# TextArc: an alternate way to view a text

TextArc is a visual exploration of a text. It presents a text in such a richly informative yet perceptually calm way that it has become a work of art in itself. But it is still intended to respect the original text; functioning as a concordance, index, and structural guide. Its understandable structure allows the text to reveal itself in many ways.

A TextArc is made by following three simple rules:

1. *Draw the entire text in an ellipse around the page*. Generally the text is drawn twice: line by line, to preserve the typographic structure of the text; and word by word, to address the subject and vocabulary of the text
2. *Draw frequently used words brighter and larger*. Repeated words may be important; they should demand more attention.
3. *If a word is used more than once draw it at the center of all of its mentions*. This accounts for the scattering of words in the center: think of the word as being attached to every place it is used in the text by tiny rubber bands. Those forces pull each word closer to where it appears most often in a text.

TextArcs all share a visual similarity, like leaves in a forest. But insight comes from understanding their differences and fine details. A botanist learns visual strategies for distinguishing the type and health of a plant; likewise people looking at TextArcs have begun to develop visual strategies that help extract structural features in texts. These features can rigorously support previous observations or hypotheses. They can also serve as a visual seed, evoking new insights into a text's meaning
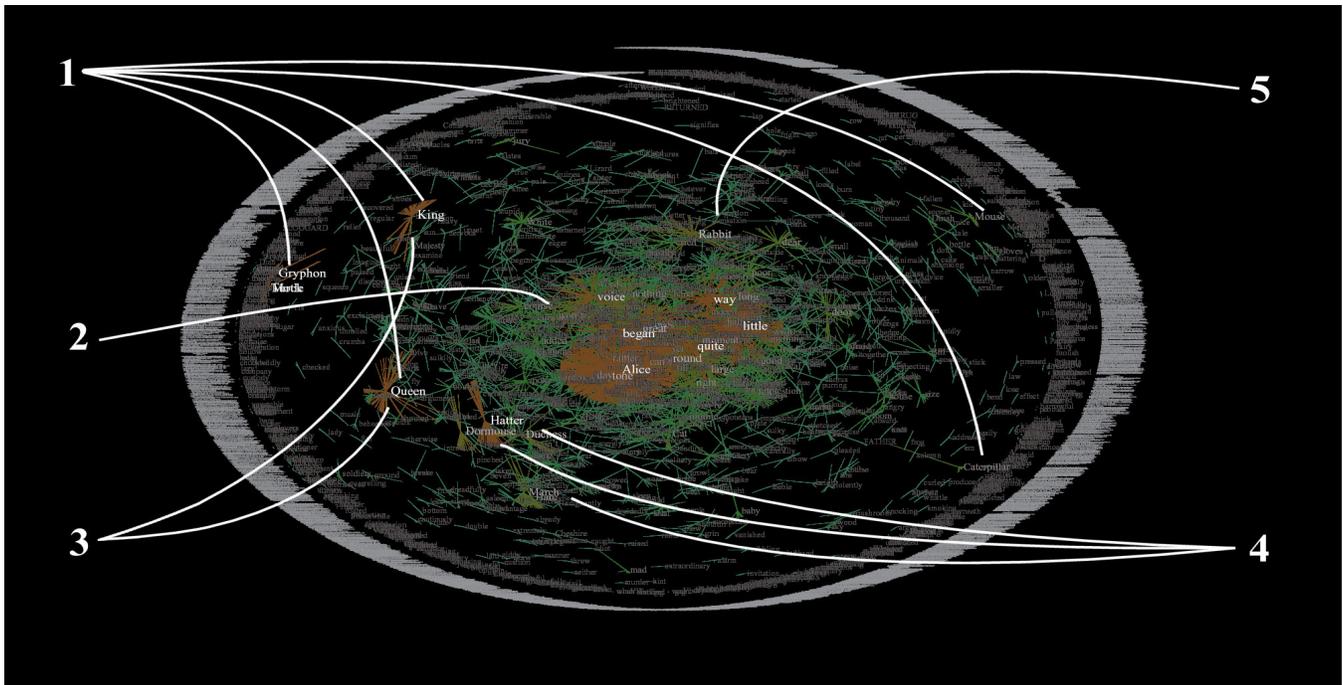
Some examples of visual strategies that suggest meaning in a TextArc of *Alice's Adventures in Wonderland* let you:

1. Notice that some of the brighter (more frequent) words are character names drawn around the outside of the arc. Those characters are mentioned constantly in one or two chapters and rarely mentioned elsewhere so they're pulled away from the center, each towards their own chapter. Bright words around the outside suggest that this text is episodic in nature.
2. Let your eye scan over the words, starting in the center. You can see that the main character, Alice, and other words common in the story cluster together. Reading the TextArc like you would read Concrete Poetry helps reveal the vocabulary and general tone of the text, and how it varies throughout the work.
3. Notice that *King* and *Queen* are each mentioned in the same chapters: at roughly 7:00 and 11:00 around the arc. (The "distribution glyphs" next to each word point to every occurrence of that word.) Notice that references to the King are denser at 11:00, while references to Queen are denser at 7:00. This suggests that each is more central in one scene, but still plays a supporting role for the other.
4. Find the distribution glyphs for *Hatter*, *Dormouse*, *March*, and *Hare*, in the lower left quadrant. They all look similar (like witches brooms), showing that they all appear in the same places: the tea party, and the King's chapter. This suggests that they, like the *King* and *Queen*, are developed as ensemble characters by Lewis Carroll, rather than individual personalities.
5. Notice that *Rabbit* (just above center) is not very bright, though we think of him as a main character in the book. The distribution glyph shows that he appears sporadically and between the episodes devoted to other characters. So he's a familiar character the third time we see him, despite the fact that he's not well developed. It can also be seen that he's mentioned at the beginning and the end—memory-privileged positions in any text.

TextArc: the print and the artist

This offset print is an exceptional piece of workmanship by the Stinehour Press in Lunenburg, Vermont.

- It is printed on heavy 100% cotton rag paper
- It is printed with special colorfast inks. (Though it will fade if hung in direct sunlight.)
- It was printed in seven different passes: two different oranges, two different greens, two blacks and one gray.
- The smooth tonal range in the words was produced by using an extremely fine 300 dot screen.
- It was also printed using a special duotone printing process: the lightest grays are printed as a varying percentage of gray ink only—making the dot screen pattern almost invisible. The darker grays are printed on top of 100% gray in varying densities of black.
- The artist was on press for several sessions of invention and exploration in co-developing these printing techniques specifically for this print.

W. Bradford Paley is an interaction designer and artist whose focus in both worlds is the visual interpretation of patterns hidden in information. His work has three primary goals: to create visual filters which let different subjects express their differences; to make the work readable enough that the viewer can gain specific insights; and to reveal complexity in a way that's matched to human perceptual abilities. His visual representations are inspired by the calm but richly layered information in natural scenes. He tries to build with the simplest filters, as if to say "look how little the filter is doing—the beauty must be in the subject itself."

He did his first photography in 1968, his first computer imagery in 1973, and founded Digital Image Design Incorporated in 1982. He has exhibited at the Museum of Modern Art; he created TextArc.org; he is in the permanent collection of the Whitney Museum of American Art; and his designs are at work every day in the hands of brokers on the floor of the New York Stock Exchange. He is an adjunct professor at Columbia University, is frequently asked to speak on the subject of interaction design, and pursues an integrated career where design jobs inspire art and art techniques inform design.

The first edition consists of one thousand prints, finished on October 18, 2002
The print has a list price of $49.95 USD

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There is a freely available interactive program:
http://textarc.org

TextArc: NYSCA grant and public installation

W. Bradford Paley received a 2002 New York State Council for the Arts grant to partially fund the creation of a shared version of the interactive TextArc program. The project will install a variation on the interactive TextArc program on a 50" diagonal plasma panel, modified to be a touch screen. The first public installation is tentatively scheduled for Summer, 2003. It will remain in place for approximately two months, then may travel to other institutions.

The interactive TextArc program was released to the public at the Web site textarc.org on April 15, 2002. It allows people to freely view thousands of the world's most important literary achievements. It allows people to use TextArc as a tool, choosing words and viewing sections of the text. Tens of thousands of people have visited the site and viewed their favorite books with TextArc. It is being explored by many of these people for other purposes, including PhD research in poetry, the creation of poetry explicitly for viewing in TextArc, clinical research by a psychologist looking at its ability to highlight repeated phrases that couples use in verbal conflicts, and qualitative analysis of ethnographic data. It was written up in the New York Times Arts section as fine art, and provided the visual vocabulary for a project commissioned from Mr. Paley by the Whitney Museum of American Art.

The public installation will bring TextArc into the social domain—off the small computer screen and onto a wall in a shared space so it becomes a focus for conversation and learning beyond isolated explorations on the Web. It will be both passive and interactive. People will be able to just watch and comment to one another as TextArc "reads" a novel or piece of non-fiction. TextArc "reads" by stepping through the text a word at a time, showing progress in a highlighted subtitle. At the same time, an amber line loops smoothly through the highlighted words inside the ellipse. When the line approaches repeated themes (identified by counting repetitions of word pairs) the themes bloom into flower-like networks of purple tendrils. They show where the author has taken the idea in the past, and whether this mention of a word reinforces a theme (following a tendril), or ignores it. People will also be able to touch the screen to begin reading from any specific word, or find every place a word appears in the story. There will be months of careful on-site testing and reprogramming needed to make TextArc work in this extremely different multi-person interaction style and large format.

The texts displayed will be chosen to enhance the likelihood of conversation. For example, at the first public installation it may display texts related to physical books laid out in front of the display. An installation in a public high school might show books that the students read for their literature classes; an installation in a Wall Street firm could show recent news items relating to stocks a volatile industry. TextArc applies findings from the art movements and the mind sciences to expose the meaning in texts and databases. The current project is meant to bring this exploration one step forward into social discourse—not just about the means used to show text, but the rich content of the texts themselves, which will be chosen from among the world's most respected literature and the most relevant text available for the viewers at a given installation.