The Text as a Scalable Structure

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New ways of Storytelling?

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Abstract: Inspired by the fictional construction of Stephenson (2000), an "anfractuous" book able to answer reader's questions by self-expansion and ramification, and functioning on the principle "tell me more about this subject", our project deals with the construction of an interface allowing several levels of detail and implying different "scales" of textual representation. By revisiting a number of traditional narrative paradigms, the paper will discuss some new possible ways of storytelling determined by this kind of textual development and exploration. Greenblatt (2004) suggests that in "Venus and Adonis", Shakespeare uses a way of approaching or distancing the reader from a character or situation by increasing or decreasing his "physical and emotional proximity". In some passages, we seem to be at a great distance from the two protagonists while in other, we can observe the tiniest details, as in a view evoking the "zoom in" perspective. On the other hand, in his analysis of Evelyne Waugh's "Vile Bodies", Alan Palmer (2003) uses the term "behaviorist narrative" defined as an objective description, focalized on the characters' behavior, i.e. on their actions rather than on their feelings and thoughts. Could we therefore imagine a narrative, on several scales of detail, allowing an alternation of proximity and distance from the protagonists or starting with a behaviorist approach and gradually investigating the psychological depths of the characters? Would this type of textuality involve a reconciliation of immersion and interactivity, in the sense of Ryan (2001), and a variable interpretation depending on the "degree of immersion" in the process of reading? What kind of narrative, characters, plot, relationship author-text-reader would imply this new form of writing?

Keywords: Electronic Text, Fractal Geometry, Narrative Theory

Introduction

AS ANDREW GIBSON (1996) suggests, "geometry is a kind of universal law" in the traditional narratology mainly inspired by the Greek classical school and the structuralist approach. The narrative forms are conceived "in geometric terms" and the "geometric schematization of texts" is present everywhere in narratology: in its concern with "levels", "frames", "Chinese box narration", "spheres of action", "semiotic square", "intertextual frames" or "geometrical construction" of the characters. According to Gibson, the homogeneity, symmetry and unity of the ancient Greek geometric model are increasingly ceding place to more complex paradigms. Recent inquiries (mostly related to the postmodernist aesthetics and to the development of a new visual - digital culture) have therefore paid attention to the "fractionary dimensions", discontinuity, multiplicity, decentralization, and heterogeneity of the narratological space.

On the other hand, starting from Barthes' assumption that narrative has an international, transcultural, transmedial nature, Ryan (2006) observes that not all the media offer the "same narrative resources", and the "migration of a story from one medium to another" implies cognitive and aesthetic consequences. Thus, the interactivity, i.e. the property making the "greatest difference between old and new media", would not easily assist storytelling, the one supposing the "linearity and unidirectionality of time, logic, and causality", the other involving a system of choices, and a "nonlinear or multilinear branching structure, such as a tree, a rhizome or a network".

Taking into account both traditional and more recent theoretical assumptions, the present study deals with a new form of electronic text, conceived as a geometric, scalable structure, and allowing variable points of view and degrees of involvement with the text. The proposed model supposes the construction of the text as a 3D pattern, i.e. as an "in-depth" layout along with the Z-axis, corresponding to different levels of detail and signification. The objective of the project is the creation of a new type of text editor (called *zoom-editor),* allowing the user to traverse different scales of representation by operations of *zoom-in* and *zoom-out,* and to multiply the perspective while reading a given textual fragment. We have called this form of scalable text, *z-text* and the related processes of creation and exploration, *z-writing* and *z-reading.*

The second section will describe the concept of *z-text* and the functionality of the *zoom-editor*. In the third section, we will discuss the possible applications of the model in the domain of creative writing, mainly focusing on the investigation of new ways

of storytelling, character development and author-text-reader relationship.

Z-text, Z-reading, Z-writing

The model of *z-text* was inspired by the fictional construction of Stephenson (2000), an "anfractuous", self-expanding book able to answer reader's questions and functioning on the principle "tell me more about this subject". The term "anfractuous" is related to the concept of *fractal* (Mandelbrot, 1983) and refers to highly irregular forms, like the coastlines whose length increases "without limit" when they are represented on maps of increasing scales. Stephenson's fictional primer is an immersive-interactive, "scalable" book (Ryan, 2001), growing larger and

larger by adding details to an initially abridged version of the story, in its further interactions with the reader.

Starting from the idea of gradual expansion and variable scale representation conveyed by Stephenson's and Mandelbrot's paradigms, we have imagined the organization of a *z-text* as a vertical layout on parallel plans along with the Z-axis, each level corresponding to a degree of detail or signification (*Figure 1*). The first level (the most abridged one) might contain a succession of paragraphs P1, P2,…., Pn (or more generally, of textual fragments) further augmented on the subsequent levels: P1 is expanded to P1.1, P.1.2 on the second level, P1.1 is expanded to P.1.1.1. on the third level, P.1.2 to P.1.2.1 and P.1.2.2, etc.
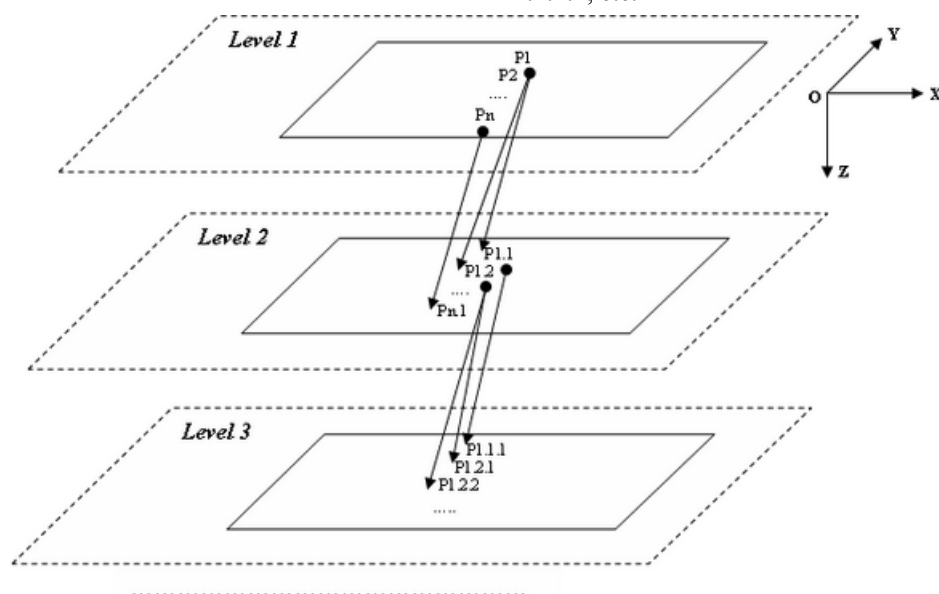

Figure 1: Z-text Layout. Levels of Depth

According to the degree of interest of the reader, at a given moment, the details from a certain level will be displayed, while the details from deeper levels will be hidden. In the process of *z-reading* (*Figure 2*), a click with a *zooming-in* magnifying glass on a

textual fragment will display the next level, more detailed version. If the reader is interested in less detail, a *zooming-out* will produce a previous level, more condensed description.
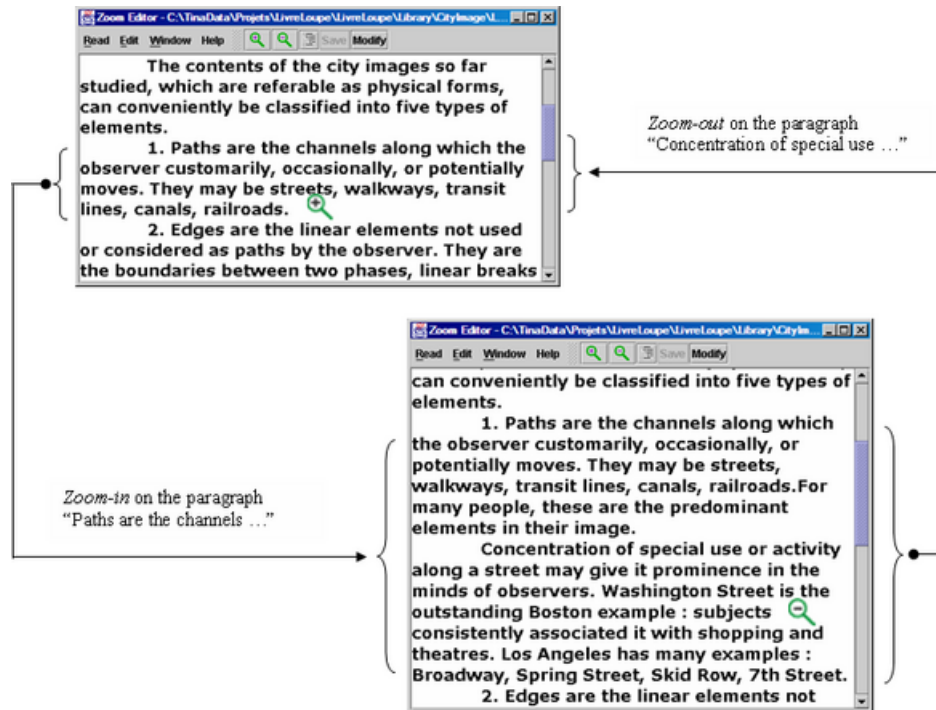
Figure 2: Z-reading Sequence. Excerpts (Lynch, 1960)

A given operation will affect only the pointed fragment, while the surrounding context will remain unchanged. Thus, the reader will have continuously on the screen a single "page" where the fragments are dynamically displayed and hidden, in a relatively stable context.

The *z-writing* procedure consists in successive *expansions* starting from a shorter, more abridged description. A supplementary editing window, displaying the clicked paragraph, allows the user to modify and expand it, and to save the enriched version as a next level text (see *Figure 3*). This layout actually stands for a sort of "scalable structure" (each scale or level represents a certain degree of detail or signification) which will subsequently support the *zooming in* and *out* exploration of the text.

The conception of a *z-text* should also imply a certain strategy in the way of thinking the levels, i.e. a *vertical stratification* of the arguments (which in-

formation comes first and on which level), in order to preserve the coherence of the whole at any scale and to convey a meaningful reading experience.

For instance, for the text presented in the *Figure 2,* we could assume a sort of vertical organization of the argumentative framework. Therefore, the first level may deal with a description of the physical, perceptible elements of the city (the "paths" as channels for movement, the "edges", the "districts", etc.) The subsequent levels, could gradually involve a depiction of their social or symbolic image (Boston's Washington Street projection in people's minds and its association with "shopping and theaters", etc.).

On the other hand, the second example (*Figure 3*) may represent a method for keeping track of the different phases of the creative process and of its triggering mechanisms (by recording the successive versions developed from an initially abridged form).
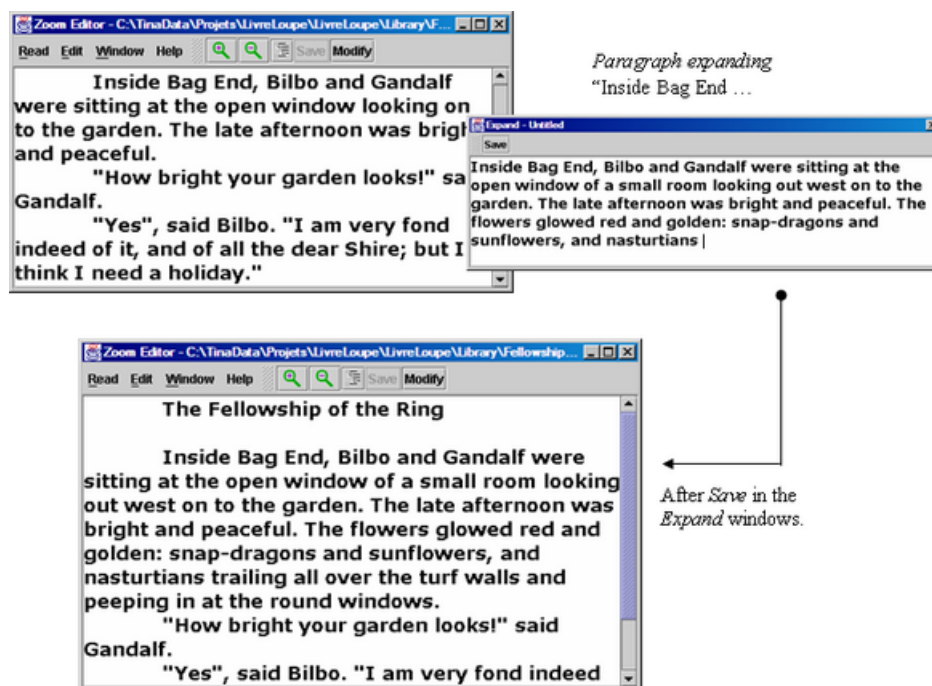
Figure 3: Z-writing Sequence. Excerpts (Tolkien, 1999)

Moreover, we can imagine the procedure as a starting point for new ways of storytelling, allowing the reader to adjust his proximity and distance as an *observer* in the textual space. For instance, a *reader-observer* placed on the second level will have more insight on the size of the room (small), the position of the garden (west), the color and types of flowers (red, golden, snap-dragons, sunflowers, etc).

Besides the operations of *z-reading* and *z-writing* presented above, the *zoom-editor* could also support a *design mode*, by letting the user define a set of magnifying glass cursors as virtual tools for the multiplication of the points of view. Consequently,

a *zoom-in* on the same fragment, but using different magnifying glasses could display different kinds of details. *Figure 4* presents two different interpretations (Hart, 1994) of a fragment from Marquez' *Chronicle of a death foretold*. The second level of expansion (*Figure 4a*) could be interpreted as a more detailed description of Bayardo's character (wealth, used to get what he wants, etc). A different perspective (*Figure 4b*) could be obtained by zooming in and "looking at" the same starting fragment through a "socio-cultural magnifying glass" (North-American capitalism, Latin American traditionalism, etc).
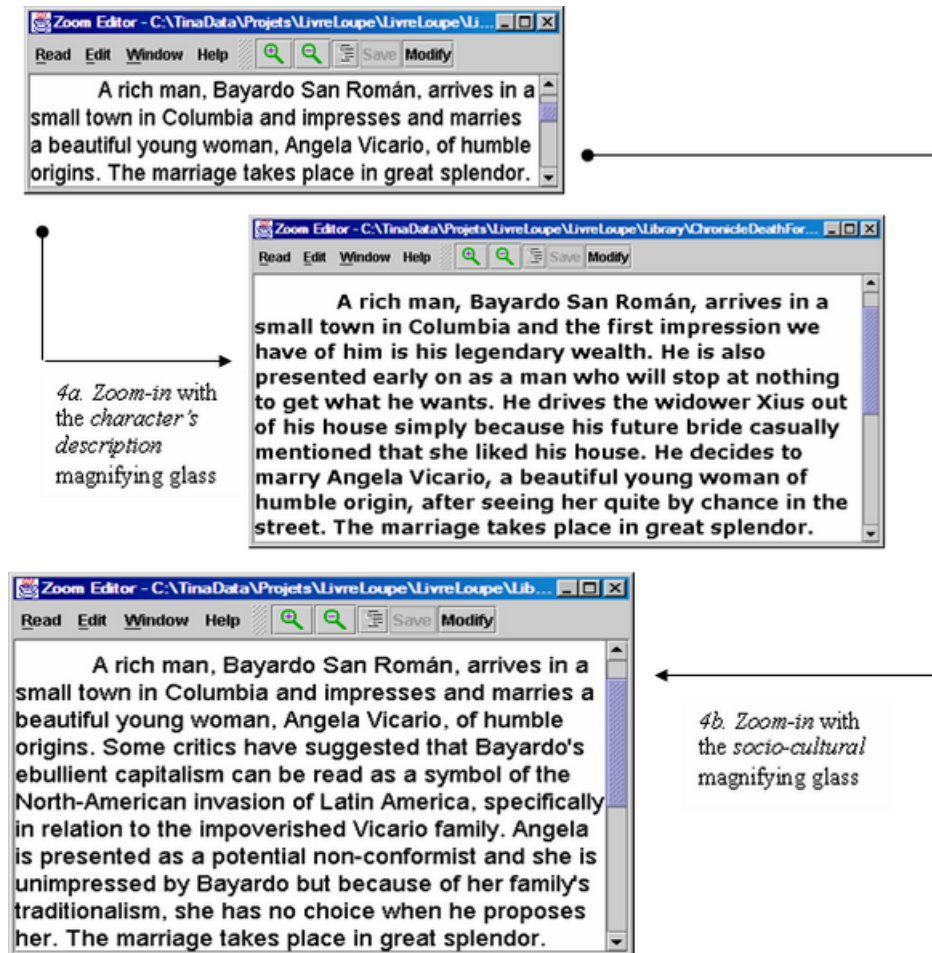
Figure 4: Multiplying the Points of view. Excerpts (Hart, 1994)

On the same principle, the development of a novel might imply different descriptive axes for the same zoomed fragment, providing, for instance, more insight on the psychology of the characters or further information making to advance the narrative flow.

New Hypotheses of Storytelling

If the "geometric" view and the hierarchical layout of the textual space seem to place the *z-text* model closer to the traditionalist approach (in the sense given by Gibson), the fractal-like reading experience, the variability of the representation scale and the multiplication of perspectives would rather follow more recent axes of inquiry in the literary criticism. On the other hand, as several theorists of the digital medium have suggested, the main challenge in creating new forms of electronic textuality would be the idea of turning interactivity into a captivating, meaning-bearer storyteller, rivaling the immersive, narrative power of the printed book. For instance, by comparing the "lateral" assemblage of the hypertext with the "depth" of the printed text as "a structure of sense", Birkerts (1994) complains about the disturbing, constant interruption and the fractured reading surface, "rendered collagelike by the appearance of starred keywords and suddenly materialized menu boxes". Ryan (2001) evokes the interruption and the change on the screen as elements preventing immersion, and cites, as a printed counterpart, Calvino's anti-immersive shift between the text on the page and the text as a mental image, in *If on a winter's night a traveler*. In the same way, Landow (2006) points out the tension between the non-linear, kaleidoscopic view conveyed by some electronic or printed hypertexts, like Joyce's *Afternoon* or Pavic's *Dictionary of the Khazars,* and a certain sense of formal coherence allowing the construction of a global picture, in the process of reading.

The main concerns in the conception of the *z-text* model have therefore involved the idea of a zooming magnifying glass as an element *exterior* to the text, and of interactivity as an agent producing *gradual immersion*. Hence, a *z-reading* process applies to a non-marked text, and the operations of *zoom-in* and *zoom-out* are based on the use of external, pointing cursors, in order to avoid the disturbing effect of additional graphic elements or marked keywords. *Zooming-in* and *out* through a vertical layout would also determine different degrees of immersion in the

text, either by increasing or decreasing the proximity and distance to a textual object or by making to advance the narrative thread. The location of the reader or of the writer on a certain level of depth seems therefore to simulate the position of a *direct observer* placed in the textual space. On the other hand, the continuity of a relatively stable context, the gradual back and forth movement from abridged to detailed, and the possibility of multiple viewpoints could confer a certain sense of coherence and completeness to the reading experience. The examples discussed below will further address these hypotheses.

In his analysis of *Venus and Adonis,* Greenblatt (2004) draws attention to Shakespeare's astonishing capacity (transmitted as well to the reader), "to be everywhere and nowhere" in the textual space, to "assume all positions and to slip free of all con-straints", by a "deeply paradoxical achievement of proximity and distance, intimacy and detachment". While in some passages the reader seems to be at a great distance from the figures, in others he can experience, as in a sustained close-up, an "intensifying physical and emotional proximity".

We could therefore imagine an in-depth organization of the Shakespearean text on vertical layers, allowing the reader to experience proximity and distance by operations of *zoom-in* and *zoom-out. Figure 5* presents a hypothetical *z-text* layout, gradually increasing the reader's involvement in the character's world. For reasons of concision, the details from a previous level have not been repeated on the next level (a *zoom-in* on the first level text, should, for example, display both the first and second level text).

> "'Dost thou drink tears, that thou provokest such weeping?
> What may a heavy groan advantage thee? […]   (1st level)
>
> Here overcome, as one full of despair,
> She vail'd her eyelids, who, like sluices, stopt
> The crystal tide […]"   (2nd level)
>
> O, how her eyes and tears did lend and borrow!
> Her eyes seen in the tears, tears in her eye;
> Both crystals, where they view'd each other's sorrow, […]"   (3rd level)

Figure 5: Z-text Layout. Increasing the Proximity to the Character. Excerpts (Shakespeare, Venus and Adonis)

Since the first level seems to express a rather exterior and more distanced view on the protagonist's grief, the details added from the second and third levels convey a gradually closer insight into her sorrow. The reader-observer could therefore perceive, at different scales and degrees of intensity, the changes in Venus' emotional state, from the verbal articulation of despair, through the refrained "crystal tide", to the striking image of the eye seen in the tear and the tear seen in the eye, as a double mirror of the character's soul. A vertical, *z-text* layout might thus enforce the assumption of variable attachment and distance from the characters, detected by Greenblatt in the Shakespearian text, by placing the reader (or the writer, if we take into account the authorial per-spective) on different levels of depth in the textual space.

The idea of gradual immersion and involvement in the protagonists' "life" or in a fictional situation could be further examined as a narrative technique. According to Alan Palmer (2003), a "behaviorist narrative" is an objective description, focalized on the characters' behavior, rather than on their consciousness. A *z-text* novel could contain, for instance, a "behaviorist", action-centered first level, expanded on the subsequent, deeper levels to a gradual, psychological, more complex insight. *Figure 6* describes such a hypothetical example, starting from an abridged fragment of *Anna Karenina*'s ball scene.

"Kitty danced in the first couple […]. Vronsky and Anna sat almost opposite her. [….] When Vronsky saw her, coming across her in the mazurka, he did not at once recognize her, she was so changed.

"Delightful ball!" he said to her, for the sake of saying something.

"Yes," she answered." (1st level)

"Kitty danced in the first couple, and luckily for her she had not to talk […]. Vronsky and Anna sat almost opposite her. She saw them with her long-sighted eyes, and saw them, too, close by, […], and the more she saw of them the more convinced was that her unhappiness was complete. […]. When Vronsky saw her, coming across her in the mazurka, he did not at once recognize her, she was so changed.

"Delightful ball!" he said to her, for the sake of saying something.

"Yes," she answered." (2nd level)

"Kitty danced in the first couple, and luckily for her she had not to talk […]. Vronsky and Anna sat almost opposite her. She saw them with her long-sighted eyes, and saw them, too, close by, […], and the more she saw of them the more convinced was that her unhappiness was complete. She saw that they felt themselves alone in that crowded room. And on Vronsky's face, always so firm and independent, she saw that look that had struck her, of bewilderment and humble submissiveness […]. Anna smiled, and her smile was reflected by him […]. Some supernatural force drew Kitty's eyes to Anna's face. […] Kitty admired her more than ever, and more and more acute was her suffering. Kitty felt overwhelmed, and her face showed it. When Vronsky saw her, coming across her in the mazurka, he did not at once recognize her, she was so changed.

"Delightful ball!" he said to her, for the sake of saying something.

"Yes," she answered." (3rd level)

Figure 6: Z-text Layout. Gradual Immersion. Excerpts (Tolstoy, Anna Karenina)

The first level corresponds to a surface view on the protagonists' movements, actions and dialogs, without any explanation on their behaviour or appearance. The second level gives more insight on Kitty's point of view, also alluding to her "unhappiness" and to the reasons of why Vronsky did not at once recognize her. The third level completes the picture by a deeper, more complex description of the characters interconnections, the reader-observer borrowing, alternatively, Kitty's, Vronsky's and the author's perspective (mainly focusing on Kitty's perception). The vertical organization of the text on levels of depth also points out the relationship between the degrees of detail of the description and the ambiguity (produced by the lack of details) as a narrative technique entailing multiple interpretations.

The last example (*Figure 7*) deals with the idea of multiplied perspective implemented in a *z-text,* by making use of different types of magnifying glass for text scrutiny. The fragments are extracted from Pavic's *Dictionary of the Khazars*, each point of view corresponding to a red (Christian), green (Islamic) and yellow (Hebrew) "magnifying glass".

ATEH

"(9th century) - the Khazar princess whose role in the polemic concerning the Khazars conversion was decisive. [...] [Her] cult originated in the belief that Ateh had defeated the Hebrew theologian in the Khazar polemic and had adopted Christianity along with the kaghan, about whom it is uncertain whether he was her father, her husband, or her brother. "

(Red magnifying glass)

"(beginning of the 9th century) - According to Islamic legend, the Khazar kaghan had a relative living at his court who was renowned for her beauty. [...] Ateh took fervid part in the polemic, successfully out-arguing both the Jewish and Christian participants, and in the end helping the Islamic representative, Farabi Ibn Kora. Together with the Khazar kaghan, her lord and master, she converted to Islam."

(Green magnifying glass)

"(8th century) - Name of the Khazar princess who lived at the time of the Judaization of the Khazars. [...] Princess Ateh helped Isaac Sangari, the Hebrew participant in the Khazar polemic, by out-arguing the Arab participant, and so the Khazar Kaghan opted for the Jewish faith."

(Yellow magnifying glass)

Figure 7: Z-text Layout. Multiple Points of view. Excerpts (Pavic, Dictionary of the Khazars)

Zooming in with a red, green or yellow magnifying glass will produce different explanations on the same subject, the dictionary entry for the princess Ateh. The fragments might be further expanded along with the three axes. Similarly, we can imagine a kaleidoscopic perspective on the ball scene presented above, by using a different magnifying glass for each of the main characters.

Conclusion

Starting from the idea of a vertical, *scalable* representation of the text, the paper has focused on the implementation of a new model, called *z-text*, and on its potential for application in the domain of creative writing and textual interpretation. The study has mainly addressed the notions of *gradual immersion* and *multiple points of view* by revisiting a series of narrative paradigms, and by investigating new possible ways of storytelling.

References

Birkerts, S. The Gutenberg Elegies. The Fate of Reading in an Electronic Age, Boston, London, Faber and Faber, 1994.

Calvino, I. If on a winter's night a traveler, San Diego, New York, London, Harcourt Brace & Company, 1981.

Gibson, A. Towards a postmodern theory of narrative, Edinburgh University Press, 1996.

Greenblatt , S. Will in the World. How Shakespeare became Shakespeare, New York – London, W.W. Norton & Company, 2004.

Hart, S. Cronica de una muerte anunciada, Grant & Cutler Ltd., 1994.

Joyce, M. Afternoon, a story, Riverrun, Eastgate Systems, Inc., 2003, 1989, http://www.eastgate.com/catalog/Afternoon.html.

Landow, G.P. Hypertext 3.0. Critical Theory and New Media in an Era of Globalization, Baltimore, Maryland, The Johns Hopkins University Press, 2006.

Lynch, K. The Image of the City, MIT Press, 1960.

Mandelbrot, B. The Fractal Geometry of Nature, New York, Freeman and Company, 1983.

Palmer, A. "The Mind Beyond de Skin", In Narrative Theory and the Cognitive Sciences, ed. David Herman, Stanford, California, CSLI Publications, 2003.

Pavic, M. The Dictionary of the Khazars. A Lexicon Novel, Hypertext edition, http://thor.prohosting.com/mila18/, originally published by Vintage Books, a division of Random House, Inc.

Ryan, M-L. Avatars of Story, Mineapolis / London, University of Minessota Press, 2006.

Ryan, M-L. Narrative as Virtual Reality. Immersion and Interactivity in Literature and Electronic Media, Baltimore and London, The John Hopkins University Press, 2001.

Shakespeare, W. Venus and Adonis, Electronic version, http://www.shakespeare-w.com/english/shakespeare/w_venus.html, The Bard of Avon: Shakespeare in Stratford-upon-Avon., Copyright © 2002-4.

Stephenson, N. The Diamond Age or A Young Lady's Illustrated Primer, New York: A Bantum Spectra Book, 2000.

Tolkien, J.R.R. The Fellowship of the Ring, Hammersmith, London, HarperCollinsPublishers, 1994.

Tolstoy, L. Anna Karenina, New York, Random House Inc., 1950.

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