "Poem No. IV" lies here. Its overall structure of grid and of numbers and dots leaves opportunities for chance, formal invention, dynamic transformation. This architectonic power of "Poem No. IV" reminds us of the deconstructionist architect Bernard Tschumi's plan for the "Parc de la Villette" built in the 1980s (*see figure* 13). It has over thirty fire-engine red constructions of enameled steel, located every 120 meters on a grid. Named "folies," those structures deconstruct the semantics of architecture, but maintain the omnipresence of figural language in an architectural text (structure) (*see figure* 14).

Coincidentally, Yi Sang captured this power of omnipresence in the 1930s. However, it was too early to understand and accept his revolutionary scheme at that time. In this sense, "Poem No. IV" might be a diagnosis on the limited eyes of the people who blamed him for insanity, as serialized poems of "Crow's-Eye View" were being released. When he ceased his high level intellectual experiments and was forced to use plain language in the style of a novel, it must have been the surrounding ignorant eyes that led him to mental imprisonment – more tragic than the colonization of Korea by Japanese imperialists.

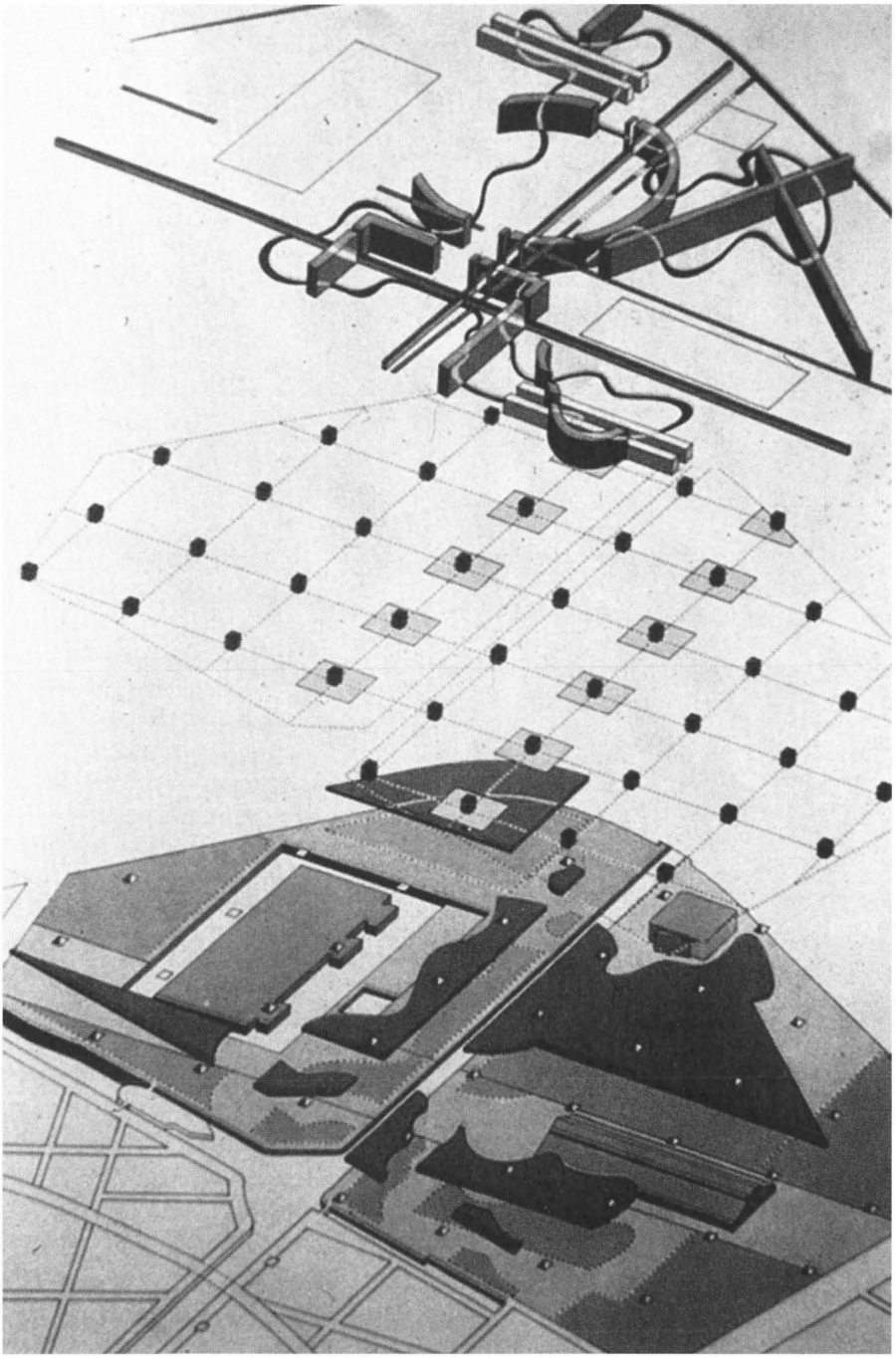


figure 13: Bernard Tschumi's architectural plan for the Parc de la Villette: superimposition of lines, points and surfaces, 1985.

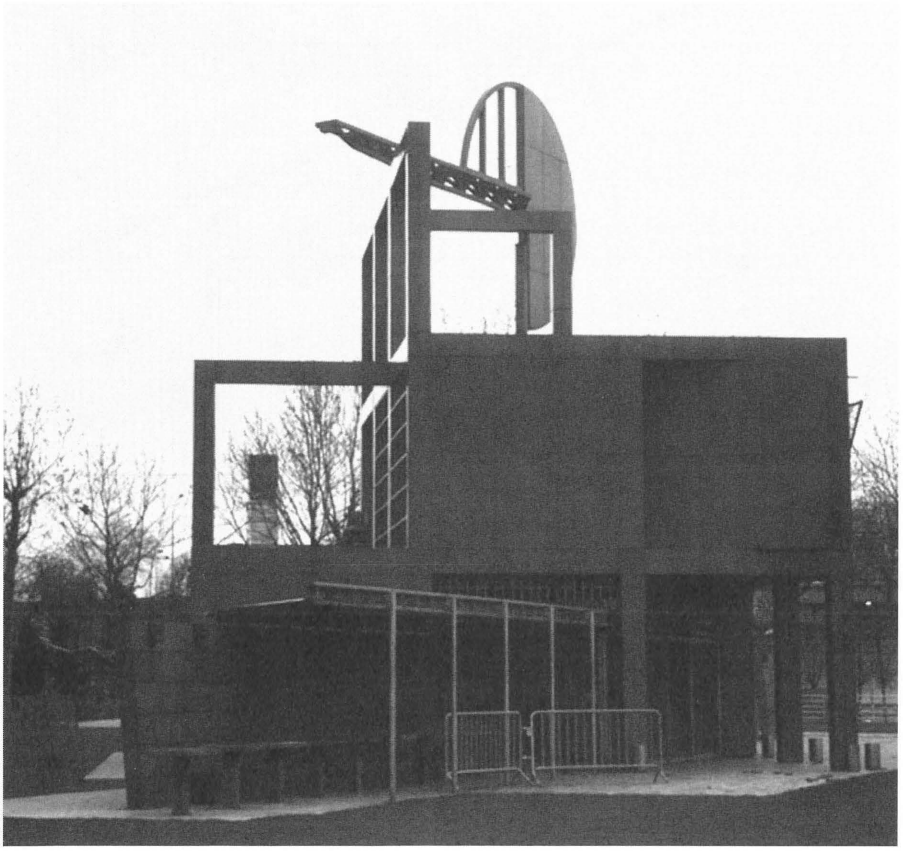


figure 14: An example of "folies" at the
Parc de la Villette by Bernard Tschumi, 1985.

In conclusion, Yi Sang's eccentric poetry was the fruit of his intellectual experiment that dug deep into human existence or self with respect to the new world that modern physics had revealed at the beginning of the twentieth century. His works transcended western dada's anti-tradition and, furthermore, even transcended modern concrete poetry. In addition, pushing the limits of the aesthetics of modernism, his experimental poetry was the powerful text of visual arts that carried visual space and time toward deconstruction. Understanding his poetic vision will stimulate us to re-examine our knowledge of art and design as the twentieth century closes.

Dr. Min-Soo Kim is an assistant professor of design theory and criticism at Seoul National University. He is director of the Design Culture Laboratory (DCL) in Seoul and an editor of *The Journal of Design Culture and Criticism*, first published in autumn of 1999 and the first Korean journal of cultural theory and criticism on design. Dr. Kim serves as a jury member of The Award of Design Criticism, organized by The Institute of Architectural Criticism in Seoul and is a board member of the Korean Society for Visual Culture. He has published two major critical books for Korean readers: *Criticism on Modern Design: Understanding Postmodernism and Deconstruction* (1994) and *A Cultural Navigation on the 21st Century's Design: Dialectics of Design, Culture, and Symbol* (1997).

ENDNOTES

1 "An Eccentric Reversible Reaction" is the title of Yi Sang's first poem published in the July 1931 issue of the Japanese-language architectural journal, *Korea and Architecture*. The translation presented here is my own.

2 Yi Sang often called himself a genius. His short story, "Wings" (*Nalgae*) originally published in 1936, reveals such self-consciousness as follows: "Do you know about the genius who ended up a stuffed animal? I'm cheerful. At times like this, even love is cheerful. Only when my body flutters with fatigue is my mind as clear as a silver coin. When nicotine is absorbed into my worm-infested guts, a blank sheet of paper is customarily prepared in my head. On that blank sheet I arrange wit and paradox, like stones on a *paduk* (go) board. It is a detestable disease of the common sense," quoted from the translation by Em, H. Henry. 1995. "Yi Sang's Wings Read as an Anti-Colonial Allegory." *Muae* 1, 105.

3 Kim, Yun-Shik. 1982. "Aspect of Modernism Poetry Movement." *Hankuk Hyundaeshi Ron Bipan* (Criticism on the Theory of Korean Modern Poetry). Seoul: Iljisa Press; Suh, Jun-Seob. 1988. *Hankuk Modernism Munhak Yeongu (A Study of Korean Modernism Literary)*. Seoul: Iljisa Press.

4 Kim, Jung-Dong. 1982. "An Unspreaded Yi Sang's Wings: Dream toward Architect." *Madang*, January , 185-193. This essay is helpful to catch a glimpse of Yi Sang's biographic sketch toward architect.

5 Recently a brilliant research on Yi Sang's poetry has been initiated by Sang-Soo Ahn. He examined the poetry of Yi Sang from a typographic perspective for the first time. He believes that Yi Sang should be considered the first Korean to undertake typographic experimentation based on the following categories of practice: 1. disregard for text spacing; 2. elimination of punctuation; 3. symmetrical structure; 4. reversal of text; 5. directional play of numbers; 6. pictorialization of lettering; 7. linguistic collage using signs and dingbats; 8. dot-picture compositions; 9. manipulation of typeface and type size; 10. diagrammatic mode of thought. Ahn, Sang-Soo. 1995. A Typographic Study of Yi Sang's Poetry. Seoul: Hanyang University (Unpublished Ph.D dissertation).

6 Yi Sang initially planned to publish a series of thirty "Crow's-Eye View" poems in the newspaper. But only half of the poems were released, due to strong objections from both the newspaper's staff and the readers. A Korean literary critic, Yun-Shik Kim, explained that Yi Sang had planned to extract thirty poems out of 2,000 poems from his working notes written in 1932.
Kim, Yun Shik. 1992. *Theory of Korean Modern Literature and Thought (Hankuk Hyundae Munhak Sasangsa Ron)*. Seoul: Iljisa, 22.

7 Early in 1928, Laszlo Moholy-Nagy wrote *Von Materal zu Architektur* (München: Albert Langen Verlag), which was based on his educational experience and lectures at the Bauhaus between 1923 and 1928. In 1930, a revised English edition was published under the title *The New Vision* (New York: Brewer, Warren & Putnam). It is assumed that Yi Sang perused it between 1930 and 1931 when he began his career as an architect. In this research vein, Hye-Sil Choi first discovered the *The New Vision* was connected to Yi Sang's Prefaces for *Korea and Architecture*.
Choi, Hye-Sil. 1991. A Study of Korean Modernism [in the] Novel in the 1930s. Seoul: Seoul National University (Unpublished Ph.D. dissertation).

8 In 1922, Moholy-Nagy published, in collaboration with Alfred Kemny, the principle of "a dynamic-constructive system of forces" (Sturm No. 12). See Moholy-Nagy's *The New Vision and Abstract of an Artist*. New York: George Wittenborn, Inc., 49.

9 The translation presented here is my own.

10 Translated by Kathleen L. McCarthy.
Ma, Kwang-Soo. 1995. "Sperm Cells in a Scary Mad Dash!" *Muae* 1. New York: Kaya Production, 112.

11 Lew, K. Walter. 1995. "Selected Poems of Yi Sang." Translated by Walter K. Lew. *Muae* 1. New York: Kaya Production, 80.

12 Tzara, Tristan. 1963. *Lampisteries précédées des sept manifestes dada*. Paris: Pauvert, 64.

13 Schwitters, Kurt. 1970. "Logically Consistent Poetry" in Richter, Hans. 1970. *Dada: Art and Anti-Art*. London: Thames and Hudson, 147-9.

14 Tzara. *Dada: Art and Anti-Art*, 103-4.

15 Arp, Hans. 1966. *Jours effeuillés*. Paris: Gallimard, 183 and 306.

16 Derrida, Jacques. 1976. *Of Grammatology*. Baltimore: Johns Hopkins University Press.

17 Norris, Christopher. 1988. "Deconstruction, Post-Modernism and the Visual Arts." *What is Deconstruction?* London: Academy Editions, 10.

Figure 13 is reprinted from Dr. Andreas C. Papadakis' book *Deconstruction in Architecture* (Architecture Design, 1988)

Roxane is an original typeface designed by the author in response to a design analysis of visual attributes that enhance the legibility of font characteristics. The author takes issue with scientific legibility studies which focus on isolating variables to obtain verifiable results, but which are not useful in the more complex and holistic design of specific type faces. Visual analysis of type form attributes and visual principles provide the framework for this more holistic enterprise. The principles and attributes are demonstrated visually throughout the article, ending with *Roxane*, a typeface developed with these principles in mind.

University of South Australia
Holbrooks Road Underdale
South Australia 5032

Visible Language 33.3
Gluth, 236-253

R O X a N E

STUART GLUTH

A Study in Visual Factors Effecting Legibility

The legibility of typefaces has often been measured by means which have included distance, speed, both short term and long term comprehension, blink rates, saccadic jump regression, heart beats and even shaking tables. However, apart from the major class differences, such as sans serif and serif, bold and medium, italic or roman, there seems to be little or no research into which of the many different factors in a typestyle or class contribute to legibility.

Many believe that it doesn't really matter because as long as a typeface is reasonably readable, it doesn't make much difference as the reader compensates for ambiguous characteristics. I argue that legibility matters for two reasons. Excellent legibility is critical for the large proportion of the population who see with less than optimum vision. There are many who need glasses, particularly reading glasses, who may not have access to them. Even those who wear them may use glasses that are out of date or scratched. Under some conditions they also collect dust or moisture further interferring with vision. Further, once mastered, reading is an automatic process, susceptible to good or bad influence unknown to the reader. Legibility may effect our attitude toward what we read. The best legibility would minimize this negativity or lack of positive response to reading material.

But how do we test for the bewildering number of factors which may influence legibility? Although we can see that it is important, it would be prohibitive to test them all against each other, one at a time, using any of the methods mentioned at the beginning of this article.

As a designer, I approached legibility as a design problem. Design analysis, which is used to establish the parameters for a problem, to establish what the problem is, can establish which qualities we might expect to effect legibility. If we examine type in terms of design principles, we may increase legibility by increasing the degree to which these principles are used. So analysis of where contrast and unity lie within existing typefaces, might allow us to see which factors effect legibility, and by maximizing their contrast or unity respectively, allow us to create more legible type (*see figure* 1).

In terms of basic design principles, an examination of an alphabet set in a typical typeface (in this case *Verdana*) shows that the contrast, the variety that we depend on to create the pattern by which we recognize words and phrases, occurs primarily within the negative space, while the linear skeleton remains rather uniform, unifying the system to maintain contrast (*see figures* 2 *and* 3).

In terms of creating contrast, the spaces inside the letters are visually the most important (*see figure* 4). But the spaces between the letters, defined by their profiles, although they appear to have less contrast than the spaces inside the letters, also contribute importantly to pattern recognition. (With contrasting shapes but repetitive size, they are like the bass line in a piece of music, where there is variation in tone with a strong repetition in time, creating both variation and visual rhythm. This, however, is developed differently in different typefaces.)

figure 1

figure 2

figure 3

figure 4

A serif alphabet, in this case *Bembo*, an old style face which maintains many of the characteristics of the handwriting on which it was modeled (*see figure* 5), is seen to be very different from a modern sans serif typeface (*see figure* 6), in this case Helvetica, where the lack of serifs and the unity of graphic form have a dramatic effect on the negative space. This is much more enclosed in letters such as a, c, e, g and s, but much more open in the vertical direction in letters such as h, k, m, n, r, v, w, x, y and z, where the spaces are more repetitive in shape and size.

figure 5

figure 6

Upper case letters are a much different matter again; their uniform height, volume and often width, create a dramatic decrease in the variety of form they generate in a serif alphabet and in a sans serif alphabet, perhaps even more so (*see figures* 7 *and* 8).

figure 7

figure 8

In the spaces inside the letters, in a serif typeface, the serifs enclose the space much more in some letters, particularly in the vertical direction, creating a big difference between top and bottom and left and right (*see figures* 9 *and* 10).

figure 9

figure 10

In a modern sans serif typeface, the forms generated are more uniform in shape and size, and depend significantly on the square ends of the letters and uniformity of size and shape to control space in the vertical direction.

In the capitals, a serif typeface can be seen to be less different than a sans serif typeface, and the forms generated are much more uniform, particularly in size and proportion in the spaces between the letters (*see figures* 11 *and* 12).

figure 11

figure 12

In a lowercase serif typeface, the serifs both enclose the spaces more, and accentuate the difference between left and right and top and bottom (*see figures* 13 *and* 14).

figure 13

figure 14

In a sans serif typeface there is a uniformity, particularly of volume, and between left and right and top and bottom.

In the capital letters (*see figure* 15), much greater variety can be seen between the letters, than in the shapes inside the letters in both size and shape. This is also the case in the sans serif (*see figure* 16).

figure 15

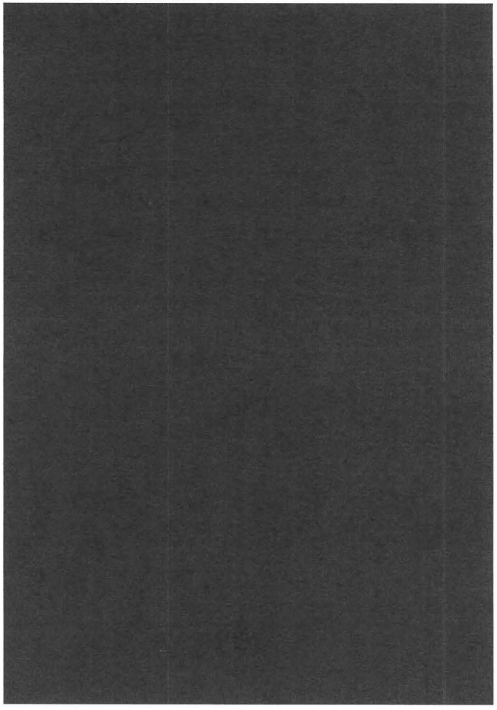
figure 16

As a result of these observations, the profiles of the capital letters are seen to be critical to their recognition and that they need sufficient letterspacing to define them. This reinforces Tschichold's idea that type set in all caps needs extra spacing. It also lends credence to the argument put forth here, that it is the space that establishes the recognizable pattern of letters.

Another indication of how important the negative spaces are in reading is that negative space is what the eye "sees." The eye detects light. When light hits the retina, a nerve is excited and sends a signal to the brain. When no light is "seen," or the eye "sees" black, no signal is sent (*see figure* 17).

When a page is viewed in the dark the letters cannot be "seen." When the light is turned on, the letters remain the same, but it is the white space that is "seen."

As a further indication of its importance, most of what we see on a page is white space (*see figure* 18). Even after we remove the margins, paragraph spaces, indenting leading and word spaces, the black of the letters still only occupy about fifteen percent of the remaining "full" space.



Use full points sparingly, and omit after these abbreviations: MR, MRS, Messrs, Dr, St, WC2, 8vo and others containing the last letter of the abbreviated word.

Use single quotes for a first quotation and double quotes for quotations within quotations. If there is still another quotation within the second, return to single quotes. Punctuation belonging to a quotation comes within the quotes, otherwise outside.

Opening quotes should be followed by a hair space except before A and J. Closing quotes should be preceded by a hair space except after a comma or a full point. If this cannot be done on the keyboard, omit these hairspaces, but try to get the necessary attatchment.

When long extracts are set in small type do not use quotes.

Use parentheses ( ) for explanation and interpolation; brackets [ ] for notes.

For all other queries on spelling, consult the *Rules for Compositors and Readers at the University Press, Oxford, or Collin's Author's and Printers' Dictionary*

CAPITALS, SMALL CAPITALS, AND ITALICS

Words in capitals must always be letterspaced. The spacing of the capitals in the lines of importance should be very carefully optically equalised. The word spaces in lines either of capitals or small capitals should not exceed an n quad.

All display lines set in the same font should be given the same spacing throughout the book.

Use small capitals for ruynning headlines and in contents pages. They must always be slightly letterspaced to make the words legible.

Running headlines, unless otherwise stated, should consist of the titlr of the book on the left hand page, and the contents of the chapter on the right.

Italics are to be used for emphasis, for foreign words and phrases, and for the titles of books, newspapers, and plays which appear in the text. In such cases the definite article 'The' should be printed in roman, unless it is part of the title itself.

In bibliographical and related matter, as a rule, the author's names should be given in small capitals with capitals, and the titles in italics

FIGURES

Do not mix old style text compositions with modern face figures. Either hanging or ranging figures may be used if they are cut in the font used for the text.

In text matter, numbers under 100 should be composed in letters. Use figures when the matter consists of a sequence of stated

figure 17

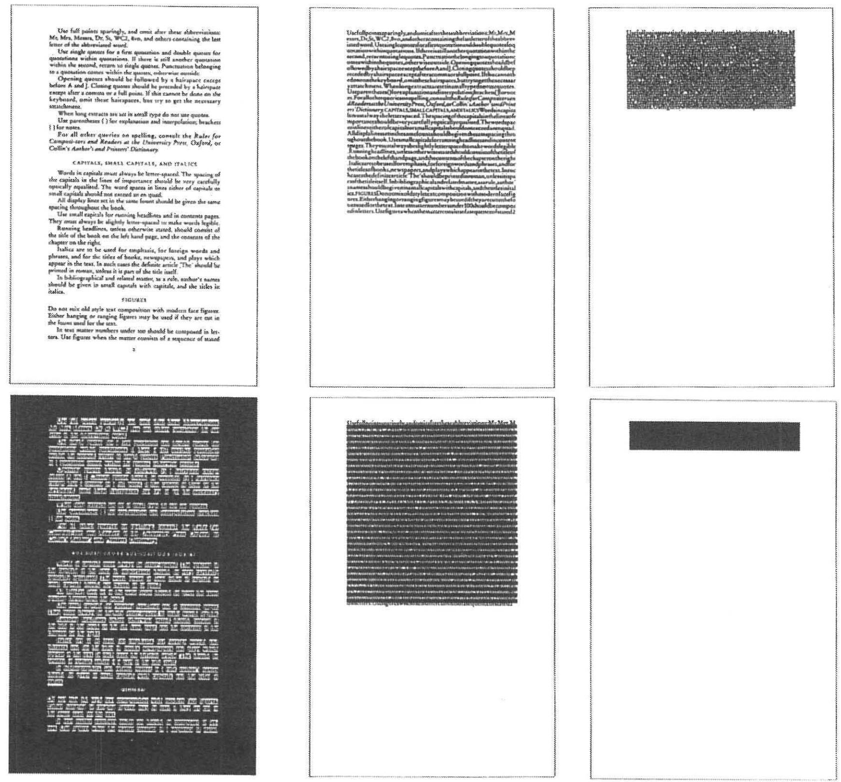


figure 18

Roxane was designed to maximize legibility by giving considerable attention to the way the space is controlled by the letters (*see figure* 19).

figure 19

By making the differences in the negative spaces as great as possible in the spaces inside the letters, (*see figure* 20), maximizing the differences in size and shape, between left and right, between top and bottom and between open and closed spaces (*see figure* 21), enhance legibility.

figure 20

figure 21

The spaces between the letters strengthen the characteristic profiles of the letters to maximize their difference in shape (*see figure* 22).

figure 22

In the capital letters, the significant features of their profiles are investigated and emphasized, while superfluous features are diminished or removed (*see figure* 23).

The capital letters are designed to be used with the lower case in text, rather than in settings of all caps. Therefore they are narrow, the letter often being only as wide as is necessary to carry the profile, and light, barely stronger than the lower case, so as not to interrupt the reader's eye, with either large black or white areas in the line of type (*see figures* 24 *and* 25).

The spaces inside the letters are open and clear with as much variety as possible, particularly in size (*see figure* 26). (Reference has been made to the Roman letters on the Trajan column, where there is a lot of variety, particularly in the width of the letters, the width often being determined by what is necessary to carry the profile.)

The profiles of the letters have been made as different as possible, to emphasize the difference in shape in the spaces between the letters. This has led to the openness of the C and S, the much nearer vertical angle of the center portion of the S, the straight and sharply angled stroke of the R and the slightly angled end strokes of the M.

figure 23

figure 24

figure 25

figure 26

The following examples of different typefaces were compared. When their presentation was effected by the deterioration caused by different reproduction processes, their legibility was demonstrably altered (*see figure* 27).

figure 27

Soft focus, caused by reproduction (or by the viewer) can have a dramatic effect, both in this example where it has caused the letters to fatten (*see figure* 28) and in this example where it has caused them to thin out with parts of them disappearing (*see figure* 29).

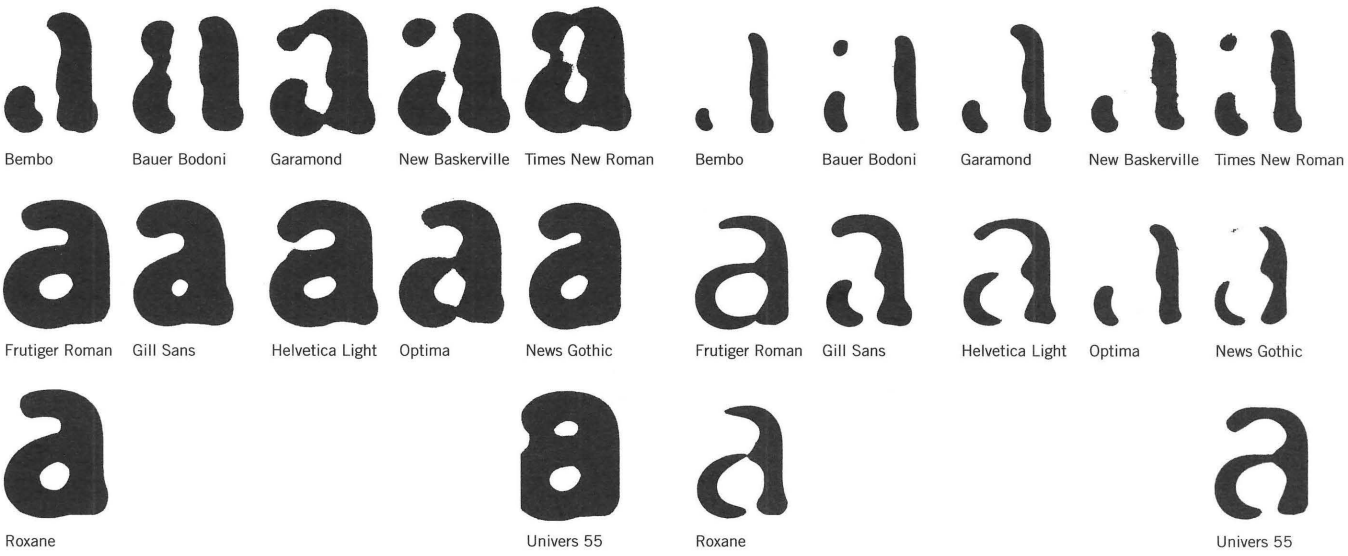


figure 28

figure 29

While overexposure is not usually itself a problem, the combined effects of plates, film, reproduction artwork, etc., can have a dramatic effect, particularly on very small letters (*see figure* 30).

Similarly, the combined effect of underexposure can change the presentation of the letters in the opposite direction, again in particular for very small letters (*see figure* 31).

figure 30

figure 31

The combined effects of these factors, plus those contributed by rough paper, over- or under-inking, very fast printing processes, digital typesetting, photocopying or low quality computer printing and so on, are simulated here (*see figures* 32 *and* 33) to show what the outcome might be, particularly for very small sizes, very fast printing processes or poor quality paper.

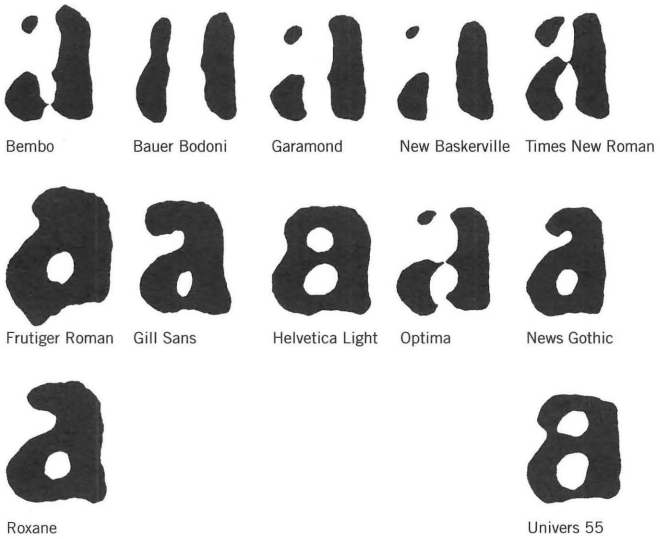


figure 32

They could also be seen as the result of different processes, such as screen printing on different surfaces such as are commonly used in packaging or other applications.

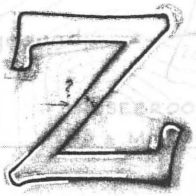
figure 33

6 When attatching or removing lenses never touch anything inside
the camera especially the lens contacts or mirror. To protect lens
contacts and lens elements always attatch body and rear caps
5 whenever a lens is not in place. Never touch lens elements or
eyepieces with your fingers; if the lens becomes dirty, clean it
gently with a lens brush. Only if necessary moisten a sheet of lens
4 cleaning fluid. Then starting at the centre and using a circular
motion lightly wipe the glass surface. Never lift the mirror or touch
its surface as this may impair its alignment. Dust specks on the
3 surface of the mirror will not affect meter readings or picture
quality. If they are annoying have the camera cleaned at an
authorised service facility

figure 34

In conclusion, we have discovered and been able to verify the importance of negative space for ease of reading, the importance of basic design principles to function, as well as visual interest in one of the most demanding sub-disciplines in graphic design, that of type design. The usefulness of design, and in particular design analysis as a research instrument is also suggested by the method and results contained within this paper.

Stuart Gluth teaches graphic design, leads the Design Research Group at the University of South Australia and is a partner in the design consultancy interDesign. The breadth of his interests is indicated by his passion for typography, which has led to a masters degree from the ANCT in Paris, following initial studies in industrial design. He is currently campaigning for Ph.D. degrees in design practice and for the acceptance of designing as researching.



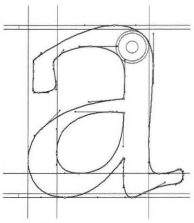
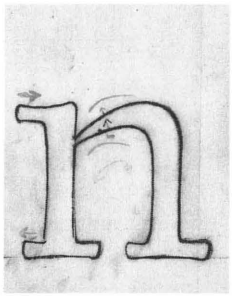
E A

CHARLES GIBBONS

Much of the writing on type design reflects the technical and pragmatic aspects of its production; this approach frequently obscures the human dimension of an already arcane art. Now that computers have put type's tools within the grasp of many, its literature needs to respond in kind. Drawing a parallel between living and working with letters and exploring the natural world – this article, excerpted from the author's graduate thesis – offers a literary meditation on the motives for, and experience of, making type.

University of Wisconsin–Stout
Menomonie, WI 54751
gibbons@uwstout.edu

Visible Language 33.3
Gibbons, 254-283

L   D

Reflections on Developing a Typeface

ONE | LOGGING TRAIL

The Zealand Trail is relatively easy, following an old railroad grade much of the way and passing through an area of beaver swamps, meadows, and ponds. All major brook crossings are bridged.
AMC White Mountain Guide

A script, in the sense of true writing, as understood here, does not consist of mere pictures, or representations of things, but as a representation of an utterance, of words that someone says, or is imagined to say.
Walter J. Ong, *Orality and Literacy*

You're following in my footsteps here. This was mostly written walking. Weaving home to school and back again. Pacing round my apartment. Ambling aimlessly about my neighborhood, notebook in hand, muttering to myself like a nut. I walked, gathering stories along the way. Maybe I had to be in motion myself to catch the fleeting words; maybe walking's the motor that drives my mind. I walked these words like a teething baby, like a restless, housebound dog, till they settled down. Much time – and more than a few miles – shaped these words, these words themselves about their shaping. Circular? Perhaps – but every circle's described around a single, necessary point.

I came here with a modest goal – to draw letters – and this is the travelogue of my two-year trip. This is the story of how I went in search of a single typeface – the one you're

reading about now – and of where I found it. It's the story of why I went looking in the first place, since I set out to do better something I could already do – or so I'd thought. Like any journey, mine has its beginning and end, its twists and turns, its unexpected weather and dubious drinking water. Like any journey, not everyone chooses to tag along so it falls to me to recount my adventures.

I was lucky to have a brightly blazed path to follow, a real trail in the real world, high up in the Whites – sometimes followed figuratively, sometimes literally. Over half my life now I've spent Thanksgivings in Zealand Notch in northern New Hampshire, where the Appalachian Mountain Club keeps a hut for hikers. Each year brings a different trip with a different group – some large, some small, some with friends and family, some with folks I've not seen since. Some years bring no trips at all, the weather too cold or logging road too icy to even try. And some years I lived away and couldn't travel east. This is as much a story of that place, and my place there, as of a typeface – so much so that telling one helps tell the other.

Some things are better shown than told, and the deeper we venture into letters' world the better our chances of apprehending what they actually are. Our path skirts techniques of making types and the particulars of their aesthetics – these are lands better charted on other, different maps.

Two events started me down this trail. John Benson and Kris Holmes during their brief visits here both pointed out the painfully obvious: I have hands I should be using. After all, that's where letters come from, their roots shaped through the interplay of hand, wrist, arm and shoulder with stylus, brush, chisel and pen. Machines have since interceded at our behest, casting words wide by fixing their forms, by trading one kind of life for another. I learned to letter through machines, through books and typesetting and computers, and these two years represent a journey, in part, from my head into my hands.

Every action has its opposite, and my hands have been busy talking to my head along the way. Lucy Hitchcock, when we'd just met, asked me perhaps the most difficult question I've faced here: Why I do what I do – why letters? That same day, as I stood with John Hegnauer staring at a piece of lettering, he admitted that after all his years carving, he felt he'd reconciled himself to the capitals but his relationship with the lowercase was still uncertain. Many would think it a bizarre thing to say. All that bothered me, though, was I'd never asked myself either question – at least not directly – and I knew I had to go looking for an answer.

Did I find one? Let me play guide and I can show you where I've been. Most places the path's wide enough to walk two abreast. No need to pack bread crumbs or silken thread: knowing how way leads on to way, I doubt we'd ever bother coming back.

TWO | TRAIL HEAD

Lettering in every form gives me the purest and greatest pleasure, and at many times in my life it was to me what a song is to the singer, a picture to the painter, a shout to the elated, or a sigh to the oppressed – it was and is the most happy and perfect expression of my life.
Rudolf Koch

The Zealand Trail starts at a parking area just before the gate at three and a half miles from the highway. It is reached by following Zealand Road, which leaves the highway at Zealand Campground, about two miles east of Twin Mountain village. Zealand Road is closed to public vehicular use from mid-November to mid-May.
AMC White Mountain Guide

How to explain the appeal of an unheated, unplumbed shack on a mountainside ledge? If I were you I wouldn't see it, but I'm not and I do. I can see morning's window frost, my crystalline breath clouding the air. I can smell evening's

fire, birch then oak, bright then long, set once the sky's drained of light. I can taste the sweetly metallic water, hear the icy pond's percussive settling, feel the rough planked floor. I keep it all deep within – a solitary preserve.

Sit at my studio desk here, picked for its windowful of trees and northward gaze. Sit and stare at the carrel. At the purloined National Forest sign. At the photos of the valley: Zeacliff and Whitewall and marshy scrub all bisected by a single nearby birch. Without planning to, I've taken the same picture every time I've been. I keep them pinned to my desk, turning them like calendar leaves to mark the months I'm missing.

Trip-morning wake-up: I go collect the others and we find a diner to load up on caffeine and cholesterol before hitting the road. And then the road: three hours' worth north of Boston. A half hour into New Hampshire we lose familiar radio and ride static the rest of the way. Urban sprawl collapses above Concord. By Cannon there's snow – always – and clouds. The highway grows narrowly rural; interstate becomes byway, asphalt, gravel, dirt, and then it all gives way to trail.

Pines wall the path for the first hundred yards then the woods begin in earnest. Each section's distinct from the last. Hike the Zealand trail enough and you get the pattern down cold: pines then boulders then roots then streams then swamp then pond and then the mountain – all uphill inbound. After a while you can do it in the dark – not a bright idea, but you can. I have. Once.

Go sit on the porch – go on. Or head up the falls, over a rock, a log, stepping light on ice or it's into the drink and down the mountain. Where it's steep or still running, turn into the woods and out again upstream for another look. Head up above Lend-a-Hand, up above the hydro pump, past the restricted use quarter-mile and off the trail, just to see. I plan every time to track the river up-mountain till it's so small I can dam it with my hand, and every time I start

up but then think the better of it. I've seen the Mississippi small up north and it hasn't been the same since. Why spoil things?

Then there are letters. How to explain the appeal of spending my life lost in this forest of signs? Indirectly – but what explanation isn't indirect? To really get it, you have to be there yourself.

The appeal? It shows in little things I do. In childhood, adopting the hands of people I admired, hoping perhaps to be admirable myself. I eventually gave that up to create my own scripts, carefully documented every few years in the back endpapers of an old type specimen book. In amusing myself for hours at lacing pages with nonsense phrases, watching my pencil-tip trace its path. In baking a gingerbread font to bring to class and regretting only I had time enough for the caps.

In sketchbooks packed with doodled letters; in letters scrawled on practically every paper surface in reach plus the odd wall or table, or the back of my hand. In a typeface I drew about a vacation in Vermont and the one I drew when my dog died – called *Aphasia*, for when words fail. It sits in a drawer somewhere. I've never used it and probably never will.

It shows in what I keep around me. In that poster from my high school newspaper's office, a misappropriated souvenir from some forgotten class trip. "Dix-septièmes fêtes musicales en Touraine," it says, though I really can't read it. I keep it for the lettering, a sweetly awful mixture of *Baskerville* and *Berling* – as if all the printer had was "B" types.

It shows in the California job case shadow box on the dining-room wall. In an old family gravestone in the hallway, whispering "Waters" in letters so weathered they're barely audible above the marble's white noise. In the old typewriter on my dresser, a Smith and Corona, purchased secondhand in the thirties – about when the hut was built.

I came to type from reading. Readers, perhaps better than others, have a sense for the "missing," for the mind preserved and reconstituted miles and years away from its source. Maybe we hear its echo. Maybe it's that we absent ourselves, projected elsewhere to lead our shadow lives. Reading's isolating, antisocial, almost autistically focused away from the world – and delightfully so. What's abstract turns personal too.

So much of letters' power over me is tied to silence and absence. Letters at play in writing conjure the missing: they recount the past, imagine the future, direct our actions, amplify the distant voice and recall those fallen silent. It wouldn't be necessary otherwise – why write or read what we can simply say or hear?

So too, my sense of Zealand Notch is tied to absence. In a sense, being at Zealand is like being among letters. Its outside scale sets enough lead between my line and others' to become legible to myself, and its pace promotes the reading. Less abstract, though, is this: I'd moved away and passed up trips. Having been away six years, I simply missed the place.

I missed the hut kitchen, its propane and iron and stalactite utensils lamplit orange and dripping on the floor. But I'm here not there – here – typing, where nobody ever types there – at least not that I know. I'd gladly be wrong and more gladly be there. Typing, or not.

I missed my insomniac nights in the bunkroom, headphones inside my cap, trawling for Quebecois chatter to mask the others' sleep till I stumble myself and wake to stone-cold dead batteries. I still have the radio, though. Radio in the studio, at the dining room table, at the keyboard splining my way through the alphabet to cello or cuatro or maybe just the news, and then the room goes missing and I'm feet-up by the wood burner in the hut's half light...

Leaving the parking area, the trail follows the railroad grade, then a bypass that is somewhat rough. It then returns to the grade and approaches Zealand River at about a mile, near some ledges in the stream.
AMC White Mountain Guide

Just as much as the word, silence is a creature of the alphabet: the pause between word and word, the silent contemplation of the text, the silence of meditative thought, are all forms of alphabetical silence... Most of us have, at best, only an inkling of the silence before words; and many of us have gone the opposite way, converting silence into something mechanical, into the no that separates beep from beep.
Ivan Illich and Barry Sanders, *ABC: The Alphabetization of the Popular Mind*

Much of what I know about letters I learned first in cemeteries. Old style, transitional, modern. Ligatures, letterfit, leading. Of course, stomping around in some disused graveyard limits the discussion somewhat – I didn't pair words with ideas until years later, but I had row after row of good and patient teachers.

They were everywhere we went. Across the street from school where bundled children harvested fall's colors. Behind the church, with the tire swing on which we cast ourselves like little pendulate angels. Back beyond the lumberyard – amusing in its own right – a lot full of revolutionary soldiers couched in the high grass. The lavish green expanse of the new cemetery next door punctuated nightly with bats and a single eerie gas flame.

Mine was an accidental exposure to letters. I went to play, to explore Salem's forgotten wilds, weaving between the open fields of markers and the encroaching woods – half expecting, half hoping to stumble on some secret coven or fortress. Playing twilit hide-and-go-seek, ducking behind markers where the others wouldn't go – sooner or later I was bound to look at what the stones said, and

how: the elaborate scripts, the wobbly spelling, the strange epigraphs.

Think about it: a lawnful of rocks bearing odd notes from the past (always the past, never the present or ever the impossible future) asserting *here lies*, begging *remember me*. A landscape of introductions, of calling cards – no throat clearing or handshakes among the reserved dead – with perhaps the occasional visit from increasingly distant friends and family. Like pausing to listen to an elderly relative's stories, I got to know my quiet neighbors, cobbling together bits of their lost worlds. *She came from England. He was only a baby. What a strange name. That was so long ago.* Puzzling over the more cryptic cases: 2 *Children. Mrs Eliza Fittypace 1771.*

Some yards had newer residents, new as in from this century, new like folks who moved to town some twenty years back and still don't quite fit in. They came with their newfangled ways, their flowers and flags and humorless sandblasted granite bergs adrift among the slate. I politely greeted the new folks and excused myself to rejoin my friends. The old stones' stolid, weathered resoluteness conjured a sense of mystery and allure the shiny new machined slabs could never match.

So it seems inevitable I'd turn to lettering, revisiting my childhood world and adding my voice to the silent conversation. But why make letters?

To find out what they are.

Letterers tend to be literal, to be interested in things not pictures, but also occultists, trying our hands at divining the alphabet's secret caballah, spelunking for hidden relationships, wrestling with these symbols as things-as-such.

Half their mystery lies in what they do. Letters are quiescent objects, spreading a meaningful silence in their wake. Each alone represents a silent potential. We see a letter – say z – and we call it by name. But paired with any other, our letter quickens and voices itself – "Oz." For a

letter, being itself means denying itself – it means going as absent as readers. Writing conjures the hidden world within each letter, its alchemy transforming words from sound to sight. It stores speech: fished from the rushing stream of time, it points to its moment of capture. Pointing backward, it's tied intimately to memory. Making letters is just one way of exploring and perpetuating this mysterious transubstantiation.

(Of course it's also fun.)

FOUR | BROOKS AND BRIDGES

Originally called the New Zealand Valley, presumably owing to its remoteness, the name was shortened to Zealand for the convenience of the railroad and post office. Much of Zealand Notch and the area to the north was reduced to a jumble of seared rock and sterile soil by a series of intensely hot fires around the turn of the century. It has now made a reasonably complete recovery, a remarkable and outstanding testimony to the infinite healing powers of nature.
AMC White Mountain Guide

Letter-Cutting is a Handy-Work hitherto kept so conceal'd among the Artificers of it that I cannot learn any one hath taught it any other; But every one that has used it Learnt it of his own Genuine Inclination. Therefore, though I cannot (as in other Trades) describe the general Practice of Work-men, yet the Rules I follow I shall shew here, and have as good an Opinion of these Rules as those have that are shyest of discovering theirs. For, indeed, by the appearance of some Work done, a judicious Eye may doubt whether they go by any Rule at all...
Joseph Moxon, *Mechanick Exercises*

I wasn't a graceful child but rather the kind who trips on curbs and falls from trees. Luckily for me I could read and, luckier still, liked to from the start. Biographies and field guides and encyclopedias gave way to Updike and Irving who in turn passed the baton to Borges and Saramago and Perec and so on. It went likewise with drawing, the fridge plastered with portraits of parakeets and planes and

many-masted frigates. It seems only natural that someone tending to words and pictures should fuse the two in one life practice.

I remember catching my first glimpse of what books *are* down between the lines of what they *say*. I was nine, a fourth grader in the sixth grade reading class. We'd been assigned *Jonathan Livingston Seagull* – still new then, worth saying only because the later paperback's design tried to soar on clipped wings. The hardcover was open and airy, simple and graceful, and full of photos printed on vellum leaves that lifted like fog. It looked like the story it told. I loved the book so much I read all the author's others; I learned about birds and planes and flight. And I glided from contents to container, beginning to hear books speak in their typish voices. Even today, I keep a special place aside for *Optima*, *Jonathan Seagull's* font – though, like most things special, I don't really use it.

I grew from reading books to making them, and making them draws on reading them – on going and coming back again. And how the books flock from everywhere to my shelves. From down the street and from vacation layovers. From Europe and the Internet. From places I've forgotten and others whose names I've never known.

Midway. Biermeier's. Arion. Laurie's. Odegaard. Lee's. Hungry Mind. Powell's. Moe's. More Moe's. Prairie Lights. Bear Pond. Seven Mountains. Cody's. Turtle Bay. Carroll's. Veatchs Arts of the Book. Half-Price. Other Worlds. Avol's. Canterbury. Wordsworth. MIT Press. E. Wharton. Starr. Annie's. Serendipity. Pangloss. Zembla's. The Coop. Much Ado. De Buitenkant. Ursus. Waterstone's. Buddenbrooks. Cambridge Booksmith. New England Mobile Book Fair. Boston Book Annex. Wordsmith. Dawson's. Charlesgate. Goodspeed's. The Strand. Bookcellar Café. McIntyre and Moore. Schoenhof's. Stillwater Antiquarian. Chanticleer. Book House on Grand. Paul's. Hartley & Marks. East India Square. Brentano's. Dark Carnival. Bookends. Applause.

Harvard Bookstore. Bookworks. Cellar Stories. Walker Art Center. A Room of One's Own. Shakespeare and Company. Second Story. J. Rybski, Bookseller. Avenue Victor Hugo. Nicholas and Helen Burrows. Andover Books. College Hill. Oak Knoll. Myopic. Galaxy. Trident Bookstore Café. Trade Winds. Twelfth Street. Globe Corner. Williamson Center. Beasley. Dingman's. Nijhof and Lee. Granary. Joshua Heller. Mendelsohn and Bledsoe. Readers International.

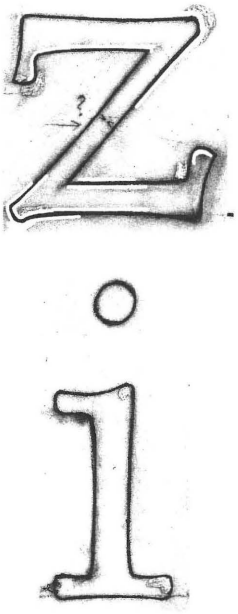
But not Amazon-dot-com. Not yet – no.

Just listing dealers sends me scurrying closetwards to rifle through a box full of receipts and bookmarks, a well-blazed paper trail winding back a decade. My tax records… Well, let's just say the contrast is striking. Books are the real reason I've always driven a heap. Who needs safe, reliable transportation when they could have more books? Flocks of books. Gaggles of books. Murders of books. (Murders? Well, if that's what it takes…)

Books about type. Books about calligraphy. Books about printing. About binding. About reading. Books about words. Some, like *Mechanick Exercises*, preach fire and brimstone. Some, like *Typologia*, are more avuncular in their advice. Others simply are, their letters rustling through the leaves like a pup.

Of course many a calligrapher, cutter, and designer holds strong opinions about the "just shaping of letters" and a good many write those opinions down. Their claims trace back the path like bread crumbs – Arrighi, Cataneo, Moxon, Tory, Dürer, Fournier, Fleischman, Gill, Goudy, Warde, Smeijers – each piling their cairns with the stones at hand, each marking their given stretch along the trail.

Because so many have passed this way over so many years, we're yoked to rites and rituals that admit little change, even if we no longer understand their origins. It's easy to grow in mired in type's mundane arcana. Serifs or none? Cursive or sloped roman? Masons or Knights Templar? Every letter's a secret handshake. Take lowercase a, for example. It's the



letter I enjoy drawing most and least, my best friend and mortal enemy, my doppelgänger.

It all started years ago but still feels like this morning. It was a slide lecture and maybe I'd nodded off or maybe just looked away – I don't know. But I saw it: the ebbing afterimage of the perfect a. You know those dreams where you've solved the problem, found what you've misplaced, been reunited with your lost love – only then you wake and it's all gone? Well, it was all this and more. Were it not for a, I'd probably have strolled through the alphabet once and kept going. I'll probably spend all my days trying to find my way back to that spot.

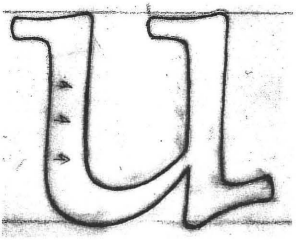
Straight-backed or canted? Low- or high-waisted? Does the nose droop over the chin? Is the bowl square, round, lachrymal, open, closed? The joints abrupt or adnate? The style calligraphic or chiseled? Tails hooked or flat? Beak, bulb, ball, or teardrop terminal? High-stepping or round shouldered? The permutations are maddeningly endless – and for just one letter.

But that perfect a, that's what I think about. I think about it drawing a. I think about it drawing z. I think about it at the diner as I struggle to see the menu for the letters. I think about it as the film titles roll. I think about it driving, bending left and right across straight lines, tangent cosine sine, lane-change merge, counter stem serif. Slower for thick, faster for thin, modelling my strokes with throttle and brake.

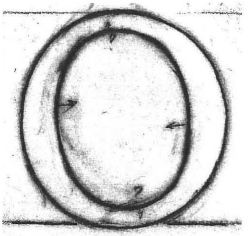
We all fumble along in the dark toward the shadows of our ideals, searching for the best form for these containers of meaning – like good boots, comfortable and durable and treaded for the terrain. Of course, one ideal can reproduce itself with great variety, like genes.

Imagine a snapshot from the *Garamond* family reunion: Monotype, Linotype, Ollière, Stempel, Simonici, Bertold, Ludlow, Ludwig and Mayer, ATF, Adobe. The black sheep, ITC peers from the back over its siblings' shoulders. Even the distant cousins, *Sabon* and *Vendôme*, smile for the

camera. Some soft, some angular, some round, tall, squat, or stately, a common blood courses beneath their disparate faces. And – what gathering would be complete without it – the obligatory skeleton peering from the closet: their name changed early from *Jannon* to *Garamond*, a seldom-mentioned graft to the family tree. Great effects spring from minute – but systemic – changes in form, but what distinguishes the *Garamonds* from each other is less skeletal than cosmetic.



Lettering is littered with such devilish details. Magic numbers abound: x-height is to ascender height as one is to the golden mean. Lowercase stem is to curve as lowercase curve is to uppercase stem, and uppercase stem is to curve – and all these as one is to one and a sixth. The whole series maps itself as a circle set tangent to two sides of a square plus an opposing corner. It goes on and on. As the Renaissance clockwork universe wound itself tighter – with the Earth spinning from center to edge – letters mirrored the shift, their proportions no longer cutting a human so much as numeric figure. Still, the early bias lingers in their names: faces, feet, shoulders, beards, ears, noses, chins, arms, legs. Tails? Well... The deeper you look, the fuzzier type's nomenclature becomes.



Paradoxically, just as computers have opened the gates to making type, they've closed others leading to understanding its workings. Types have gone from collections of physical objects one manipulates directly to minute computer programs – little homunculi that perform their own activities. What once was base lead has been transmogrified into pyritic vectors and bitmaps, PostScript and TrueType, justification and – most appropriately mysterious – hinting, the arcane protocols for deciding which border-straddling pixels get printed and which get dropped.

So many rules, so little time...

Letters are things, not pictures of things.
Eric Gill, *Autobiography*

At the height of land in the notch is Zealand Pond, which is unique for its having beaver dams as well as outlets at both ends; its waters eventually flow to the sea by both the Merrimack and the Connecticut Rivers.
AMC White Mountain Guide

Of course, learning the rules teaches less than half the real lesson. Much more comes through crafting these forms yourself, from feeling the lines and masses unfold in space and mind alike. From letting stems climb toward heaven, from arching a curve clear back to the ground, from standing on a new pair of serifed feet. From getting caught up in the mess of it all.

And of course, I didn't know any of this before setting out to make types – I just did it. All the sketches I'd collected in notebooks reached a kind of critical mass that ignited a chain reaction. They'd started as random jottings, a gesture here, a phrase there, a caption or a note, blooming quickly into works of their own. Going from doodles to types was just a matter of taking the plunge, right? Wrong – sort of.

True, what I had was a typeface – *Aphasia* – but I'd hobbled it from the start. My choices about its very nature – its height, its caps-only two-line system – greatly limited its stride. Having fallen short of my mark, I took aim again at *Lowell*, a text face, and again the target went untouched. So I taught myself the rules and got about halfway there.

Type designers cut their teeth by chewing on old designs, ingesting them, and allowing them to course through their own systems. You are, it seems, what you eat. Nutrition is the key benefit to revivals – a far cry from the economics and fashions that drive Type Design: The Business.

If you read enough books, look at enough samples and specimens and examples – enough stuff – it lodges firmly in your head. Byzantine iconography. Kolo Moser's bookplates. Will Bradley's Victor bicycle catalogues. Dutch type designs. Fred Goudy may have said the old fellows stole all our best ideas but what he didn't mention is that sometimes they'll share their loot. Just as history offers riches through the stories it tells, it also makes a great collaborator.

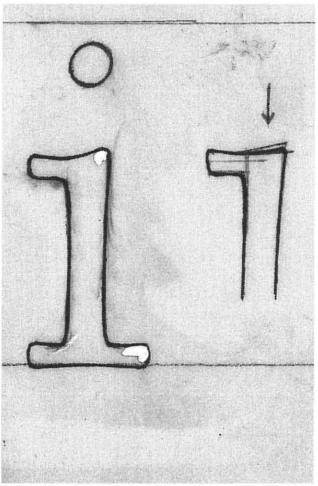
This is where the *Fleischman* types come in. I'd stumbled on them in an old French book on *Civilité* types and – love at first sight – knew I had to have them. Trouble was, they weren't for the having, having only been cut in metal – and even those types were held for the foundry's private use. So I did the sensible thing: I made my own.

Half their enduring attraction is... physical. I admit it. Their limbs long and slender, their shoulders high but round, their full, curved bulbs... I'd better stop there. But the attraction's other half – the better half, as it were – lies in finding and then following Johann Fleischman's path, in learning from his example. These types were originally made by hand: punched into steel, cut with a graver, filed down, even hand cast in lead. Looking closely you grow aware these were things, not pictures – objects with a physical, sculptural presence denied today's digital types.

Mr. Fleischman was esteemed for his precision, but in fifty years' work you know he had to slip every so often with that graver and gouge himself, mingling blood and lead. Few chances come along to get cut on a keyboard.

Stone carving is another matter.

I've cut myself sawing down stock, carving, even sharpening my chisel. So it goes – the small price of moving from working after hands to working with them. Stone work's intensely gratifying in its own right, the materials and tools, the pace, the play of light, the sense of having actually made some thing – so much so that after taking John Hegnauer's



carving class I signed up to work independently with him, trekking weekly down to his workshop, a treat in itself.

Learning to cut letters was, and remains, profoundly humbling. That I know something about type didn't mean I knew anything about stone – and I didn't – and after playing with letters for years I found myself a beginner all over again. The challenge of working in a new medium wasn't really surprising. What was, however, was realizing how much I stood to learn about letters themselves.

Pen-drawn letters grow from the inside out, their edges shaped by the mass of the stroke. They express their forms more directly than do their constructed siblings because, like Siamese twins, the left edge of the nib always knows what the right does. A drawn letter's contours act more like fraternals: although born together, one edge may bear little resemblance to the other. They make their own ways in the world.

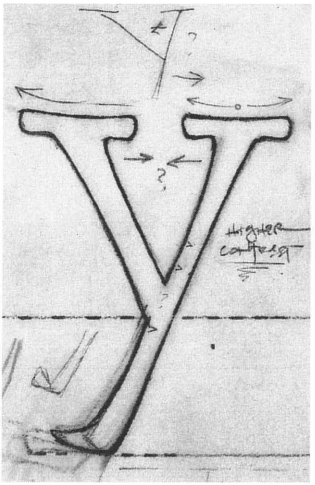
In stone work, the medium dictates the forms even more compellingly. The v-cut channel dives and rises through the stone like the wake of a playful dolphin. Like rivers, deep channels run wide and shallow ones narrow. These letters aren't cut in the stone so much as from it – they're the places where the stone isn't, light and shadow pooling in its place. And – again, like a river – the deeper the channel, the more of each it gathers.

We start with pens long before going near chisels. Stone doesn't have an *Undo* button, so planning is key. The quick decision of what to do yields to the long process of deciding how to do it. Sketches build up to carefully inked layouts and overlays, and overlays of overlays, drawn and redrawn till every detail's right. Carving shares type design's inverse relationship between the spontaneity of form and the effort required to make it seem so. Both strive for vitality, both always struggling uphill against the weights of their rigid and unyielding media.

When time comes to move from paper to rock, we wander into the yard where slate reclines against the house.

We page through the sheets until John finds one that says it's right for me – stone's yet to take me into its confidence, so he translates. He slides it out and tips it back; its face shimmers darkly, like graphite. Milky iron veins stream within.

I've more than I need, so we carry it stretcher-like to amputate the extra stock. Surgery takes only minutes: power tools do the big work. We quickly strip away what took ages to condense from silt and grit, layer after layer, diving years below the surface, grinding our way back in time. I help where I can but watch mostly, surprised at the speed with which we reveal the rock's secret face.



Next comes the part I do myself. John hands me two small ceramic blocks, one rough one smooth, and the hose. Working wet, my task is to rub the surface smooth. He demonstrates: water on the stone – water everywhere – he places the first block on the slab and glides it in e-like loops, drawing a slow diagonal from corner to corner. If I'm listening, the slate's ringing tune will tell me I'm bearing down enough or too much or going too fast or slow or missing spots. I ask when smooth is, and he just says I'll know. And then he leaves us alone.

Within minutes I'm soaked and stiff, my fingers stinging from November's wind and the exertion, pain creeping elbowwards. I've got two scraps of slate, still warm from the sander, in my pockets for heat. The slate hums to itself in enjoyment. I focus on keeping its sound constant.

Its murmuring grows seductive, and the kneading motion hypnotic. My gaze wanders. Scudding gulls, a broken boat, a rusting iron rail. The stone's song reels me back. I grow aware of our courtship, of planning our future together, our collaboration. Of conjuring a pristine new face – not better, just different. I rinse away the creamy sludge of ground rock to see what we've made. What greets me is a real tabula rasa, seeming less stone than geometry made solid. Its iridescent surface mirrors the sky, defying

me to cut it. For the first time I'm wary of what I've done: I've thrust my idea of beauty at this stone and now, at last, I can hear its voice telling me to keep my promise. All I can do is stare – we're ready.

SIX | HUT AND FALLS

The Zealand Trail skirts Zealand Pond and ends at two and a half miles, where the Ethan Pond Trail continues straight ahead and the Twinway turns right to Zealand Falls Hut, a quarter mile away...
AMC White Mountain Guide

I almost never hike alone. Some of the reason's practical, like being able to split the load, having someone along in case of accidents – that kind of thing. But mostly I hike with other people for the company. That's how I started and now it's hard to imagine doing it any other way. Type's always been the opposite – something I did on my own, cloistered away in the spare bedroom, in the office on weekends, in my corner of the studio. I'd even taught myself how to do it – which is typical among type designers. It was hard to imagine working any other way, but it was the recent, welcome company of two fellow travelers that helped steer me towards my final destination.

Probably the hardest part of cutting letters in stone, for me, has been letting go of my typish ways. Yet while John's been teaching me to carve, he's grown increasingly curious about what makes me see letters the way I do – and about the idea of adapting one of his projects into a typeface. One day, he arrived at my studio with a packet of drawings and photos of a Gulf War memorial plaque he'd cut several years ago: the lettering sturdy, muscular and brushy at once – an upright roman he though would lend itself to reading. He told me he'd watched me at work on my types and it looked pretty simple: I fiddle with the mouse, I type in numbers, I move lines and boxes around the screen. I

could only agree, and told him so. It is just that simple, in the same way stone carving's just a matter of whacking rocks with sharp sticks. So, once we stopped laughing we switched roles and I began to show John how to get letters from a mouse.

His initial digital steps were every bit as clumsy as my lapidary ones. All the things I've come to take for granted were new to him: the trash can, the pull-down menus, even the dilemma of when the mouse rolls to the desk's edge before the cursor reaches its mark. Then came the more complex issues. Yes, we can feed a paper drawing into the machine, but, no, that doesn't mean we can type with it. That comes later. And no matter how sophisticated these things have become, the computer's still an idiot. We have to tell it everything we want it to know: How many letters in a font. Which letters. Which keys on the keyboard correspond to which shapes. What shape for each letter. Which parts are solid and which are empty. How much white space goes between them.

This last one's toughest and the least expected. Working by hand we tailor each letter's shape and position to its context – the artist guides every step – but a typeface has to walk on its own. The designer teaches it how by drawing both the black marks and the white ones. Like houses, letters in a font each sit on a lot; some space belongs to the right side, some to the left. As with metal type, these spaces – the sidebearings – never change. The challenge is to imagine the space around each letter so it fits well with all its neighbors fore and aft in literally hundreds of combinations. Call it typographic *feng shui*.

After studying his composition for the plaque, John had picked representative letters and painted them white on yellow trace. We scanned them, cleaned them up – trading black for white and white for yellow along the way – and began creating digital outlines over the images of the originals. This time, I did most of the direct work and explained

what I was doing along the way. The parts of a font – outlines, bitmaps, metrics, hints. The twisted logic of vectors, especially the game of using the fewest points possible to get the fullest rendering. Within a few days we had most of a working lowercase. We called it *Derne Street*, after the site for the memorial. John took samples home to consider.

The next week he came back with a new set of letters, still on yellow trace but now drawn as pencil outlines, still clearly the same letters but different too. His original monumental forms grew spindly drawn small and he'd tried imagining them being small first. The brushiness disappeared some, replaced by more assertive serifs and hairlines, and the whole set more solid. This time he encouraged me to interpret the drawings, letting my ideas about typographic forms mingle with his about inscriptional ones, and the more I did it, the more my own letters began to take on the feel of the hand-made.

Apparently there's a real Hunger Mountain somewhere deep in Vermont's Green Mountains. There's also a slightly surreal one in Montpelier, a food co-op where my friend Mary Trafton – "Moon" to me and to many – does all the lettering, all by hand. Lettering for posters, for placards, ads, signage, cakes – you name it. Even for their web site. (*Co-op… Web site?*)

I've always envied her handwriting. It's rolling and generous while mine defies even my own attempts at reading. Over the years I've amassed a stash of letters and postcards, and even envelopes, hoping one day to "do s omething" with her script. Every so often I'd suggest she ought to try it herself and she's always brushed it off.

I love visiting the co-op. Grocery stores, libraries, bakeries, gas stations – the best smelling places ever. Being one of these four alone would make Hunger Mountain a treat, but what nails it is this: the place's full of letters. Big ones, little ones, brightly colored, bouncing everywhere – they're on the walls, in the windows, stuck to display cases, pinned

to the staff, and lurking in the rest rooms. Now, grocery stores are full of type anyway, but this is different. It's as if Moon's hand conducts the chorus of voices. It's like being in her head. Better yet, it's like being inside my own head, only with a deli counter.

Last time I was there, last summer, we were standing in frozen foods and Moon admitted all the lettering was keeping her from doing more illustrative work. We met as design students, and she's always tended more to pictures than words. I've enjoyed that she's been doing something like what I do, but I can also see how she might want not to. While pretending to examine some faux ice-cream, I casually suggested we might try making types out of her lettering.

And this time she agreed.

Before leaving the co-op, we'd picked which script to adapt and defined our method's madness. The big poster lettering was too active to domesticate. Her writing hand was too cursive, the letters too interdependent stand alone. But the letters she drew for the display cards were just right and she could just pick old ones out of the recycling bins. Within days of returning home I received a package with some three hundred index-card-sized samples and my work on Hunger Mountain began.

Cataloging Moon's lettering was even more like being in her head than was being at the co-op. As I sorted through the cards, I grew ever more aware of her habits as a writer. first the back slant, the leaning left that makes it all seem about to take flight. Then the way double letters rise through the word. The places where caps and lowercase mingle and the others where they stand apart. Places where things jumble together, others where they've room to breathe. The often backwards g's.

Interpreting the letters was easy and spacing was a breeze – the rules relax for handwritten fonts. What was difficult, and more than a little strange, was the sense of trespassing I got from working with her letters. We've been

friends for years now, but this felt like going through her medicine cabinet. As the font took shape, I began thinking I could write like this myself.

Impersonation's an easy place to become lost on the way to somewhere of your own. With so much history, so many fine examples, it'd be easy to simply bear witness to others' passions and obsessions. Sure, I'm charmed senseless by Moon's seemingly effortless art and frequently floored by John's work. The shelves and drawers are full of forgotten letters to rewrite. But along the way, my goals shed some of their modesty and grew curious about what lay off the beaten path, if even just a bit to the side. Working with others only heightened my need to find my own work, to find my own way – but it didn't suggest how.

So much of this journey's been in my little Rhode Island world: from home to school and back; in some classroom, studio, lab, or elevator; up and down the handful of streets whose names I know. Last fall arrived with the frustration of being blocked on two avenues – working and walking. My daily trek's a poor substitute for woods. I try to compensate by threading my way through back streets, farther from traffic and closer to trees. I cut across playing fields and lawns to feel the ground's soft give beneath my feet. But city walking, no matter how quiet the street or how dense the leaves, offers little relief from my peopled world.

Sitting at my desk, my window's warm colors announced winter's approaching cold. It also reminded me the longer I spent inside, the more likely I'd think myself into a corner. If I couldn't resolve my relationship with letters, perhaps I could at least resume my old one with Zealand.

When a type design is good it is not because each individual letter of the alphabet is perfect in form, but because there is a feeling of harmony and unbroken rhythm that runs through the whole design, each letter kin to every other and to all.
Frederic Goudy, *Typologia*

Zeacliff Trail runs from the Ethan Pond Trail a mile south of its junction with Zealand Pond, to the Twinway just west of the Zeacliff outlook. It is an attractive trail, but extremely steep and rough in parts, and not recommended for hikers with heavy packs. Practically all of it is in the Pemigewasset Wilderness. The high point of the ridge, Zealand Mountain, is wooded and viewless but there is a magnificent outlook from Zeacliff, overlooking Zealand Notch and the eastern part of the Pemigewasset Wilderness from the east end of the ridge.
AMC White Mountain Guide

Six years I'd been away. Six years since that last trip – the Bad Trip, ditched at the mouth of the ice-glazed logging road – followed by a long Midwestern hibernation. Six years, but no more. Not enough time? Skip something. Car won't make it? Borrow one. Boots shot? Re-sole 'em. Thanksgiving came and I dropped my schedule, rented a car, and fixed my boots. I convinced my old friend Steve to drive so I could ride shotgun, staring out the windows.

Omens forewarned a repeat trip. So much around me had changed. The new bypass. The condos and malled farmland. The traffic lights and satellite dishes. Even the forest service had begun charging for parking. I feigned stoicism: nothing's constant as change. But one thing startled me, the one thing I'd never expected to see. There was no snow – not along the road, not above treeline, not on the refrigerated ski-slopes. This wasn't a place I knew anymore.

We drove the logging road – asphalt, gravel, dirt – below the crepuscular midday sky. We parked in silence. We grudgingly dropped our five bucks in the parking box. We loaded out and geared up. We hesitated at the trail

head and finally started in. A windless snowfall greeted our arrival on the trail, and I started to think this might work out after all.

Of course Zealand had changed too. At the valley's north end where woods open into marsh marks the spot I'd always snapped the pictures that line my desk. Where usually I caught it by chance, this time I came stalking. Staring at the image day in and out had burnt it into my mind; finding the angle should be a breeze – just line up Zeacliff, Whitewall and that birch and say cheese. Five minutes, then ten, pacing back and forth along a few yards of trail. This tree or that one? On the trail or in the muck? What about over by that rock? I shot half a roll right there and only after getting the film processed did I realize what'd happened: my birch had snapped in half in the ice storms two winters back. We slogged through the deepening snow and climbed to the hut.

The first day's snow gave way to the sort of bright gloveless day made for a stomp in the woods, and we decided to head up to Zeacliff. We packed lunches and water and a camera – the usual – plus a few oddities. Steve pocketed his cell phone to test modernity's reach; I grabbed my compass, rarely needed on so familiar a trail. Plus, I stashed my chisels and mallet. Sure, I'd come to get away from school and work, but I brought sketchbooks and carving gear, just in case, and I had an inkling of something to do.

From the falls up to Zeacliff's a short trek – maybe a leisurely hour's walk. One year I snuck out while the others slept and climbed up to the dawn and back for breakfast without admitting where I'd been. The view's worth a day's drive-and-hike, and more than once we'd made the trip up and back in a day just to see it. From the edge you can eye the Presidentials and Washington's weather station gleaming in the morning light. You can peer down over the whole notch, still lined with railway beds sixty years after the tracks came up.

By the time we made the outlook, the clouds that'd dozed late in the valley had all burnt off. A young couple emerged dogs-first from the west trail and paused for a break. We unpacked lunch. I played with the compass. Steve abandoned his hopeless quest for a dial tone and took to his camera. I moved close by the cliff and spread out my gear.

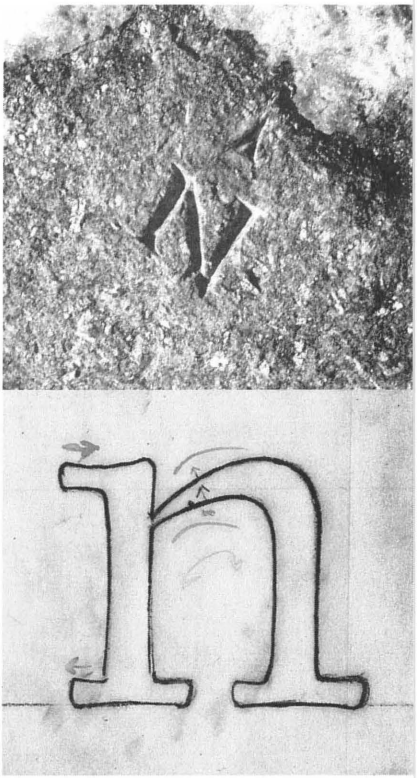
And I carved. No drawing. No preparation but for sharpening chisels and shaving ice from my stoop. I carved where ten years previous I'd had lunch, where seven back we'd all posed for the camera, where twelve I'd heaved that rock over the edge unthinking. I carved, squatting back against the drop, not daring to look behind.

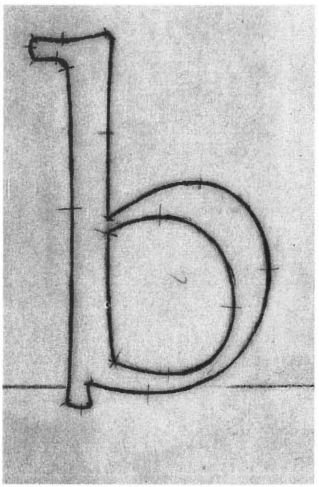
I carved, swapping one granite-blunted chisel for the other, the new one cold in my hand, the old sinking warmly in the frost. One channel cut, I'd stand, stretch, twist, have a bite of sandwich limp with snow, and start the next. One channel, two, three – and above, one wedge cut and then its twin.

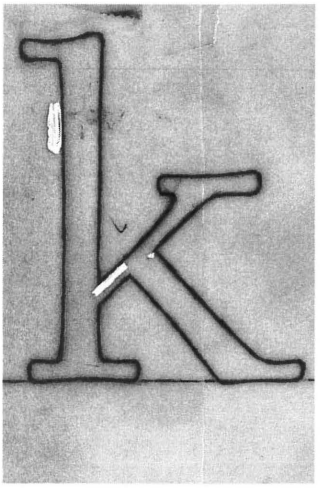
I carved, there at that enchanted place at the top of the forest, thinking of the valley below. Thinking how first I came to ramble, but came now to take my rest cure – to stand still, to mark the distance between last year and this and plot a course from this into the next. Thinking how this place has taken root in me and how I hoped it would remain. Thinking of all the woods had given me and all I'd taken. What could I give in return?

I carved a simple compass flower legible from every angle, a single arrow-capped N aimed away from the abyss, or a Z leading back down the trail to the hut. What else could I do? I told the mountain what it already knew but lent it my voice to tell others who came this way.

Without quite knowing why, the trip back down the mountain was strangely restful. The sky kept clear all evening. Dinner turned out. For once I slept the night through at the hut. And packing out the next morning, one thought turned over and again in my mind: If I could







give Zealand letters, couldn't it give them too? I'd found my bearings and a new collaborator.

We've hiked the trail and climbed to the outlook. All the way it's been Zealand River, Zealand Pond. Zealand Hut, Zealand Falls. Zealand This, Zealand That. At long last we've come to the trail head of *Zealand Type*. It's gooch time.

One of the ways I can tell I'm going hiking is that I make gooch – trail mix. It's my favorite ritual – better even than waterproofing my boots, which is hard to beat. The night before a trip I gather up all the fixings, whatever's around or whatever I got for the occasion. I pile it all on the counter and then mix it together in a stock pot and then heap it into little baggies till the pot's gone empty. I make a lot more than what's needed since a lot gets eaten before we even hit the road.

Every batch is a little different but it's still good old gooch and that's how it goes with type. The table's cleared, my pencils and pens and erasers and paper assembled, sketches and notes pinned up among the photos and snatches of found lettering. Tea's made and a Greg Brown album plays in the other room. The last two years float behind my eyes like a filter coloring my vision and guiding my hands. How to decide what goes into the mix?

Gooch has to be easy to pack, has to be dry so I can grab a handful, has to be full of carbs for energy. It has to be edible – it has to work. Type's fixings go the same way.

This type, this Zealand, should capture my sense of the place for which it's named. It should reflect what I've learned about letters along the way. And most of all, it should work as a typeface. The third thing is what it does; the other two are only why, and why changes. Every batch is a little different.

So, broadly, *Zealand's* sturdy and durable. It's built with direct, sensible shapes, some rough, some worn and weathered. It's meant to seem as inevitable as rain, to be exquisitely crafted but not fussy. Like the land itself, it

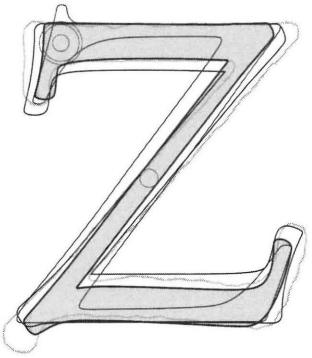
rises and falls. It bends like swung birches then switches back, and every so often it trips you up. It's relatively easy going since all the major brook crossings are bridged. Even the letterfit moves like a group – spread out enough so each feels more part of the land than the pack but near enough each other to help out in a bind.

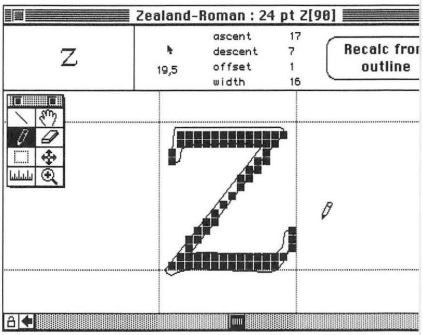
All along the way we can spy evidence of other hikers. There's Goudy and his *Village No. 2* ambling through the trees. There Dwiggins and his clan; cautious *Electra* clutching for handholds over every stream, *Caledonia* racing ahead, poor *Eldorado* bent in the undergrowth, and old Bill himself waving his arms and laughing. *Fleischman* steps lightly to avoid tilling the soil with its sharp feet, but off the trail – where the leaves are trodden black – weaves *Vendôme*, mildly deranged, pitching over onto its pack. Harder to spot is Jim Parkinson's *Showcard Moderne* splashing loudly upriver beside the trail, leaving neither print nor scent. And Will Bradley's passage is impossible to ignore: who else would spin an endless thread of bicycle treads?

A type's like a whole plot grown from a single seedling. *Zealand* sprang from a random doodle, just a single spatulate serif – then a pair, an arch, a stem – then a p. The whole set spread out quickly once it took root, but it still needed a lot of tending to grow evenly.

Sketches gave way to formal studies, and the studies to finished drawings. Pencil changed to ink and sometimes back again, the letters' contours shifting like strings vibrating to rest. Early characters modeled for later ones, lowercase for capitals, and the letters themselves for the punctuation and odd sorts. And hand-work gave way to the computer and its shifting contours, pen and pencil becoming points and pixels.

All the time I worked on the drawings – and even after, while minding the p's and q's of spacing and hinting and editing bitmaps – I carried my inspiration with me. I packed photos from the valley, photos of the hut and falls; of





Zeacliff and Whitewall; of birch and pine and Canadian jays scrambling for dropped trail mix. Pictures hang on the fridge. Pinned there next to the monitor at the studio is this month's valley, full of spring's explosive green. Every so often I'd pause to examine a letter or even just a stem or gesture and ask, *Is this Zealand?*

So, I greet my Zealand letters at the hut beside the falls – where wilderness and civilization contrast and converge like wool and gor-tex. We can sit in the sun and read *The Magic Mountain*. We can soak ourselves in the snow and then dry out next to the stove. We can bake cookies and make soup and even toss a salad... but then we'll have to face the outhouse. My friends feel right at home here in this curious blend of worlds: after all, it reflects their mixed lineage. On one side of the family lies speech, on the other writing. Natural and made, things and pictures of things. Together we can draw on calligraphy and carving, on *Hunger Mountain* and history and on sixteen winters' hiking mixed with one life's passion.

Charles Gibbons is assistant professor at the University of Wisconsin–Stout, where he teaches graphic design. A graduate of the MFA program at the Rhode Island School of Design, he is currently at work completing the *Zealand* type family.

REFERENCES

Appalachian Mountain Club. 1987. *AMC White Mountain Guide: A Guide to Trails in New Hampshire and Adjacent Parts of Maine, 24th ed.* Boston: AMC Books.

Birkerts, Sven. 1994. *The Gutenberg Elegies: The Fate of Reading in an Electronic Age.* Boston: Faber and Faber.

Bringhurst, Robert. 1996. *The Elements of Typographic Style.* Second ed, revised. Vancouver: Hartley & Marks.

Carter, Harry. 1995. *Fournier on Typefounding.* Darmstadt: Lehrdruckerei Technische Hoschschule.

Drucker, Johanna. 1995. *The Alphabetic Labyrinth: The Letters in History and Imagination.* New York: Thames and Hudson.

Fleischman, Johann M. 1994. *Fleischman on Punchcutting.* Frans A. Janssen, editor. Aartswoud, Netherlands: Spectatorpers.

Frost, Robert. 1995. *Collected Poems, Prose, and Plays.* Richard Poirier & Mark Richardson, editors. New York: Library of America.

Gill, Eric. 1988. *An Essay on Typography.* London: Lund Humphreys.

Gill, Eric. 1968. *Autobigraphy.* New York: Biblo and Tennen.

Goudy, Frederic W. 1940. *Typologia: Studies in Type Design and Type Making.* Berkeley: University of California Press.

Illich, Ivan & Barry Sanders. 1988. *ABC: The Alphabetization of the Popular Mind.* San Francisco: North Point Press.

Koch, Rudolf. 1976. *The Little ABC Book of Rudolf Koch.* Boston: David R. Godine.

McCullough, Malcolm. 1996. *Abstracting Craft: The Practiced Digital Hand.* Cambridge: MIT Press.

Moxon, Joseph. 1958. *Mechanick Exercises on the Whole Art of Printing* [1683]. Herbert Davis & Harry Carter, editors. Oxford: Oxford University Press.

Ong, Walter J. 1982. *Orality and Literacy: The Technologizing of the Word.* New York: Routledge.

Smeijers, Fred. 1996. *Counterpunch: Making Type in the Sixteenth Century, Designing Typefaces Now.* London: Hyphen.

Thornton, Tamara Plakins. 1996. *Handwriting in America: A Cultural History.* New Haven: Yale University Press.

Zapf, Hermann. 1970. *About Alphabets: Some Marginal Notes on Type Design.* Cambridge: MIT Press.

Zapf, Hermann. 1987. *Hermann Zapf and His Design Philosophy.* Chicago: Society of Typographic Arts.

CURI

LYNNE FERGUSON

This case study takes you through a human-centered design process used in developing an "Active Learning" tool, CurioCity, a game for 7th-10th grade students. Used in conjunction with urban field trips, the goal is to better understand multiculturalism and to bridge formal in-school learning with informal field trip learning. This game was developed by a team of three designers that just happened to be multicultural themselves, representing Japan, Korea and the United States as part of the "future of learning" initiative at the Illinois Institute of Technology's Institute of Design in Chicago.

Institute of Design, IIT
Chicago, IL 60610

Visible Language 33.3
Ferguson, 284-307

O C I T Y

Developing an "Active Learning" Game

In the media rich environment in which most students live, there is a need for new "active learning" tools that will help them deal with the challenging issues that face them in their future. Addressing the sometimes complementary and sometimes contradictory tasks of developing both a game and appropriate learning opportunities, this case study focuses on a user-centered design process.

Why develop an educational learning tool with a focus on multiculturalism?

Classrooms in America are changing in significant ways. Students come from a broad mix of cultural, racial, linguistic and economic backgrounds. For example, student enrollment in Chicago Public Schools from 1995-1996 according to a Chicago Board of Education demographic study was made up of: 54.4% African American, 31.3% Latino, 10.8% White, 3.2% Asian/Pacific Islander and 0.2% Native American. Seventy-nine percent of the students come from low-income families and nearly fifteen percent have limited proficiency in English. This increase in diversity among the student population is one of the greatest challenges facing teachers in the 90's. These statistics clearly demonstrate the importance of equipping teachers with "active learning" tools that both engage and educate students in dealing with sensitive issues like multiculturalism.

Having identified the problem of helping children develop an understanding and respect for other cultures, additional information was needed with which to explore possible solutions and to more deeply understand the problem.

Where do you start when developing an "Active Learning" game?

Rather than design a game in isolation and then launch it on its projected users, with a vague game idea in mind, we went into the field to see and experience classrooms. In addition to observing activities and interactions among our selected age group, it was important for the two team members from other countries to get firsthand experience with an American school. It was important to invest time upfront in this human-centered process of observation and research in order to confront the reality of the student's lives rather than work from common stereotypes.

Establishing a school site for investigation and feedback allowed us to interview and document through tape recording for later review teachers as they discuss their current issues and needs. Observation and documentation of student neighborhoods, classrooms and field trip environments using video ethnography (fascilitated by video and 35mm cameras) allowed us to capture student and teacher behavior in their natural environment as a means to gain insights about how students learn and interact with their teachers and each other. Taking observation notes, collecting data and analyzing the collected material helped us to better understand the student's real life framework.

This led us to prototyping concepts, creating conceptual and behavioral mock-ups which were tested with teachers and students, resulting in later revisions, and a cycle of design developments, re-testing and analysis of test results followed by continuing design refinement. This process of development let the design develop naturally and in touch

with reality as we learned from our final users what was interesting, memorable and fun.

Establishing a site and grade level, an inner city school was chosen within the Chicago Public School System that at first seemed to reflect a diverse demographic student population living in or around the school neighborhood. The seventh grade was selected based on students' cognitive skills of reading, writing and retaining information, which is fairly well developed by this time. Equally important, it is around the seventh grade that students come increasingly in contact with multicultural conflicts and issues, as they engage socially in more independent activities. (We later expanded the grade level from seventh to tenth grade after behavioral prototyping revealed that mixed grade levels could interact, understand the game and mutually enjoy the game interaction).

INTERVIEWS

A discussion with three seventh grade teachers who teach separate classes with the same students alternating study in the subject areas of: Reading, English and Real-World (giving students practical "real-life" hands-on experiences in writing resumes and doing cover letters, etc.) gave us a perspective on classroom goals. We needed to understand the teaching philosophy and discover what tools the teachers needed to help engage their students both in the classroom and on field trips, while at the same time fulfilling the Chicago Public School Curriculum requirements.

Among the questions asked were: *With different cultural backgrounds in your classroom how does this alter your teaching agenda? Do cultural background differences change the classroom? In what ways? What are the current attitudes regarding multiculturalism in your school? Are there any connections between classroom activities and the neighborhood? Are you currently using field trips to stimulate learning activities?*

During subsequent interviews we discussed three initial design concepts in order to get feedback from the teachers before proceeding:

1 *Cultural Calendar*: Kids learn about different cultures, their holidays and practices and incorporate it into their classroom by understanding why some students are not in school for Cinco de Mayo, Hanukkah or Chinese New Year etc.
2 *Mentor Buddy*: Students communicate with other students around the world to understand and help each other resolve conflicts or problems.
3 *Neighborhood Excursions*: Students act like archeologists uncovering facts and clues about cultures within Chicago neighborhoods.

Exploration of these ideas during interviews with teachers resulted in combining the Cultural Calendar and Neighborhood Excursions programs after teachers told us they were searching for new ways to stimulate students into learning things about their own heritage and culture in addition to that of others around them. They even recommended some constraints on the project's development with regard to technology and time.

Why a game?

We wanted to explore the area of games to get students more stimulated and engaged with learning. We discussed this with both students and teachers and they seemed quite interested in the idea. Students told us which games they liked to play the most and why. This helped us gain a better understanding of what motivated them and held their interest. Teachers told us that whatever we came up with should be available both as a computer-based game and as a gameboard as some teachers did not have computers in their classrooms. Length of play was another consideration as time was precious and students' attention tends to wander.

NEIGHBORHOOD OBSERVATIONS

A visual audit using 35mm cameras explored and documented the surrounding neighborhood (which revealed from the interviews that most of the students lived within the districts of five surrounding schools and either walked to school, were bused in or their parents dropped them off). This led to documenting the five "feeder school neighborhoods" that represented the school student population of African-American, Mexican-American, Chinese-American, Korean-American and Polish-American. (Mexican-Americans were predominant). As a complementary activity, a set of box cameras were distributed to the seventh grade students to record their neighborhoods through their own experiences and eyes. Students were asked to document where they lived, who they saw in the neighborhood, where they went to play after school, where they shopped and ate. These photographs were then collected and added to a wall of images with descriptions of activities that represented the students' points-of-view.

figure 1

CLASSROOM OBSERVATIONS

The Reading, English and Real-World classrooms were observed using the AEIOU observation method.[1] This method lets you record short descriptions of what you observe in an environment (*see table* 1).

Two video cameras were mounted in the classrooms to record the daily activities of students which were then reviewed with screen grabs pulled from the videotape and transferred onto electronic files to be used to document activities and behaviors. Students have lots of energy that needs to be harnessed and directed during the time they spend in school (*see figure* 1).

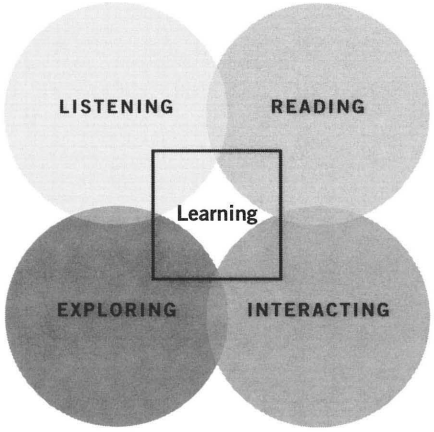


table 1: AEIOU Analysis of classroom

ACTIVITIES
chatting
raising hands
standing
answering
asking question
yawning
making noise
passing
adding to chaos
note taking
reading
writing
pushing
collecting
distributing
sitting
listening
sharing
grouping
touching
erasing
staring
fighting
arguing
walking
playing
turning
drifting
delivering
giving/taking
discussing
ordering
sleeping
thinking
dropping

ENVIRONMENTS
classroom
inner-city
school
lots of trash
multi-cultural

INTERACTIONS
teacher and student
teacher and students
student and student
students and students
student teacher and student
student teacher and students
teacher and student teacher
teacher and reading material
student and reading material
teacher and textbook
student and textbook
student and dictionary
teacher and blackboard
student teacher and blackboard
students and chair
students and desk
students and notebook
teacher and lights
students and lights
student and pencil
student and candies

OBJECTS
desks
chairs
textbooks
computers
notebooks
papers
book shelves
blackboard
information boards
pencils
dictionaries

USERS
teacher
student teacher
students
other teachers
administrators
principal

FIELD TRIP OBSERVATIONS

We not only needed to concentrate on the classroom but also on how learning occurred outside the classroom on field trips. Research has shown that field trips are important for many reasons: they increase student knowledge and understanding of a subject; they add realism to the topic of study; they provide an opportunity to develop and enhance student skills; they build socialization skills (to enable a student to participate actively in a group); and they build citizenship skills (enabling students to become an active member in a community).

Using the AEIOU method along with videotaping, we observed three classrooms on a field trip to a Nature Center north of Chicago (*see table* 2).

Students find field trips "boring" unless they are meaningfully organized. Learning on a field trip is more informative and exploratory, but can be derailed if not explained or contextualized (*see figure* 2).

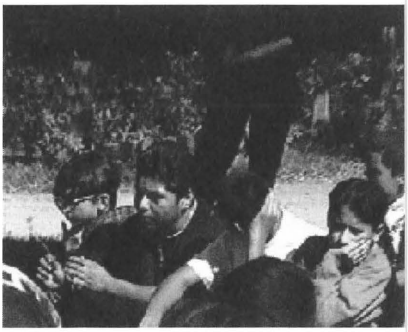


figure 2

DATA COLLECTION AND ANALYSIS

The scale of this project required collecting a large amount of data from field work: interviews, observational research, library research, photographic research, field trip research and box camera/questionnaires from students which were then analyzed and synthesized (*see table* 3).

DEFINING CULTURE

We realized that we could not take culture for granted but had to define and agree on a definition. We wanted to make sure that all the project designers had a similar vision and understanding before continuing to develop the project in detail. After reviewing the ethnic neighborhoods, we went back to examine what culture is. Avoiding stereotyping, as

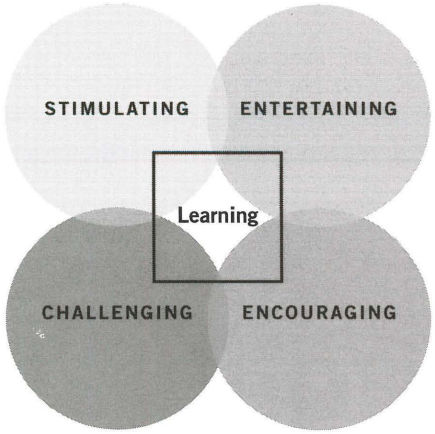


table 2: AEIOU Analysis of fieldtrip

ACTIVITIES
talking
standing
answering
asking question
yawning
running
reading
pushing
photo taking
yelling
crying
screaming
sitting
listening
grouping
touching
observing
walking
playing
giving/taking
ordering
eating
following
picking trash up
explaining
complaining

ENVIRONMENTS
river trail
nature center
woods

INTERACTIONS
teacher and student
teacher and students
student and student
students and students
teacher and teacher
teacher and teachers
students and teachers
students and foods
teachers and foods
students and animals
teacher and animals
students and plants
teacher and plants
teacher, mushroom and students
teacher, student and school bus
students and speaker
students and information tags
students and cameras
students and water pump
students and museum

OBJECTS
trees
animals
water pump
balls
foods
plants
school buses
information booklets
information tags
backpacks
coats/jackets
string

USERS
teacher
students
principal
chaparones
nature center workers

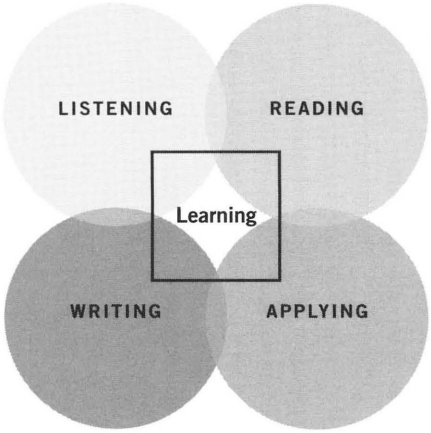


table 3: AEIOU Analysis of student box camera/questionnaires

ACTIVITIES
staring
talking
passing
shopping
eating
walking
running
driving
sitting
waiting
standing
yelling
playing
grouping
fearing
parking
playing
singing
observing
paying
selecting
window shopping
relaxing
gathering
pushing
browsing
caring
holding
yawning
entertaining

ENVIRONMENTS
houses
apartments
schools
churches
restaurants
grocery stores
pharmacies
bakeries
flower shops
libraries
book stores
park
gas stations
foreign languages
gang signs
banks
fire department
police department
community center
fast food stores
noise
laundries
theaters

INTERACTIONS
people and people
neighbors and neighbors
customers and seller
children and children
adults and children
people and food cart
children and ball
children and park
people and road
people and stores
people and bus station
people and cars
people and parking meter
people and dog
people and houses/ apartments
people and chairs
people and money
people and policeman
people and traffic signals
people and foods
people and signs

OBJECTS
gang signs
road
buses
traffic signals
cultural items
flags
signs
foreign language signs
trash cans
gate
cars
trees
money
police cars
garbage trucks
school buses
wall painting
baby stroller
ATM
newspapers
shopping bags
garages
food cart
foods
road name signs

USERS
women
men
girls
boys
cats
dogs
neighbors
visitors
students
shoppers
salesman
constructors
policeman

we created the game cards became a serious issue. Whether we should cover only "nationality" (sharing a heritage and history) or "ethnicity" (based on traditions, rituals, codes of language, norms) or both on the game cards became the main issue and focus of deliberation. (Remember, we had three designers working on this project who themselves represented vast differences in both nationality and ethnicity, each was a citizen of a different country and culture: Japan, Korea and the United States. Each of us saw the images on the cards in a different way.)

We broke down types of cultures and looked at the effects that gender, profession, geography, organizations, community (homogeneous-heterogeneous) and types of relationships have on defining a culture while avoiding stereotypes.

In addition, we understood nationality as defining a person born in a particular country, who has spent a significant number of years socializing in that country. We understood nationality as being fairly abstract and generalized. On the other hand, we looked at ethnicity as being defined by most people as sharing physical racial characteristics and sharing a specific history of having experienced discrimination. Most share a sense of heritage/history (which for some was origin from an area outside of/preceding the creation of their present nation-state of residence).

Our informal understanding created some insecurity so we consulted formal definitions and found: "Culture is defined as a historically transmitted system of symbols, meanings, and norms."[2] "The integrated pattern of human behavior that includes thought, speech, action and artifacts and depends upon man's capacity for learning and transmitting knowledge to succeeding generations. The customary beliefs, social forms, and material traits of a racial, religious, or social group."[3]

This led us to believe that we should focus on constructing a game with a focus on ethnicity (history and heritage)

and to use each culture's national flags to represent each neighborhood after observing that within Chicago neighborhoods flags of many nations are proudly displayed not only in yards, but also on car antennas.

A game concept began to emerge – developing a metaphor.

We decided to explore the possibility of using a metaphor to define what CurioCity could be as a game. Several directions were explored based on games structured like Space Invaders, Scavenger Hunt, or Archeological Expedition. After reviewing the metaphors, we decided to combine the Scavenger Hunt/Archeological Expedition into the neighborhood scenario. Out of this process came an idea to create a gameboard that focused on an expedition through multiculturalism in Chicago neighborhoods.

Students learn and remember concepts better when they are integrated into a redundant scheme and are actually used or manipulated by them. We positioned this game to be an important process in the field trip experience. The diagram indicates how the game would be able to connect the entire field trip experience including before and after the trip back into the classroom (*see figure* 3).

PROTOTYPE DEVELOPMENT

The key features of an educational game became the next area for exploration. After talking with several people at museums and in the neighborhoods and completing cultural diversity research, additional research was needed to design a gameboard. In a way games are ubiquitous. We all have experience with them, but we do not usually examine them analytically. First we explored and played with several board-games and computer games like: *Monopoly, Clue, Candyland, Myst, Where In The World Is Carmen Sandiego?* and *SimCity* in an attempt to analyze the advantages and

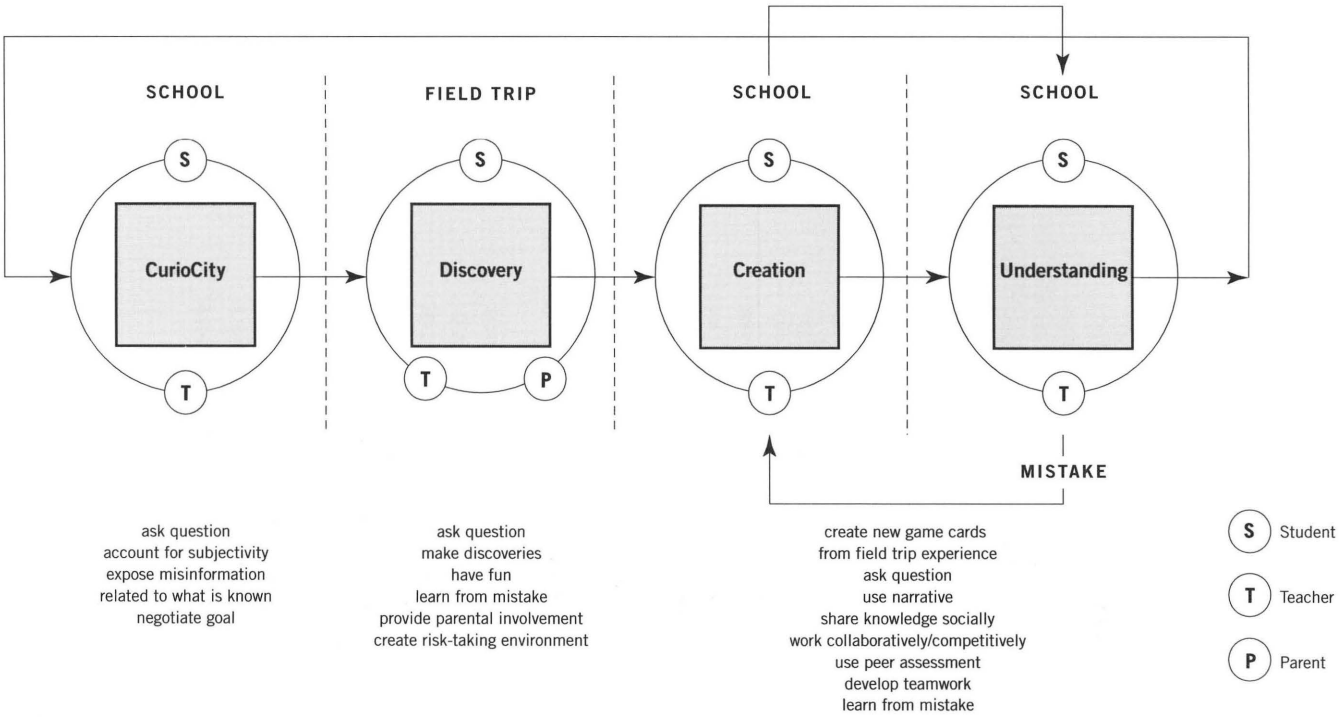


figure 3: Game Concept Development

We positioned this game to be an important process in the field trip experience. The diagram above indicates how our game will be able to connect whole field trip experiences including before and after the trip.

disadvantages when engaging one or more players, to observe how various control techniques like rolling dice and making decisions go together, how long a "turn" lasts and how this alters the players attention.

We identified five stages in developing a game:

1 *analysis of the ideas* (what the game should be about),
2 *the actual design of the game* (looking at what form it should have, what size it should be, etc.),
3 *development* (making prototypes which explored different layout configurations),
4 *implementation* (actually putting paper prototypes together for testing) and then
5 *evaluation* (video-taping students and teachers actually playing the game to test the potential of the game).

There were also two very different format directions that had to be examined:

1 *non-computer formats like*: card games, board games and role playing games; and
2 *computer-based formats like*: arcade games, adventure games, fantasy games, interactive stories, causal simulations and procedural simulations.

Before advancing to the next step in building a prototype we had to be clear about the objective of this game, which we identified as:

TEACHING STUDENTS ABOUT CULTURAL DIFFERENCES AND RESPECTING EACH CULTURE USING A VARIETY OF CHICAGO NEIGHBORHOODS; MAKING OUT-OF-CLASS ACTIVITIES MORE EFFECTIVE BY CONNECTING BEFORE AND AFTER FIELD TRIP EXPERIENCES AND THE FIELD TRIP ITSELF; AND ENCOURAGING STUDENTS TO WORK AS A TEAM.

We created a check list for game priorities by answering the following questions: *Is the game simple to understand and use? Can this game be played in a limited time? Is this*

game fun to play as a group? How small or large? Does this game encourage students' curiosity about their neighborhoods? Does this game make learning fun? Is this game about "Questions & Answers?" (We decided against the later approach as the game should challenge students beyond answering questions by engaging them beyond memorization into a more active learning role.)

A prototype for the game cards began to emerge. We went to each of the five neighborhoods in question, Chinese, Mexican, Korean, Polish and African-American and photographed architecture, signs, costumes, food and stores. We visited each of the libraries within those neighborhoods to research images that best represented each culture. The Chicago Historical Society, DuSable/Afro-American Museum and the Polish Museum provided indepth clues for the back of the cards and images for the front of the cards. Photos were taken and scanned into the computer and then mounted to the card front (image side) with the card back (word clues side) containing information to read about the image and its "neighborhood" (*see figure* 4).

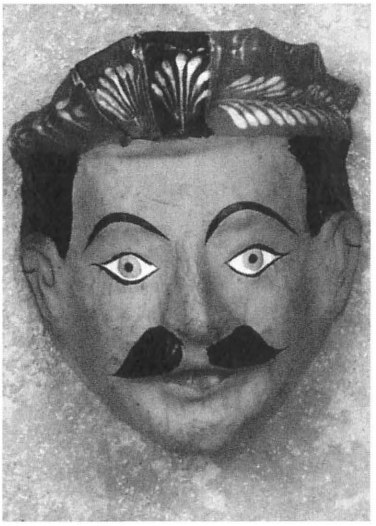


figure 4: Front of card

Paper maché mask used in festivals

Mexican American Neighborhood

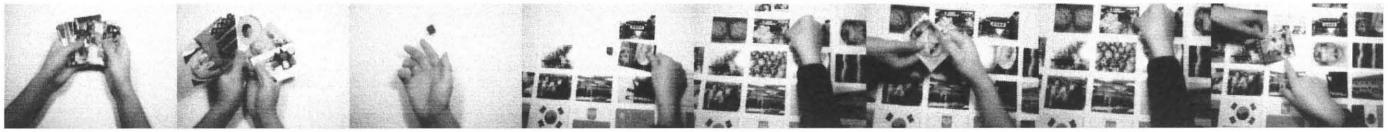
Back of card

A prototype of the gameboard emerged.

We made a simple white foamcore prototype of the gameboard that had five ruled boxes defining the neighborhoods where the cards were to be placed. (We did not want a colored version of the gameboard for the behavioral prototype test as we didn't want it to look too finished since we were testing for ease-of-use to see if the cards were interesting). There were five boxes across the bottom of the gameboard that were numbered 1 thru 5 and had colored cards placed on each square identifying the neighborhood. *Example: Chinese American card had the flag of China and the words Chinese Amercan underneath the flag.* In total there were twenty-five squares on the board on which to play and build neighborhoods. The gameboard was a standard 20" x 20" square that could be folded and stored in the limited space of a classroom. The game cards were the size of standard vertical (3 1/2" x 2 1/2") playing cards so students could comfortably hold up to six in their hands at once.

Prototyping game rules was important when we took the game to the school for play. Could students read the rules and understand how to play the game without help? Game instructions were devised for 2-4 players and 4-8 players. These contained visual descriptions with supporting copy underneath them (*see figure* 5).

The gameboard was developed first because it is a less labor intensive prototype than a working computer game. Recall that teachers preferred to have the game both as a boardgame and computer-based game. A game-board was also useful as a prototype prior to moving into a computer-based game as user problems could be effectively worked out and the game play could be interactively tuned.



1
Shuffle the cards.

2
Each player gets six cards.

3
Roll the dice. The one with the highest number goes first. Person on left side of first player goes next.

4
The one who goes first rolls dice to see what neighborhood they play first. If you get six on dice, you can pick any neighborhood. There are five Chicago neighborhoods that you can play.

5
Pick a card out of the six cards you are holding and place anywhere on the vertical row neighborhood that matches the number on the dice with the number on the gameboard. If someone challenges you that your card is wrong, but your card is correct, the challenger has to take one of your cards.

6
If you don't have a card for the neighborhood you need:
a. Ask other players if they have the card you need and place this card on the gameboard.
b. You can bluff and put a card down hoping that nobody notices that it is wrong. If anyone notices, they can challenge you and if you are wrong you have to pick up the wrong card and take one card from the challenger and add to your cards. You know that the card is wrong by turning it over for information about that neighborhood.

7
The next player to roll dice puts down card on the neighborhood that matches dice and gameboard number. Follow instruction four. If neighborhood is filled up roll dice only once. But, if you notice there is a wrong card in filled in neighborhood and you still have a card, you can replace the wrong card with your card.

8
Remember, the person to use up all their cards first wins! But the other players should continue to play. When game is over, all players should complete any missing spots on the gameboard together.

figure 5: Game Instructions Development

For Four Players: The object of this game is to use up all the cards in your hand as you build and learn about Chicago neighborhoods. The one who uses up all their cards first wins.

For Eight Players: There are two players on each team that make one decision. The object of this game is to use up all the cards in your hand as you build and learn about Chicago neighborhoods. The one who uses up all their cards first wins.

HOW TO PLAY THE GAME

Prior to leaving the classroom, students learn about Chicago neighborhoods through clues given on the back of neighborhood cards they played on a the CurioCity gameboard. The prototype gameboard focused on five neighborhoods for simultaneous play: Chinese-American, African-American, Mexican-American, Polish-American and Korean-American. (Eventually the real gameboard could have up to twenty Chicago neighborhoods that players could choose from for play, but only five could be "in play" at one time). Students could play one-on-one or in teams of four. The idea was to role a dice to begin the game to see who went first and to establish a playing order. Throughout the game, students had the option of either putting a card down on a correct neighborhood, or putting an incorrect card down (*Bluffing*) on a neighborhood and hoping an opponent didn't catch it (*Challenge*), or they could (*Ask*) request a card from another player if they didn't have the correct one. The game objective is to unload all your cards first. Even though you won after doing this, the other players continue to play until there is only one player with a card still remaining. Students then have to cooperatively figure out if all the cards are in the correct neighborhoods and work together to make them correct. It is through this "active learning" process that we expect to engage students, beyond the game's fun and competition, by leading them into reading and learning information about their city's multiculturalism from the cards.

THE FIELD TRIP

The game is part of a total experience. After playing the game, the teacher also gives students information through readings and discussion and defines the purpose of the field trip they are about to embark on prior to leaving the

classroom. Students then act as archeologists observing, photographing, sketching and collecting artifacts as they explore and discover the neighborhoods. Upon their return to the classroom, students could choose to play the game again or go into a collective Excursion Journal (paper-based) to learn additional things about the neighborhoods or begin to archive and record what they had learned in their own personal journals. The teacher might even want to have students build a "Cultural Museum" in the classroom from artifacts collected during the field-trip. These artifacts can also be used to create new cards for the game.

FINAL PROTOTYPE TESTING

Two video cameras were set up in a classroom to observe several sets of students playing the game using the foamcore gameboard and full color game cards. We tested: 4-individual players, 4-players with 2 on each team, 8-players with two players on each team, students playing each other and teacher and students playing each other. When 4 players played it took twelve minutes and when 8 players played it took fourteen minutes.

Reviewing the video tapes along with several AEIOU observations we discovered that: the students not only understood the game and how to play it, but were speaking in English and Spanish as they played. Teachers were just as engaged while playing with students as the students were. Students relied more on reading the clues on the back of the cards than on the images on the front of the cards. Students were retaining and remembering information when they were "Challenged" or "Bluffed" and when a card went down on the gameboard in an incorrect location.

We identified several advantages to gameboard play.

1 *Face to face interaction.* We observed that players were more excited when they were interacting with other players. For example, when one player (or team) was "Bluffing,"

the other players were trying to decode facial expressions, posture, etc.

2 *Team partner*. Students wanted to play both with a partner and as an individual player. Students seemed to enjoy the game more when they had partners. Sharing knowledge with a team mate became a strategy to win the game.

3 *Game rules*. First time players asked students who had already played the game questions about the rules of the game. Students preferred to learn the rules from each other rather than through reading them.

4 *No special equipment was required*. To play the game all that was needed were players, a place to play, a table and chairs and the game itself.

After testing and analysis were completed, we prototyped the Excursion Journal which teachers could use as a guide with suggestions to extend program applications so that things didn't just end after playing the game or after returning from a field trip. This program was designed to fulfill Chicago Public School Curriculum Requirements of Reading, Writing and Real-World applications in addition to creating an "active learning" tool that teachers could use to stimulate learning.

In addition to using the game cards that were included with the gameboard, students could also keep the game alive by creating new cards for the game after they returned from neighborhood field trips, drawing on their "archeological" photographs, drawings and other research.

In the end, CurioCity initiates new ways to "actively learn" about multiculturalism through an integrated field trip/game into Chicago neighborhoods that gives students "hands-on" practical knowledge and skills that can't be gained through textbooks alone. It could also be expanded into other subject areas such as math and science and serve as an across the curriculum bridge. CurioCity could be further developed as a template which could accomodate other cities around the United States where students not only

learn about cultures in their backyard, but about those in other regions of the country. In this way the game can be both customized to local culture and shared nationally.

As far as developing a computer-based game for CurioCity a similar study was conducted using a Chicago Charter School (grades seventh to tenth) with a new team of designers. Adapting the game to an interactive computer environment presented new challenges. The process of prototype development and observation of users interacting with the game was similar to the study presented here, but that's an entirely new and interesting story in itself.

ACKNOWLEDGEMENT

I wish to acknowledge my fellow team members, Chiho Sasaki and Seungyoon Han for their help and insight in guiding this game through the process of human-centered design. Many thanks to the students and teachers Krista Alvarez, Dan August and Phil Keithly at the Thurgood Marshall Middle School in Chicago for allowing us into their classrooms and giving us their valuable time and experience.

Lynne Ferguson is combining her years of professional design experience with Texas Instruments, an undergraduate degree in graphic design from Art Center College of Design with her current graduate program in human-centered communication design at the Illinois Institute of Technology's Institute of Design. Her professional interests include: user-centered social science processes in design, writing, photography and film.

ENDNOTES

1 The AEIUO framework was developed by Dr. Rick E. Robinson, E-Lab, Chicago.

2 Collier & Thomas, 1988; Geertz, 1983; Schneider, 1976.

3 Webster Dictionary, 1989.

REFERENCES

Abramms, Bob, Diane J. Johnson and George Simons. 1995. *Cultural Diversity Fieldbook*. Princeton, New Jersey.

Almstrom, James, Tim Pribe and Paul Rothstein. 1997. The Out-of-Classroom Experience. An unpublished Institute of Design workshop document.

Bang, Soo-Jung. 1988. *Beauty of Korea*. Seoul: National Museum of Korea.

Bonvillain, Nancy. 1993. *Language, Culture and Communication: The Meaning of Messages*. New Jersey: Prentice Hall.

Chicago Chinatown Homepage.
http://www.ci.chi.il.us/tourism/postcards/big/chinatown2/

Chicago Fact Book Empowerment Zone. 1997.
http://www.ci.chi.il.us/WorksMart/Planning/chgoFacts/Emp.Zone.html

Chicago Koreatown Homepage.
http://www.ko.chi.il.us/tourism/postcards/big/koreatown/

Chicago Public Schools. 1997. Expecting More. Higher Standards for Chicago's Students. Chicago: Chicago Public Schools.

Collins and Cohen. 1993. *The African Americans*. New York: Viking Studio Books.

Community News Project.
http://www.mcs.net/~commnews/

Disinger, John F. 1997. "Field Instructions in School Settings."
ERIC/SMEAC Environmental Education Digest No. 1, ED259935.

Edmonson, Brad. 1995. "Chicago Colors, American Demographics." Cowles Business Media, April.

Elementary Social Studies Field Trip.
http://www.ns2.mcps.k12.md.us/curriculum/socialstd/FT/Field Trip start.html

Field Trips and Outdoor School. 1997.
http://www.sd45.bc.ca/sd45/gleneagles/hbfield.html

Fris-Pierazkowa, E. and A. Kunczynska-Iracka and M. Pokropek. 1988.
Sztuka Ludowa w Polsce. Wydawnictwo: Arkady.

Game Design Overview. 1997.
http://www. edweb.sdsu.edu/courses/edfec670/GameDesign.html

Geum, Ki-Sook. 1995. *Chosun Bokjang Misul* (The Beauty of Korean Traditional Costume). Seoul: Youl Hwa Dang Publisher.

Holli, G. Melvin. 1995. *Ethnic Chicago, A Multicultural Portrait*. Michigan: Eerdmans Publishing.

Illinois State Geological Survey
http://www.denr1.igis.uiuc.edu/isgsroot/servs/pubs/

Jang, Sa-Hoon. 1994. *Woo-Ree Yet Ak-Ki* (Our Ancient Musical Instruments).
Seoul: Daewonsa Publishing Cp., Ltd.

Kubota, H. 1992. *From Sea to Shining Sea*. New York: W.W. Norton & Company.

Kuniczak, W.S. 1978. *My Name Is Million*. New York: Doubleday & Company.

Kim, Sang-Heon, Dong-Heon Kim and Dong-Sun Koak. 1994. *Pulguksa* (Temple Pulguksa).
Seoul: Daewonsa Publishing Co., Ltd.

Layfayette High School Field Trip Recommendations. 1997.
http://www.lafayette.wjcc.k12.va.us/restruc/block.html

Linton, Cynthia. 1997. *The Ethnic Handbook, A Guide to the Cultures and Traditions of Chicago's Diverse Communities*. Chicago: Illinois Ethnic Coalition Publication.

Lym, Jaehae. 1992. *An-Dong Ha-Hoey Ma-Eul* (Ha-Hoey Ma-Eunl in An-Dong).
Seoul: Daewonsa Publishing Co., Ltd.

Porter, Richard E. and Larry A. Sasmovar. 1996. *Intercultural Communication*.
Belmont, California: Wadsworth Publishing Co.

SimCity2000. California: Maxis.

B U
R E

REVIEWS

THE FLUXUS READER

KEN FRIEDMAN, EDITOR

West Sussux, United Kingdom: Academy Editions, 1998
ISBN 0-471-97858-2, 308 pages, no illustrations, $29.95

In 1992, *Visible Language* published a special issue on Fluxus: A Conceptual Country (26:1/2), edited by Estera Milman at the University of Iowa. At that time an extensive traveling show of fluxus works was making the rounds of university museums. I saw the exhibit at Northwestern University and was immediately struck by its humor, variety and the casual nature of its "art." Several extensive books came out in the next year or two. *The Fluxus Reader* is the latest volume to attempt to define and historically place this elusive idea.

The editor, Ken Friedman, mentioned that the "poetic and playful dimensions of Fluxus often involve intensely practical phenomena." In his introduction Friedman discounts fluxus as a specific group of people or objects, but instead focuses on its importance as an idea with potential for social change. The fluxus research program has twelve ideas: **globalism, the unity of art and life, intermedia, experimentalism, chance, playfulness, simplicity, implicativeness, exemplativism, specificity, presence in time and musicality.** Of these only last few require explanation. Implicativeness relates fluxus works with many more works; it sets up a kind of connectedness. Exemplativism demonstrates fluxus theory through its construction and

presence in fluxus work. Presence in time refers to the fact that time is a central concern in fluxus, whether brief, recurring or of long duration. Musicality refers to the fact that many fluxus works are designed as scores for performance that can be performed by others than those originally involved.

As much as anything, fluxus is a way of doing things – of viewing society and creating life enhancing activity. Evading a precise definition, remaining open to change and chance, fluxus continues to evolve despite those who would mark an historical conclusion.

The book is divided into six parts: histories, theories, critical and historical perspectives, interviews, more theories and documents.

Fluxus stands in opposition to the commodification of art which was and continues to be the standard practice both in the 50's and 60's when fluxus was forming and now. Ay-O, one of the fluxus artists, is a good example of fluxus aims. His performances were often so subtle that most people failed to even see them. Ay-O's understanding of fluxus meant that he felt justified in simply talking to people, perhaps performing very simple and delicate events, such as sitting and burning small pyres built of matches, watched by only one or two people.

Hannah Higgins gives three good examples of the diversity of fluxus artists and their works in her chapter, Fluxus Fortuna. One is Dick Higgins, who created 'Danger Music' performance scores and his "Thousand Symphonies." The symphonies were created by shooting a machine gun through music paper and then spray painting through the holes. Intentionality is removed, while the gesture of the composer remains.

Another is Emmet Williams, whose concrete poem "In Four Directional Song of Doubt" is performed by a chorus of five readers who perform variations on the statement "You just never quite know." They read from cards "divided

into one-hundred square grids which are then marked with ten signal dots (each of which replaces a word) in a linear progression. A metronome ticks for one-hundred ticks, and the words are either spoken or substituted with sounds or gestures. The doubt, a *double entendre*, lies in the negative statement about cognition (to doubt) as well as in the chance performance of the text itself." (54)

Yet another is Larry Miller, who developed an interest in clinical reference in Fluxus. His "Orifice Flux Plugs" from 1974 ranged from ear plugs to condoms and bullets. In 1992 in Cologne, Miller was copyrighting the genetic code of his friends, audience members and fellow artists with full knowledge that such codes could be copyrighted (owned and protected) even before they were known. Now in the "post-Dolly" era of successful cloning "...genetic copyrights become a remarkably elastic document in space and time. They evoke a clinicism in fluxus that is at once earnest and humorous. Copyrighted, we become as documents ourselves – measured, contained and ordered in place and time, yet moving beyond the present moment." (57)

Another chapter, Zen Vaudeville, by David T. Doris, examines the strong connection between Fluxus and Zen. Fluxus questions what constitutes "art," while Zen interrogates the limits of consciousness. These are different perspectives on the same question. "Like Zen, Fluxus uses language to force a confrontation with the inadequacies of language, and posits instead a field of direct experience that eludes systematization."(99) Doris makes the comparison more obvious: "Like the blasphemies of the Zen koan, the irreverent wackiness of many Fluxus works condemns self-serving notions of the sacred in art. For the artists of fluxus, no act was absolute, no art work was transcendent, and no artist was above receiving a pie in the face. In Zen and in Fluxus, humor throws a monkey-wrench into the smooth operation of the given and the known, posing instead a fragmented world of questions, of absolute

instability, a stream of flux in which the integrity of both the object and the subject are perpetually up for grabs." (121)

Citing a Ken Friedman work which consists of the following text: "The distance from this sentence to your eye is my sculpture," another contributor to this book observes that normal criteria for sculpture is ignored, interaction with the spectator is emphasized, the fluid space between art and viewer becomes the unexpected subject, with art becoming multi-valent and socio-poetic. Friedman states that the essence of fluxus is transformation. Fluxus can be seen as an inconsequential amusement and ephemeral production, but it challenges notions of representation, particularly the given formalities of representation, and instead provokes a full range of emotion – awe, dread, laughter, disgust and surprise. It questions the experience of being human and even suggests that art should "lighten up."

Reviewed by Sharon Poggenpohl,
editor of *Visible Language*.

IMAGINING LANGUAGE, AN ANTHOLOGY

JED RASULA AND STEVE MCCAFFERY, EDITORS
Cambridge: MIT Press, 1998
ISBN 0-262-18186-x 618 pages, hardbound, illustrated, $55.00

Imagining Language is an extensive anthology that examines what falls beyond the canon as an array of linguistic explorations that are creative conjecture or literary exception. In their zeal for ferreting out this material, the editors cross three millenia with selections that "range from the communal endeavor to the private delusion, from the memorably idiosyncratic to philanthropically motivated spelling reforms."(x)

This is not a chronology, but a gathering of congruence in five parts in which each develops a familiar principle. Part One, "Revolution of the Word," explores the international modernist adventure through a strategy of defamiliarization. Part Two, "Oralities, Rituals, and Colloquies," relates sound poetry and its extensions into oral practices. Part Three, "Lost and Found in Translation," examines linguistic boundaries. Part Four, "Letters to Words," charts the linguistic sign from alphabetic unit to word, and from meaning to noise. Part Five, "Matter and Atom," develops an historical tradition based on linguistic microparticles that document language affiliation.

Entries are not forced into a standardized format, but are allowed to develop in appropriate detail or length depending on information needs. Samples of text, visual demonstration, background information, editorial reflection on meaning and inter-entry connections are used as needed or as it adds interest.

No concrete or visual poetry is included as it is well documented elsewhere. The usual modernist suspects, like

Breton, Appollinaire and Marinetti are also absent. While this large volume is extensive, its editors make no claim for a complete inventory, but liken the collection to a circus. And a provocative circus it is.

The material presented is often relatively unknown to outright obscure – as such this book expands our thinking about language in the broadest sense. For example, here we find Alexander Graham Bell's Oral Gymnastics, in which one is to "pronounce each of the following difficult combinations of syllables five or six times without superfluous motion of the articulating organs." Accents and tones are to be varied. A sample exercise is partially presented below indicating its structure.

ip it, ip ik, it ik, it ip, ik it, ik ip.
or
ip it ip, ip ik ip, it ik it, it ip it, ik it ik, ik ip ik, etc. (99)

The next entry is from Aristophanes *The Birds* in which sound is used to parody Socratic discourse. From *The Birds*:

Hi! Hoopoe! Yoo-hoe! Hoop-ahoy! Hoop-hip a-hoop-hip ahoy! Tio tio tio tio Tio tio tio tio Trio to trio to totobrix Toro toro toro torotix...

Futurists, dadaists, surrealists, both known and of lesser exposure are represented as well.

In another section, language invention is the subject for investigation. Thomas More invented the first imaginary language in *Utopia* which is presented "Quatrainin Utopian Vernacular" with a Latin translation. The characters of this imaginary language consist of variations on rectangles, circles, triangles and right angles. Hoaxes centering on fabricated language and glossolalia, even a "Martian" script transmitted to the recipient while in a hallucinatory state, as well as twentieth-century science fiction languages

like Klingon, Tolkien's Middle-Earth and others of various invention and purpose are presented.

Literary and visual presentational language are both present in this anthology. Schemmas and devices to generate combinatorial language production, some of rare beauty as revealed in old manuscript reproductions from the seventeenth century as well as contemporary textual manipulations such as *A Humument*, Tom Phillips' "treated novel," are also presented. Alphabetic mysteries, alphabetic architecture, Rongo Rongo from Easter Island and other perplexing language extravaganzas provoke the reader's interest.

Woven throughout various entries is reference to the "clinamen," which refers to the minimal swerve of an atom in laminar flows as described by Lucretius in *De rerum natura* (1682). Just as atoms with a slight change in structure can form wood or fire, for example, so letters by changing position or absenting themselves can form different words. Thus "atoms then are to bodies what letters are to words: heterogeneous, deviant, and combinatory."(532) Julia Kristeva is quoted as describing the graphic manifestations of linguistic fallout as: "assemblages of signifying, phonic, and scriptural atoms, flying from word to word, creating in this way unsuspected and unconscious connections among the elements of discourse." The very stability of language and meaning is put into motion by this collection.

French philosophers and literary theorists have substantially influenced the editors in their quest and consideration of these materials. In essence the book is a kind of cosmological speculation combined with a theory of language. The collection is like an obsession, a madness of language that tantalizes its editors and participants alike as they seek to connect the forms over time and space to reveal language's hidden secrets of method and meaning.

Reviewed by Sharon Poggenpohl,
editor of *Visible Language*.

A NEW DICTIONARY OF THE AVANT-GARDES

RICHARD KOSTELANETZ

New York: Schirmer/Macmillan
Expected publication in 2000

The following is an excerpt from *A New Dictionary of the Avant-Gardes* which will contain one-thousand entries.

FLAIR (1951-51, 1952). By the measure of design alone, this was by far the most innovative magazine of its times. Founded by Fleur Cowles (c. 1922), a sometime painter who was at the time married to an heir to the Cowles family that published *Look*, among other slick magazines, *Flair* was initially a monthly that sold on newsstands for fifty cents (until killed after a year) and then a single annual that was copyright in 1952. I know first the latter, which is essentially a clothbound book, 10" wide by 14" high, with a rectangular hole in its elegantly patterned cover. In the pages of the book are many sections, as in a conventional periodical; however, each is designed quite differently from all the others, sometimes on paper perceptibly different in texture and/or size from the sections around it. Just as some sections of *Flair* include pages that fold out or upwards, others have partial cut-aways whose loose edges must be lifted to reveal imagery underneath. Bound into the book are small booklets, each with a single subject. No one would dispute the magazine's one-word title, which seems in retrospect an understatement.

As the table of contents says nothing about designs, *The Flair Annual 1953*, as it is called, must be read from beginning to end. Different in appearance, the short sections are likewise culturally different from one another; so that, for instance, a two-page spread about translations

of the German poet Rainer Maria Rilke precedes a single page announcing new recordings of the music of Edgar Varese, which is followed in turn by the score of a nineteenth century musical exercise for children. Elsewhere in *The Flair Annual 1953* is a reproduction of three pages of "The Great Paris Polyglot," which is a sixteenth-century Bible with Genesis in parallel columns of Hebrew, Chaldean and Greek, with separate Latin translations of all three. Tightly bound into the book's gutter is a twelve-page booklet, 6" high and 9" wide, of Katharine Anne Porter's prose text, *The Flower of Flowers*. Saul Steinberg drawings of New York City precede turn-of-the-century NYC photographs by Percy C. Byron, who was apparently still alive at the time.

In her introduction to a retrospective published decades later, *The Best of Flair* (1996), Cowles wrote of wanting to realize in her magazine "a sense of surprise instead of the rigid magazine make up." In that sense of establishing identity through wild variety, *Flair* resembles (and presages) an "assembling" more than a standard magazine. Appearing more than four decades after its death, this large book, 34 cm high and 25 1/2 cm wide (13 1/4" x 10") is a spectacular self-retrospective, in the respectable tradition of a magazine remembering its strongest front, effectively epitomizing *Flair's* alternative editing strategy and reproducing design departures that still look fresh. Perhaps because of its origins in commercial publishing, *Flair* is rarely mentioned in the histories of significant American magazines. Indicatively, when *The Best of Flair* appeared, it was scarcely noticed and quickly remaindered (for $100 instead of $250), its legendary reputation among print designers notwithstanding.

INDEX

VOLUME 33 BY AUTHOR

VOLUME 33 BY TITLE

Page distribution in Volume 33: 1-96 are in 33:1; 97-192 are in 33:2; 193-320 are in 33:3.

Editorial correspondence, manuscripts, inquiries about research and other contributions to the journal should be addressed to the editor. Letters to the editor are welcome. The editor will also relay to the author questions or comments on any article. Your response – and the author's reply – will not be published without your permission and your approval of any editing. If you are interested in submitting an article to the journal and would like a copy of our Notes on the Preparation of a Manuscript, please request this information from the editor or obtain from the journal's website at www.id.iit.edu/visiblelanguage. Editorial correspondence should be addressed to:

Prof. Sharon Helmer Poggenpohl
Editor, *Visible Language*
Institute of Design, IIT
350 North LaSalle Street
Chicago, Illinois 60610
312 595 4921 *tel*
312 595 4902 *fax*
poggenpohl@id.iit.edu *e-mail*

If you are interested in serving as guest editor for a special issue devoted to your specific research interest, write to the editor, outlining the general ideas you have in mind and listing a half dozen or so topics and possible authors. If you would rather discuss the idea first, call the editor at: 312 595 4921.

Business correspondence, subscriptions, advertising and related matters should be addressed to:

Visible Language
Rhode Island School of Design
Graphic Design Department
2 College Street
Providence, Rhode Island 02903
401 454 6171

JOURNAL INFORMATION

SUBSCRIPTION RATES

UNITED STATES	1 YEAR	2 YEAR	3 YEAR
Individual	$35.00	$65.00	$90.00
Institutional	$65.00	$124.00	$183.00

* **FOREIGN**	1 YEAR	2 YEAR	3 YEAR
Individual	$42.00	$79.00	$111.00
Institutional	$72.00	$138.00	$204.00

Prepayment is required.
Make checks payable to *Visible Language* in U.S. currency only, foreign banks need a U.S. correspondent bank.

* Foreign subscriptions include additional postage ($7.00 per year).

ISSN 0022-2224
Published continuously since 1967.
Index included in last issue of volume year.

BACK COPIES
A limited number of nearly all back numbers is available. A booklet listing the contents of all past journal issues is available on request. Individual reprints are not available.

ADVERTISING
Detailed information about advertising is available on request.