

2006

-- online since 1993

Home > Journal > Essays > Digital Poetry

ISSN NO : 1071 - 4391

The MIT Press

QUICK LINKS :

LEA E-JOURNAL

TABLE OF CONTENTS

INTRODUCTION

EDITOR'S NOTE

GUEST EDITORIAL

ESSAYS

:: GALLERY

:: RESOURCES

:: ARCHIVE

:: ABOUT

:: CALL FOR PAPERS

Digital Poetry: From Cybertext to Programmed Forms

v o l 1 4
i s s u e

05

SEARCH LEA

 GO

Advanced Search

Digital Poetry: From Cybertext to Programmed Forms

[Click here to download pdf version.](#)

by Philippe Bootz

Assistant Professor

Laboratoire Paragraphe, Université Paris82 Rue de la Liberté

93526 Saint-Denis Cedex 02

France

philippe [dot] bootz [at] univ-paris8 [dot] fr

<http://transitoireobs.free.fr>

(Translated by Loss Pequeño Glazier, Camille Paloque-Berges, and Simona Schneider)

Keywords

e-poetry, digital poetry, procedural model, intermedia, technotext, Transitoire observable, form, cybertext

Abstract

This article first and foremost insists on the importance that the concepts of technotext and intermedia are taking on in contemporary poetry. The role of the computer is thus considered in this context. It is argued that the digital medium presents new circumstances for communication by redefining the role of the reader. This model is examined within the context of a procedural model of communication. Two particularities of the digital medium described in this model, namely the semiotic gap and the processing capacity, permit the introduction of a new category of sign, performative signs, as well as new aesthetic layers that introduce specific properties of readability. It is thus necessary to take into account a new function of reception, meta-reading, to explain the aesthetic intentionality of these layers. It is concluded that it is thus interesting to explore the concept of programmed form in order to address these layers.

Introduction

The theoretical approach to digital literature often focuses on the concept of the hypertext. But an analysis of the evolution of poetry reveals that numerous aspects of hypertext already exist in contemporary poetry, even in that which is not digital, without necessarily having to invoke the concept of hypertext in order to explain them. In fact, we can even consider electronic fiction to be pointing narrative in a poetic direction [1].

LEAD!

Wanna
wax lyrical?Join LEA's
New Media Poetics
Discussion Forum and
Live Chat today!

**"... the highbrow
hot spot of
cyberspace...
a digital bible
for the lowdown
on the {hi-tech}
art scene."**

- Wired Magazine
on LEA

```

-- Au hasard --
hio ∈ hl]l
si du ni
hi ≠ hp
si ≠ sp du ni ≠ np
-- au hasard d'un hymne
      je te découvre --
fio ∈ fl]l
fi ∈ f7]l
fi ∉ f7,8]l

```

Figure 1: An example of a matrix poetry program. The letters h,s,f refer to the matrices [15]
Copyright © Phillipe Bootz

Thus, though the concepts of ergodic literature, of cybertext and of technotext are useful, they do not allow us to apprehend the fact of digital poetry in its entirety. Their limitations are contained in their premises; they address literature by locating themselves exclusively from the point of view of the reader, as if he was the focal point of the work. This point of view might seem reasonable, and yet it has been proven that a number of works do not follow this mode, notably those of the French digital poets and, more loosely, most of the work produced by the writers and artists of the international collective *Transitoire observable*. In limiting themselves to this single point of view, the standard theories do not correctly describe the role that the machine plays, nor the exact purpose of reading. These theories consider the computer to be nothing more than an artifact that produces the visible component (that which is observed). For certain theoreticians, the semiotic layers and techniques overlap, as if the reader and the machine could form a new “cyberentity”. This isn’t correct in the case of digital poetry. The truth is at once more simple and more interesting: the technical artifact establishes a “semiotic gap” between two entities that can both be considered “the” text, but not from the same point of view, in fact not for the same actors. Digital poetry today explores the role of language in signs that use this gap, and which only exist thanks to it. In this case, programming can become a new condition, a new context for poetic creation. All this poses a question, which remains unresolved today: what can the artistic forms be?

In the first part of the article I will recall some properties of contemporary poetry that abide in digital poetry. Then, I will present the role of programming using the theoretical model called “procedural model” that I have been developing since 1996 [2] and I will introduce at the outset the artistic collective *Transitoire observable*. (Maybe footnote for the English name: *Observable Transitory*) [3].

Technotext and intermedia in post-dadaist movements

Poetry: the art of general semiotics

For a long time, poetry has no longer been an art solely of the verbal sign. During the 20th century, it oriented itself toward a more general semiotic approach. From its initial calling, to explore the relationship between a sign and another sign in purely linguistic terms, it opened itself up to the relationship between a sign and another sign in multimedia terms and then became a place where the sign’s relationship with the world is reflected upon and its capacity for meditation.

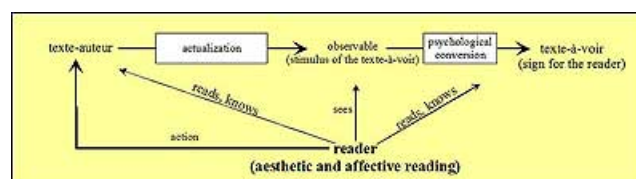


Figure 2: the position of the reader in a non-computer programmed work
Copyright © Phillipe Bootz

In this journey, the computer has become a medium of choice, but the object of digital poetry doesn't differ, in this exploration, from that of sound poetry. That's why many of the characteristics of digital poetry were already present in the preceding avant-gardes and are only pursued in digital poetry. The most important ones are relative to the concepts of technotext and intermedia.

The technotext in pre-digital poetry

Since the introduction into poetry of the tape recorder by François Dufrêne in France in 1953, poetry has left the book and has become interested in the relationships that the sign has with the technology it uses for its creation or communication. The same year in Brazil, Wladimir Dias-Pino was also interested in the relationship of the poem with a base in the principal of poem/process. Dias-Pino only revealed his principle in 1967, but he had been using it since 1953. Thus, for many years, the poem has been a technotext in the sense given by Katherine Hayles [4] and the introduction of the computer becomes a part of this search for technological platforms and devices that poetry has been investigating since this period and that the review DOC(K)S systematically relates ever since the issue that it produced in collaboration with the electronic poetry review alire in 1997 [5].

The notion of technotext is not treated in exactly the same way by François Dufrêne and Wladimir Dias-Pino. For François Dufrêne, the technical device only has a relationship with the author. This concept came out of action poetry and poetic performance. For Dias-Pino, the use of the technical device is turned to the advantage of the reader. The reader becomes a component of this device, no poem can, physically, exist outside of its reading. Thus, a machine can capture a sound poem, but not a poem/process. The difference can be found in the use it makes of perception and of the cognitive interpretation in the physical process of the creation of the poem. The distinction between the two points of view is important. Certain works are oriented towards the author, others are oriented towards the reader.

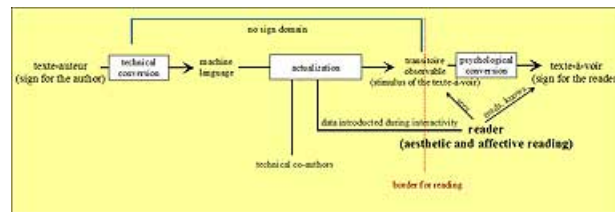


Figure 3: the position of the reader in a computer programmed work
Copyright © Phillipe Bootz

In a technotext, the sign can't be isolated from its technical and cognitive contexts. What Jean-Marie Klinkenberg denominates as the "stimulus" of the sign [6], or what Katherine Hayles calls "the body" of the sign, remains an important component of the sign. So important that rhetorical tropes use it in digital poetry. The stimulus of the sign is the base of the signifier, the part of the world that is considered as the physical carrying out of the sign by semiotic decision. It has nothing to do with the plastic base or with the object on which the sign is inscribed with regard to the communication of it, but of a component of the sign itself, the manifestation of the sign before any work of categorization that works against the reduction to signifier/signified that the linguistic works with by only considering the result of this categorization as the sign. Since the stimulus can be found in the real world, it can be seen by others as a non-significative part of this world, having no signification for another (this part of the real is no longer, then, a stimulus of a sign in the eyes of that person.) Contemporary poetry often works on the stimulus of the sign and not on its signified.

The intermedia in pre-digital poetry

The sound and visual poets often consider themselves intermedia poets in the sense defined by Dick Higgins in 1965. For him, intermedia principally consists of the breaking down of barriers between artistic genres as well as between art and life. In 1998 Philadelpho Menezes reintroduces this phrase with a different, more semiotic meaning. For him, an intermedia work generates a flow that circulates between signs belonging to different semiotic systems. He ties the term more specifically with the concept of media (in the sense of a text, an image, a sound constitute medias.) Menezes makes preferential use of the term intermedia over multimedia because in

these works the meaning is created by a circulation between the medias and not by the integration of these medias. Intermedia works are thus pluricode works in the sense of the semiotic. Post-dadaist poetry is very much intermedia. Intermedia is today a general semiotic approach that can not be reduced to a specific semiotic such as the linguistic.

In intermedia, the construct of the text can no longer be reduced to its simple linguistic signification; it must be considered as a text that is a fabric of signs, whatever the particular semiotic each of them reveals.

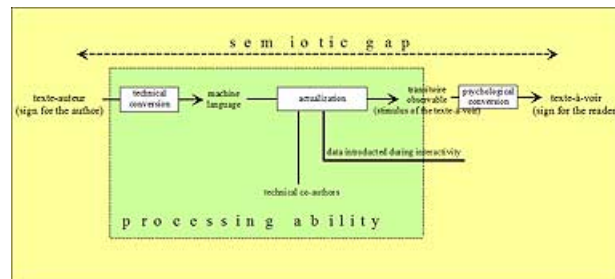


Figure 4: performativity in the digital medium
Copyright © Phillipe Bootz

The procedural model

Introduction

Literary theory constitutes a special case in the theory of communication. In a digital medium, literary theory must then take into account technique, psychology, semiotics and usage. The procedural model goes in this direction. It has already been the subject of several articles in English [7 to 10] but let's recall some characteristics useful to our argument.

The role of the computer

Incompleteness of the program

The theories of digital literature usually think of the computer as a simple calculating tool that transforms algorithms implemented by the author in the program into what is then seen and read by the reader. In the vocabulary of Espen Aarseth [11], the textual layer of a program is thus composed of textons and "what is read" — scriptons. From this perspective, the role of the program consists of calculating what is scripted onto the screen. If the program is not interactive, the scriptons live potentially in the textons, whereas an interactive work gives them a virtual character. Thus, cyberliterature becomes interesting only in the case where it is equally ergodic.

Such an approach neglects an important element: computer science directs many different actors, and no one has any more control over the entirety of what happens in the machine. This is why the concept of "transitoire observable" plays an important role in the procedural model. The transitoire observable is the multimedia event that happens in the space-sound of the screen at the execution of the program of the piece. It is so named because this event constitutes "the transitory and observable state of the program in the process of being executed." It does not concern a technical state but a communicative and aesthetic state. The computer does not act like a Turing machine in relation to its user. The program that the author writes contains only a part of the instructions used for its execution: the author is only a co-author of what happens on the screen, even if his program is only a description of what he wants to see appear on the screen. The transitoire observable changes with time. The same program produces a different transitoire observable when it is executed in a different technical context or on a different machine, and this is true even when it consists of just a basic description of what can be seen on the screen. The relationship between the diverse transitoires observable made by the same program is called "procedural transformation" in the model.

The procedural transformation denies that the computer be considered a calculator only. One must take into account the incompleteness of that program, which acts as the unvoiced for the machine.

The semiotic gap

The fact that the program cannot be seen by the reader once it is executed constitutes another important technical fact [12]. What results is that the author of the program has an overarching view of the work whereas the reader can only have a

local understanding of it. This difference would not be present in a non-computer programmed work which calls on the reader to execute its instructions. It is thus important to distinguish the “texte-auteur” (“author-text”) from the “texte-à-voir” The “texte-auteur” is constituted by what is written by the author, in a format that he can understand and manipulate. It contains, in a programmed work, the program he writes himself in the programming language (and not in the compiled binary file) and the givens that the author adds. The “texte-à-voir” is the part of the transitoire observable that the reader considers “the” text [13]. For the same transitoire observable, it could differ from one reader to the next by virtue of the archetypes and mental schemes brought into play by the reader.

I have been writing programmed poetry since 1977. The first texts were produced with a computer and their programs were meant directly for the reader. In this type of texts, called “matrix poetry,” poems worked in a classical manner (the matrices) are made to read like a combinatory program that extracts certain parts depending on a specific algorithm in order to incorporate them into a new text (called a surtext) which treats a subject other than that of the matrices. The reader must follow the instructions given by the program himself in order to read this surtext. Matrix poetry is founded upon intertextuality, the underlying idea of which is that it works in two ways: the context of each matrix is incorporated into the surtext, and, in return, the subject of this new text is reinjected into the matrix.

In the non-computer programmed works, the reader has access to the entirety of the materiality of the work. He is in a transverse position when communicating through such a work.

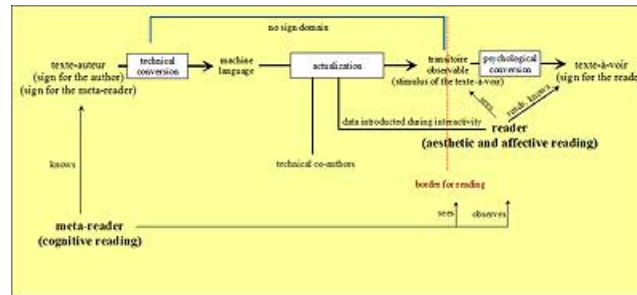


Figure 5: the status/position of the meta-reader in programmed digital poetry
Copyright © Phillipe Bootz

When a program is designed for a computer, the “texte-auteur” is real for the author, whereas the “texte-à-voir” remains virtual. In turn, it is real for the reader, and the “texte-auteur” remains mainly imaginary for the reader; he cannot attain it when he executes the program, he can only imagine it. In this case, he cannot know the exact rules that make it up nor the intentionality with which the author suffused it. The elements of “texte-à-voir” are nothing but traces of this intentionality, they do not make it explicit. There exists, then, a “semiotic gap” between the “texte-auteur” and the “texte-à-voir” which comes out from the loss of visibility of the intention of the author. The “texte-à-voir” reveals an intentionality that is its own and adapted and that may differ greatly from that of the “texte-auteur”. These two intentionalities coexist in a category of works that the procedural model qualifies as “mimetic works.” But, most of the time, programmed digital poems are not mimetic.

Thus, for the reader, the transitoire observable makes up the real screen for the “texte-auteur” and is thus a large part of the work.

Figure 3: the position of the reader in a computer programmed work

The computer modifies the nature of technotext. Note that, as Sylvie Leleu-Merviel shows [16], the machine does not deal with the sign internally. We must, then, make a distinction between semiotic phenomena and technical phenomena. There is no more than phenotext and genotext in the computer contrary to what Katherine Hayes maintains. We should better consider the technical device as adding a processing capacity to the medium of which the “texte-auteur”, in this case, is a performative sign. A performative sign has two sides to it (“texte-auteur” and transitoire observable) connected by the process of the execution of the program. One is invisible to the author, the other to the reader. The tie between these two aspects of the sign is as strong as the semiotic link that links the signifier and the signified: one cannot exist without the other, they are inseparable and united out of a relationship of mutual necessity. This sign can not exist if the program does not work, it would not know how

to limit itself to one algorithm component that, because of the incompleteness of the program, is incapable of register the transitoire observable. The processing capacity is thus an expression of the relation that the calculability holds with the procedural transformation; it registers the two contradictory aspects where one points the program in the direction of potential and the other in the direction of the virtual.

The question of programmed forms

Programmed digital poetry extends the idea of intermedia (in the sense defined by Philadelpho Menezes) by adding a new category of signs: performative signs. Programming posits itself as a new challenge for the poet because it, not the program, constitutes the substance (even in Hjelmslev's terms) of these performative signs that must manage different aspects of the work: the incompleteness of the program, the activity of the reader and the intermedia transitoire observable. In this case, the semiotic gap can generate "unreadable" layers in the author-text. There are signs in the "texte-auteur" that don't have any corresponding trace in the "texte-à-voir," no elements of it there are present as an hint of these signs. We can conclude that the reader is not the destined recipient. I don't mean the person who is reading, but the role of the reader in the situation of communication. In other words, reading does not allow one to access all of the aesthetic layers of the programmed work of a digital medium. In order to fully access the work, another position must be maintained: that of the meta-reader. A meta-reader is one who knows the "texte-auteur" or its properties and who observes someone else in the process of reading. He is thus able to interpret what happens during this reading. The meta-reader thus occupies the same role as the classical reader but he is unable to read. In fact, intellectual comprehension and emotional comprehension, which are mixed up in a non-digital work, are largely dissociated in a programmed digital work, the role of reading principally being attached to emotional interpretation and the role of the meta-reader being that of intellectual comprehension [18].

Today, such unreadable signs exist in adaptive generators [19] and in works done in the aesthetic of frustration [20]. An adaptive generator carries out the calculations on the machine during the execution of the program and modifies on the fly the logic of the program which has been activated towards the goal of producing a transitoire observable that satisfies the aesthetic rules to the highest level of abstraction. The aesthetic of frustration considers that the activity of reading is one of the components of the work. The actions and reactions of the reader are thus used by it as iconic signs of other processes that are carried out in life; they constitute the aesthetic representation of these processes in the work itself. The reader carries, sometimes unknown to him, an essential part of the follow-through of the work in the role of involuntary actor and not as the author. In this aesthetic the work is not conceived of in order to please the reader, nor in order to be read in the same way as a book or a video. It is not as much a robot as a place for the confrontation of the intentionality of the reader and that of the author.

These two programmed forms are as many specific forms as can be developed when we use the totality of new possibilities that the medium offers through the semiotic gap and performativity. Other forms reconsider the behavior of the transitoire observable as an image, an icon, of aesthetically parametrized algorithms. Poets and artists are exploring this route, notably Alexandre Gherban.

It seems that these profound aesthetic layers are largely independent from the media operated upon by the program. That's why, in 2003, Alexandre Gherban proposed the creation of a collective of artists who are seeking to reconsider the concept of form in which the programming (and not the program, nor only the transitoire observable) is the material worked on by the aesthetic activity in programmed art. Tibor Papp, Alexander and I have thus created Transitoire observable. It consists of an open international collective, which has already been joined by numerous digital artists and digital poets.

The question of programmed form remains open. It constitutes a new stage in the exploration of global semiotic art.

Notes

1. Jean Clément, « afternoon a story : from narration to poetry in hypertextual books », in A:Littérature, Villeneuve d'Ascq (MOTS-VOIR, 1994) pp. 61-74
2. Philippe Bootz, "Un modèle fonctionnel des textes procéduraux", in Les cahiers du CIRCAV, No. 8 (REXCAV, Université de Lille 3, Villeneuve d'Ascq, 1996) pp. 191-216.
3. The collective's manifesto, along with numerous theoretical articles, can be

accessed at the collective's site: <http://transitoireobs.free.fr>

4. Katherine Hayles, *Writing Machines*, Mediawork (Cambridge and London: The MIT Press, 2002).
5. alire10/DOC(K)S série 3 13/14/15/16, Villeneuve d'Ascq, Ajaccio, MOTS-VOIR, Akenaton, CD-ROM MAC/PC and book (1997).
6. Jean-Marie Klinkenberg, *Précis de sémiotique générale* (Paris: Points, 1996).
7. Philippe Bootz, « The functional point of view: New artistic forms for programmed literary works », trad. Fr. Verrier, in *Leonardo* No. 32.4 (1999) pp. 307-316
8. Philippe Bootz, "der/die leser ; reader/readers", in F. Block, C. heibach, K. Wenz (éds), *p0es1s. Asthetik digitaler Poesie (The Aesthetics of Digital Poetry)* (Hatje Cantz Verlag, Ostfildern, Deutschland, 2004) pp. 93-121.
9. Philippe Bootz, « Hypertext : solution /dissolution », John Cayley (trans.) in *Cybertext Yearbook 2002-200* (Research Centre for Contemporary Culture, University of Jyväskylä, Finland, 2003) pp. 56-82.
10. The Transitoire Observable site provides numerous other articles.
11. Espen Aarseth, *Cybertext, Perspectives on Ergodic Literature* (Baltimore and London: John Hopkins University Press, 1997).
12. When the reader has access to the code, for example in the case of HTML works, he is no longer a reader but a meta-reader (this term is defined later in this article).
13. Thus, the "transitoire observable" is not a sign but a physical event supporting a sign. The reader interprets certain parts as the stimulus of the *texte-à-voir*.
14. This mental archetype is denominated "profondeur de dispositif" ("depth of the device") in the procedural model. Note 8 refers to the presentation of this concept.
15. Extract from Philippe Bootz, *Hymne à la femme et au hasard* (1977), republished with and without computer programming in *alire7* (1994), republished in *Le Salon de Lecture Electronique*, CD-ROM PC (MOTS-VOIR, 1995).
16. Sylvie Leleu-Merviel, « les désarrois des « Maîtres du sens » à l'ère du numérique », in *Hypertextes, hypermédias : créer du sens à l'ère du numérique, H2PTM'03*, (Paris: Hermès, 2003) pp. 17-34
17. "Signes inlisibles" ("inlegible [STET] signs") in the procedural model.
18. There is always, certainly, a cognitive interpretive reading, but such a result is partial. Comprehending the work completely necessitates having the two roles of reader and meta-reader.
19. See Philippe Bootz, « adaptive generators and temporal semiotics », conference e-poetry'03, Morgantown, April 2003, http://transitoireobs.free.fr/to/html/adaptive_generator_web_fichiers/frame.htm
20. See reference to Note 8.

Author Biography

Born in 1957, Doctor of Physics and Doctor of Information and Communications, Associate professor at the University of Paris8 where he is a member of the Laboratoire Paragraphe. Has practiced programmed poetry since 1977. Co-founder of the collective of French digital poets L.A.I.R.E. in 1988, he has served as the editor and director of the review of digital literature *alire* since 1989. He is also a founding member of the international collective Transitoire Observable.



Citation reference for this Leonardo Electronic Almanac Essay

MLA Style

Bootz, Phillippe. " Digital Poetry: From Cybertext to Programmed Forms." "New Media Poetry and Poetics" Special Issue, *Leonardo Electronic Almanac* Vol 14, No. 5 - 6 (2006). 25 Sep. 2006 <http://leoalmanac.org/journal/vol_14/lea_v14_n05-06/pbootz.asp > .

APA Style

Bootz, P. (Sep. 2006) " Digital Poetry: From Cybertext to Programmed Forms," "New Media Poetry and Poetics" Special Issue, *Leonardo Electronic Almanac* Vol 14, No. 5 -

6 (2006). Retrieved 25 Sep. 2006 from <http://leomanac.org/journal/vol_14/lea_v14_n05-06/pbootz.asp>.

[SUBSCRIBE to LEA](#) | [Site Guide](#) | [Contact](#)

© Leonardo Electronic Almanac | All Rights Reserved 1993 - 2006 | [Disclaimer](#) | [Copyright](#) | Last updated : 22 September 2006