

**the arrival of the beeBox : an Exploration of Spatial Text**

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## INTRODUCTION

Of all the constraints in nature, the most far-reaching are imposed by space. For space itself has a structure that influences the shape of every existing thing. The idea that space has structure may sound strange, since we usually think of space as a kind of nothingness ... as the passive backdrop for the lively play of all material things. It turns out that the backdrop is not so passive. The nothingness has an architecture that makes real demands on things. Every form, every pattern, every existing thing pays a price for its existence by conforming to the structural dictates of space. <sup>1</sup>

Spatial relationships are fundamental to every aspect of our lives. We divide our world into manageable regions, clustering like things together. A collection of buildings becomes a neighborhood, roads in New York City running north-south are “avenues” and roads running east-west are labeled “streets”. I wish to harness our incredible capacity for navigating through and creating meaningful sub-divisions of space; and apply it to poetry. Thousands of years of organizing poetry as a linear literary form has led to many conventions of how we read and understand poems. For example, poems have a beginning and end, we can easily grasp their length by looking at them. End of line rhymes accentuate the structure and rhythm for oral recitations.

My hypothesis is that extending poetry beyond the printed page into three dimensions will lead to novel ways of representing relationships between words,

as well as the evolution of new patterns of reading and rhythm. Text arranged in three dimensions can be constructed and analyzed on the basis of concepts, such as depth and layering, that are severely limited or imprecise when applied to two dimensional text. I intend to build on, and not to eradicate, what makes poetry work on the flat space of the page. With my work in three-dimensional poetry, I will demonstrate that space is a valid possibility for enhancing and supporting literary expression.

I am interested in developing a grammar for three-dimensional space; that is, encoding the basic principles that will guide creators and readers of spatial texts. Rules for understanding the relationship among words written in a straight line are well-established and accessible; e.g. we read English left-to-right. How do we read two sentences at right angles to one another? There are no established rules. What new meanings could emerge? In my three-dimensional poem *the arrival of the beeBox* I begin to investigate the effect of spatial arrangement on the meaning and experience of text. The concepts I focus on are the interaction of surface and depth, the use of regions to organize space, the direction of reading, as well as perceptual distance and motion of verses.

## HISTORICAL EXAMPLES OF SPATIAL POETRY

Systems for reading poetry and visual arrangements of poetic text have existed almost as long as poetry. Special methods for reading texts or arranging letters reinforce the fact that poetry is more than meets the eye. One example known to date back at least to the 4<sup>th</sup> century BC is the chiasmic method, where one reads the first line, last line, second line, second-to-last line, and so on.<sup>2</sup> Deviating from a conventional top-to-bottom perusal stresses the ritual of reading the text, it becomes another layer of the overall literary experience of a poem. It also signifies an awareness of the space that each line occupies in relation to other lines. Another ancient example is the *Enigma of Sator*, a word square that dates from the 2<sup>nd</sup> century AD.

<b>S</b>	<b>A</b>	<b>T</b>	<b>O</b>	<b>R</b>
<b>A</b>	<b>R</b>	<b>E</b>	<b>P</b>	<b>O</b>
<b>T</b>	<b>E</b>	<b>N</b>	<b>E</b>	<b>T</b>
<b>O</b>	<b>P</b>	<b>E</b>	<b>R</b>	<b>A</b>
<b>R</b>	<b>O</b>	<b>T</b>	<b>A</b>	<b>S</b>

The text here reads the same horizontally, vertically, and backwards<sup>3</sup>. Although the vast majority of shapes and patterns explored in visual poetry are two-dimensional, almost four hundred years ago the Cisterian monk Juan Carmuel de Lobkowitz (1602 – 1682) proposed spherical and cubical poems<sup>4</sup>. The

international concrete poetry movement of the 1950s and 1960s sought to stretch across spatial and political distances, stressing the graphic impact of the word- and letterforms. Attention to visual design and geometric arrangement is present in the *beeBox*, however what makes this piece unique is the actual distribution of the verses in three-dimensional space and the reader's ability to approach the poem as an object rather than as a page.

## **STRUCTURAL ANALYSIS OF THE POEM**

I consider *the arrival of the beeBox* to be a transition from the two-dimensional page to a three-dimensional environment, more than a surface but not quite a volume. Visually, the poem suggests simultaneously the stability of a cube and the bare fragility of a skeleton. The poem consists of twenty-four verses, each of which forms its own unit of meaning. I grouped the verses into three distinct regions, arranged in three parallel planes of eight verses each. It is as if I took three sheets of paper and lined them up next to each other in the z-axis to form a cube. Each plane is its own entity, a collection of verses. Together the three planes form a whole. The twenty-four verses are regularly spaced and the general shape of the poem is symmetrical. This state of balance is, however, lifeless and inert. The reader must activate the poem to read it, clicking each verse to expand the words into a legible arrangement. As soon as a single verse is expanded, the poem shifts from symmetry to asymmetry. With only a few touches of the interface, the balance of the poem can veer into chaos. The reader can rotate the poem in space, disrupting the even distribution of verses. Words from different verses begin to overlap. New mappings and relationships arise. The reader may create a mess, a chaos of words, and hit the RESET button to artificially return the system to a state of equilibrium. No privileged point of

entry or exit exists. Any verse can expand or contract at any time. Order is deliberately ambiguous to encourage multiple readings as well as to facilitate “sharing” of verses within and across the three planes.

In designing the structure of the poem, I felt it was necessary to create a physical model of the poem. As could be expected, working with the physical model affected the semantic and syntactic structure of the poem. As I considered how a reader would travel through the text-space I was constructing, I adapted several concepts from geography, a discipline which strives to delineate how spatial process and structure can best be analyzed and displayed. Geography is one of our most intuitive and coherent resources for accessing and understanding space. Waldo Tobler’s First Law of Geography states that “... everything is related to everything else, but near things are more related than distant things.”<sup>5</sup> The poem illustrates the principle of distance decay – verses placed near each other are more coherent than ones that are further apart. The process of moving through the poem and the reading patterns that develop exhibit spatial dependence.

Working with the physical model also affected my assumption of how an ideal reading of the poem might flow. I favor the surface of the *beeBox* - verses on top

are more coherent, verses near the bottom, where it was difficult to reach, are more chaotic and seemingly disconnected from each other. The poem gets less and less linear as you move down.

The structure is a hollow container for words. Instead of forcing the reader to go from left to right, I suggest that she reads front to back, as I am curious about when the transition from surface to depth occurs. The hollow chamber serves two purposes: the first is practical, it is easier to read without a middle section muddling up one's field of view. Secondly, it makes the container open-ended, suggesting that there is room for the reader to imagine inserting her own conjunctions, adverbs, or transitional words among the verses.

Interaction in the *beeBox* is reactive, not generative. The poem is static, essentially the same every time it is read. Nevertheless with each expansion or contraction of a verse, poetic meaning is built up across a plane or is broken down. Verses compete for dominance, blocking other words when expanded. The rotation and zooming tools set the poem into motion, temporarily changing the relationships among the verses. The ability to rotate the whole poem gives the impression that it is an object, something one could hold between one's hands and gaze into.

Zooming into the text brings the reader into the actual space of the text,

surrounded by verses and the semantic connections that stretch between them.

Threads of meaning evolve with the changing spatial relationships among the verses as they rotate and grow or shrink in scale. Words from different verses overlap and form new verses. This dynamic relationship between space and meaning can only be fully explored in three dimensions. Space is an arena where text may become flexible and interactive, where the bond joining language and thought can be explored in a new light.

## **MANIFESTO OF THREE-DIMENSIONAL TEXT**

Multimedia combines images and sound to stimulate our senses and give the impression of a richer experience. Too often, text is relegated to captions and labels, brief introductions and conclusions. The flat, two-dimensional linearity of written language seems awkward and flimsy compared to the impact of animated visuals and surround-sound. Designers of human-computer interfaces are moving from two-dimensional representations to spatial constructs. From the scientific discipline of data visualization to computer games, the display and organization of information is being extended into the third dimension. As theorist Lev Manovich observes, “The computerization of culture leads to the spatialization of all information, narrative, and, even, time.”<sup>6</sup> Now is the time for text to assert itself in space.

Traditional, pictorial perspective places the observer outside the spectacle, maintaining a critical distance. A fixed perspective excludes the body, reducing it to a single, perfect eye.<sup>7</sup> Three-dimensional text draws the observer into the object of vision, within and among the letterforms. Unlike flat, two-dimensional perspective, no one point of view is given precedence. We need text that will invite the reader to move through it, engage with it. Movement in the text-space will produce an ever-shifting field of view, modifying the apparent relationships

between words-as-objects. The dynamic viewpoint should be exploited. In the *beeBox*, as the reader changes position, words from different verses merge and add another layer of reading. We must discover to what extent linearity will be useful in a space where sentences can meet at right angles and words can be piled on top of one another. Sentences at right angles meet at one and only one point. This point should be marked by a word that doubles as a semantic bridge. Imagine a single word, with many sentences radiating out of it. The connotations of this word will expand outward, infecting the surrounding space with its semantic residue. The reader should have the ability to enter the text at any point. We do not need a main entrance, we need to create spaces that leave readers free to get comfortable with the space on their own terms.

In learning how to navigate the text-space, we can rely on our embodied existence. Most of our experience is based on spatial understanding: movement, time, and socializing. The experience of the body structures our relationship to space. Thousands of years ago, speech was translated into the abstract, linear forms of the alphabet. Language thus externalized could be recorded and transmitted, its development feeding back through our literate minds:

The use of letters for the phonemes of human speech introduced a new relationship to space among the cultures that practiced it. Instead of being an extension of the skin and an experience of the breathing lungs, space

became an objective reality, subject to visual appreciation, analysis, theory, classification and management.<sup>8</sup>

The third dimension affords us the possibility of re-infusing text with extension and movement. Our use of language will change accordingly, capturing the ambiguity that goes hand-in-hand with multiple perspectives and shifting connections.

Space in which bodies may travel implies a space that may be shared. The private space of the printed book is associated with solitary reading or one person reading aloud to a group. The space of a three-dimensional environment will be able to accommodate public, concurrent readings. I propose literary environments where the amount of text revealed increases as more people join in to read. Getting the whole story would require a critical mass of readers.

Layering and depth of text are two concepts that are more easily explored with an extra spatial dimension. Words printed on top of one another quickly become an unintelligible mass on a flat page, whereas in three-dimensional space an animation or slight adjustment of the viewpoint can reveal the buried layers. We suddenly have access to the backs of words – let's make use of it. Will words read in reverse mean something else, or will they simply remain visual, decorative? Perhaps new letterforms will be created, ones that display

differently when viewed from the front, side, back, top, or bottom. With depth, we can consider questions such as : What is the difference between texts that are near or far? What will it mean when one sentence is behind another? When one sentence is above another? How will the metaphoric concept of “depth” be mapped onto location? The larger a body of text becomes, the greater the need for sub-regions. Poetry has long been divided into lines, into verses – distinct visual regions – with line breaks and punctuation. Writers of three-dimensional texts should either impose a system of sub-regions (in the *beeBox*, the three planes) or allow the reader to create sub-regions (and then, for example, to draw a circle around a group of sentences or verses, and be able to further manipulate this new collection). How are we going to punctuate text in three-dimensional space? Do commas and periods make sense in a text where there is no single reading path? We must begin to carve out a grammar of three dimensions, so that these questions, instead of being overwhelming, serve as useful limits.

## CONCLUSION

Writers have begun to employ multimedia to create rich experiences, and through the integration of interactivity invite the reader to invoke that experience. Writing in three dimensions creates an opportunity to rediscover the relationships among words as well as between words and space. The poetic experience will be enhanced as readers acquire or invent new reading patterns that depend on spatial arrangement.

How will we approach reading in an immersive and multisensory field?

Geography and its core concepts, such as location, direction, distance, distribution, spatial interaction, scale, and regions, can serve as a foundation for linking our understanding of spatial structure with literature. Geographic metaphors will also be useful in the development of a grammar of three dimensions. The maps which help us to navigate physical space will find their equivalent in the author's or reader's setting up of intended traversals of text-space. Our experience with the page will be our compass in three-dimensional text environments: a useful guide for orientation, but to really explore this new literary space we must open our eyes and move through it.

## ENDNOTES

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<sup>1</sup> Stevens 1974

<sup>2</sup> Higgins, Dick *Pattern Poetry* State University of New York Press, Albany, NY: 1987, p.20

<sup>3</sup> One commonly seen translation of the text is “Arepo the sower holds the wheels at work” No one interpretation of the purpose of this Latin inscription has achieved universal credibility. <http://www.waggish.org/archives/001058.html>

<sup>4</sup> Higgins, *Pattern Poetry* p.42

<sup>5</sup> Tobler, Waldo “A Computer Movie Simulating Urban Growth in the Detroit Region”, *Economic Geography*, 46, 2 (1970), p. 236

<sup>6</sup> Manovich, Lev “Global Algorithm 1.3: The Aesthetics of Virtual Worlds: Report From Los Angeles” published at ctheory.net: May 22, 1996 [http://www.ctheory.net/text\\_file.asp?pick=34](http://www.ctheory.net/text_file.asp?pick=34)

<sup>7</sup> deKerchove, Derrick *The Architecture of Intelligence* Birkhäuser, Switzerland: 2001, p.46

<sup>8</sup> Ibid., p.8