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***ESSAYS FROM PORTUGAL
ON CYBERLITERATURE &
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PERSPECTIVES AND VIRTUALITIES OF THE VIRTUAL TEXT¹¹¹

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0—AN ELECTRONIC BOOK?

The recent widespread of Computer Generated Literature seems to indicate a new literary trend: not the end of the book but surely a new way of reading, a new way of writing, and an alternative attitude concerning words. Are we on the threshold of a new age in the History of Literature?

We are entering the domains of virtual text, where works exist in many forms and states, as Alain Vuillemin among others points out. The virtual text is a latent text, which contains the genetic program that generates works; therefore, concrete works only exist in it in a latent state, as seed. And, in the same way the seed is not yet the fully grown plant or the egg is not yet the animal, also the textual program is not yet the work(s) the reader will enjoy. According to this perspective, the virtual text is immaterial: what exists in the physical hardware of the computer is not a text, it's not a perception, and it has no meaning; it is merely the engine of a new plurality of textual performances to be materialized through signs.

This is not an electronic book for being divulged in a magnetic medium (disk), but because it involves a different notion of text that has not and cannot have any part in the traditional book: the virtual text implies the unfinished and the infinite multiplicity of texts generated by the program. The texts do not exist in the magnetic medium as texts, and, therefore, hold no aprioristic meaning. Texts merely exist in the computer in a potential state or in a latent state, as a project or program. The virtual text is a literary structure associated with a computerized engine that puts it to work.

The computer merely intervenes as a complexity telescope: reading on screen performs an essential role here, for any printed hard copy will always be secondary and necessarily incomplete regarding the user (reader). A synthesizer of texts implies the notion of an automatic generator: a creative program that interposes the machine upon the traditional relationship between author and reader.

111 Pedro Barbosa, "Ângulos e virtualidades do texto virtual" from *Teoria do Homem sentado*, 1996, pp. 7-41. Translation by Isabel Basto.

Literature's communication circuit is, therefore, altered, both from the side of creation and from the side of reception. The act of reading, at last, may become interactive, involving the participation of the reader in the co-creation of the final text according to a simultaneous process of writing-reading, or wreading (*escrileitura*).

Starting as an instrument for literary creation, the computer also achieves a role as a reading instrument: the interposing of the machine as a manipulator of signs and complexity extension is, therefore, necessarily translated into a new attitude of the author and the reader regarding computational work.

The computer's role is to develop to infinity the idea of an author as a process and to present this idea to the reader as a "ghost of eternity" (Balpe 36).¹¹² The reader, however, may intervene in this process interactively: reading, selecting, correcting, adding, suppressing, changing, and finally recording the immense material supplied by the textual generator in a fraction of a second. It may even conceive its own texts.

This process will only require the association of this automatic generator (Sintext) to any text processor.

Then the reader participates in the creative process with a real act of co-creation. From there the wreader (*escrileitor*) is born, the one who reads through writing and writes through reading in a new interactive symbiosis.

Obviously, all of this implies changing the concept of text: the text emerges here as a structure to generate meanings or as text in process but not as means of inter-subjective communication between author and user.

Philippe Bootz questions: "Where is the text, then, when its form does not cease to metamorphose?" The first innovation is the introduction of time in the core of the text: time invoking infinity, both in the field of creation and in the field of its reception.

Computer synthesized text always tends to imply a more or less radical disruption in the inter-subjective communication between author and receiver.

112 Original French: "un fantasma d'éternité."

1. Virtual Text?

The texts constituting this book do not really exist. More accurately, they do not exist as texts. They are in a way imponderable: they are only generated when the reader executes the Sintext program in their computer.

In this sense, the texts from this electronic book are virtual texts: they don't exist as formatted texts, not even in the disk being held by the reader. The disk with the present publication merely contains the project of the texts that will be engendered by the machine. The texts that the reader will be able to see parading through the screen don't exist previously fixed and, therefore, don't convey any previous meaning besides the one that will, in fact, detach once the text has germinated.

Is it a different notion of text? There's no doubt about that, above all, because only a computer can give these texts concrete existence; it's also in this sense that the program Sintext is a textual generator. The user will then deal with potential texts: texts that will only update on the screen right before his/her eyes. Only then may they be fixed in their semantic concreteness, whether by saving them in computer drive or printing a hard copy.

How should the notion of virtual text be tackled?

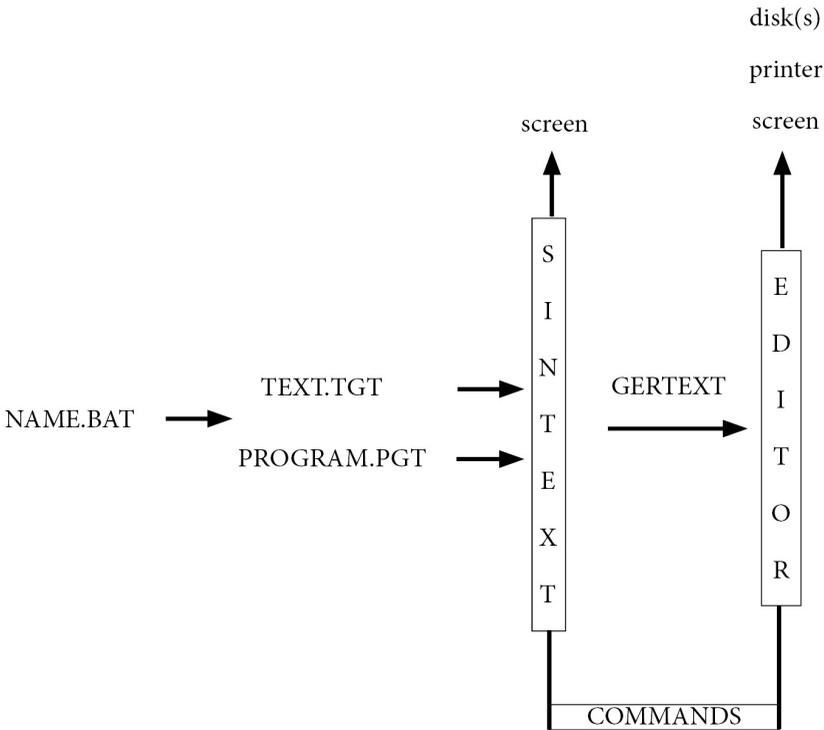
Virtual text implies the idea of potential text but transcends it. Potential literature, as work to be done, already existed since long before the computer age, as shown by the recent multitude of experiments from the *Ouvroir de Littérature Potentielle* (OuLiPo). However, the computer came to enhance, update, and reconfigure the idea of potential text.

Let us then enumerate some of the multiple aspects of the virtual text.

The virtual text consists of a structure or model that only updates according to a certain larger or smaller number of concrete variational texts (although tending towards infinite). All variational art consists in performing variations around a matrix-idea; that is why the variational text is multiple: multiform and multi-meaning.

The virtual text develops along time. It is only satisfactorily performed through the continuous flow of newly displayed configurations or successive partial states in a volatile way on a computer screen. It would be absurd to fully materialize these states through the endless output of continuously printed paper.

In this sense, paper is repugnant to the virtual text because paper is a fixed medium, stable and consolidated, which is contrary to the fluid, mobile, unstable



nature, and undefined profile assumed by the virtual text. The virtual text merely requires the paper to set down some concrete metamorphoses when they are chosen to be actualized from the enormous (immeasurable) field of variations.

The virtual text, therefore, calls for a multiple, variational, and repetitive reading that is semantically renewed each time.

Virtual text, abiding by its potential nature, can only truly develop its tendency towards infinity through an algorithm or generative program, updating the text in the continuous spiral of new forms and metamorphic meanings.

When this algorithm is configured in a computer program and developed by an informatics system, we will then refer to it as an automatic text generator.

Accordingly, the authorship of the variational text can only include the project, the model, and the structure (pattern) for the set of texts to perform. The actual meaning and the definitive shape assumed by each of its multiple variations escape, to a greater or lesser degree, their author. When the potential field

of variations of the model is wide enough—in order to preserve the potential value that justifies and supports it—the author cannot predict accurately the concrete meaning resulting from the successive metamorphoses performed by the machine. This means that the author is not responsible (or not entirely responsible) for what each text actually performed will say, in its singularity.

We stand before a structural openness that is immanent to any potential work. The structural openness of the model transcends the semantic openness that is inherent to any singular text.

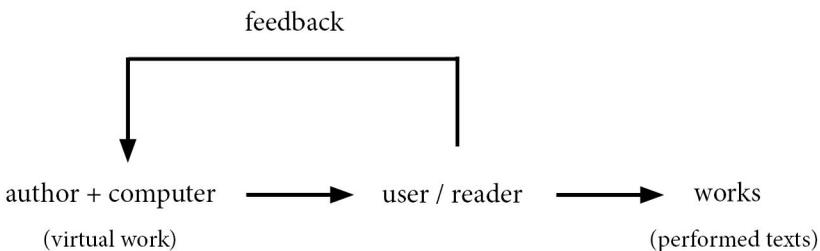
In this sense, it might be said that the virtual text is immaterial: what exists in the physical file space of a computer is not a text and is not a meaning. The program executed by the machine is in fact the motor of a plurality of textual performances to be materialized as signs. A text generator is software configured as genetic code for the infinity of texts to come to life.

The virtual text is, therefore, a seed, or a chromosome, containing in potential the form and the meaning of the new textual beings to which it is supposed to give birth.

We then reach the notion of egg-text or seed-text. And, as the egg is not yet the animal that will be born and the seed is not yet the generated tree—so too, the virtual text must not be mistaken for the work that the reader will experience. The virtual text is the substrate of a genetic program of multiple works performed by the machine within a given field of possibilities.

It is clearer now why we call this work an electronic book. It involves a new relationship with words, which from birth to death occur inserted in a different context of literary communication. The traditional literary circuit is hereby transformed in its multiple components: the relationship author/text, the relationship text/reader, the relationship author/reader, and in the very notion of Text.

We thus enter the realm of the Text conceived as a pure verbal machine, or text as a structure to generate meanings.



2. The Text-Synthesizer Called SINTEXT

Sintext (Syntext - SYNthesizer of TEXTs) may be conceived as a multi-use generator of literary texts.

Sintext was designed based on the assumption that any text—or text structure—is the result of a never-ending project. This means the author, in his/her path through the labyrinth of endless choices along the creative process, knows very well that the choices being made are not the only ones and, perhaps, not even the best ones. But, he/she works with a computer: the machine helps to explore the immense field of different possibilities and to discover possibly unexpected solutions or, at least, leaves him/her with the (always relative) certainty of having chosen the best path within the labyrinth of articulations and meanings.

At this point, there are two possibilities: the author may decide to present her/his own choice to the reader (their choice among the endless different possibilities from one and the same textual structure), or the author may decide to present the reader with a structure of texts in a potential state, offering the reader the possibility to explore on their own—with the computer's help—the multiple effects of meaning available for updating.

The first attitude may be comprised within the trend of *variational literature* (the author proposes to the reader a multiplicity of texts, different in meaning but equivalent in structure); the second attitude may be identified with the trend of *potential literature*, which is more or less interactive, where the reader may assume the role of joint-creator (reading through writing).

In any case, the computer works as an amplifier of complexity, or as an update for textual abilities, which means that it acts as a mental prosthesis, symbolically prolonging the author. The only task required from the program user is to conceive a text model—whose algorithm may simply consist of a first written text fragmented by square brackets to delimit the elements for recombination—and eventually to feed that textual structure into a more or less extended lexical repertoire. The computer is, then, presented as an informatics instrument directed towards the mirage of perfectibility.

From a technical point of view, the Sintext program was conceived of in C++ language, as an interpreter operating on a previously labeled text. Sintext language was developed in order to facilitate the writing of the textual program, allowing the user to dedicate his/her attention onto structural and semantic aspects of

the text, with no concerns regarding the usual problems involved in programming. It also allowed us to emulate several texts that made history in the scope of what is now called Computer Programed Literature (or Cyberliterature). Some of them were originally written in different programming languages (Fortran, APL, RPG, Basic) which are approximately rebuilt here.

Merely to exemplify and for documentary purposes, it is possible to evoke the Italian prototype *Tape Mark* by Nanni Balestrini, considered to be the first computer generated text; some of my personal texts extracted from *Literatura Cibernética*, such as “Aveiro,” “Porto,” or “História de um Homem das Cidades.” We can also evoke the retextualization of the *Poemas V2* by Angel Carmona or the emulation of the French Aphorismes computerized by the OuLiPo Group and based on Marcel Benabou’s ideas.

Nevertheless, the main goal of Sintext was to allow for a computerized instrument to create new texts, according to algorithms based on a combinatorial or random generator. This means that the software allows both the combinatorial rotation of the text elements, and also their randomized disarticulation. For that purpose, it is simply required to depart from a given textual model (matrix-text) and to adequately fragment it into interchangeable blocks (elements), following the simple inclusion of square brackets in the text, which can be made in a linear form or hierarchical (brackets inside brackets).

The Gertext archive, where it is possible to store all texts automatically generated by Sintext, thus constitutes a core module in which the program’s user, using a common editor or text processor (Edit, Works, Word, etc.), may perform her/his own selection, modification, re-composition, or enhancement of the textual material proposed by the machine.

Imagination developer and language disarticulator, this software requires human intervention at the end. Through this method, it addresses the insurmountable issues of fully automating natural language programming (a project that is currently controversial).

The Sintext program may be guided according to three different and complementary vectors, as follows:

A) A vector of Computer Assisted Creation:

Algorithmic literature: when developing an idea of composition beyond the strictly human limits, the machine operates as a complexity amplifier that

will allow the writer to explore a whole wide field of possible variations tending towards limitless (e.g. “Cosmic,” “Ofício”).

The computer is here a creativity enhancer: it converts the finite into infinite (Moles).

Random Literature: when using the machine’s genial stupidity to disarticulate language and to release the writer from the mental routines he/she is always more or less bound to, the program allows them to explore new linguistic effects, associative and metaphorical, that at first were unpredictable (e.g. “Aforismos,” “Homem”).

Here, the machine is a verbal research tool.

B) A vector of Didactic Application.

The program inter-textually renews the inextinguishable potential for meaning by re-writing classical texts or any other previously existing texts (e.g. “Machine to entangle landscapes” or “Five lacunar songs,” according to Herberto Helder).¹¹³

C) A vector of Theoretical Experimentation.

This is based on the modeling method (analysis through synthesis and synthesis through analysis): either testing a certain model of textual structure, or heuristically exploring the explanatory potential of a certain literary theory, or even through the simulation method, dynamically evaluating the performance of a certain literary model (e.g. “Haikai,” “Alea”).

In order to use the Sintext interpreter, the following tasks must be executed:

1. Create a text (TGT) whose division (fragmenting) is to be performed through labeling; this is the heaviest chore, since at this stage the text division requires study, demanding the creation of the list of words for permutation, of the structure to apply, etc. Afterwards, Sintext verifies if the labeling is correct.

113 Original Portuguese titles for these two sets of poems: *Máquina de emaranhar paisagens* and *Cinco canções lacunares*.

2. Create a small program (PGT) that uses the labeled text to produce new texts. Sintext verifies if the program is correctly written.
3. The fragmented text (TGT) and the mentioned program (PGT) will automatically run during Sintext startup when the fragmented text and the program are given a specific name (name.BAT) and share the same work directory as Sintext. These automatisms allow using Sintext in DOS .bat programs.
4. There is an instruction that allows the generated text to be saved in a file named GERTEXT. Subsequently, this file may be used for selection and alteration through text editing/processing.
5. Sintext successfully uses recursiveness: one text element may contain text elements which contain other text elements...
6. The main goal presiding over Sintext's creation was to release the user from programming tasks in an algorithmic language, such as Basic, Fortran, Pascal, Algol, C++, etc., releasing them to divide the text into elements, as the main task in this line of work.
7. Sintext language instructions are in Portuguese for the time being, but the software was designed to be easy to convert to any other language (see "Sintext Manual").

3. Between the Source-Text and the Target-Text

The Virtual text implies two stages: the matrix text and its variational multiples.

Between the source and the target, what remains? What is the actual creative labor of the program? Is the computer accurately placed in the literary circuit between the author and the user/reader?

Nothing surpasses the appeal of a practical case and its actual results. We will consider the case of Herberto Helder who once wrote (only once) in "Canção Despovoada" ("Unpeopled Song"):

This paradise is one of blue vipers

Regarding this same source of verbal material (matrix-text), Sintext has generated (n times) along its multiple executions:

This poet is one of blue caves
This silence is one of blue leaves
This penis is one of blue hands
This sonnet is one of blue mane
This poet is one of blue nights
...etc...

When in the same poem the poet writes:

I offer you a lily —says the sitting song

The computer immediately transforms this image into a sort of refrain or leitmotif indefinitely renewed:

I offer you a space—says the sitting blindness
I offer you a flat tire—says the sitting laundry
I offer you a space—says the sitting rain
I offer you a movement—says the sitting fern
I offer you a sleep—says the sitting flower
I offer you a face—says the sitting talent
...etc...

The “Canção em quarto sonetos” (“Song in four sonnets”) ends in the original with the following verse:

The clothes evaporating, but I do not feel.

And the machine multiplies this same poetic structure indefinitely:

The night evaporating, but I do not feel
The curve evaporating, but I do not feel
The landscape evaporating, but I do not feel
The apple evaporating, but I do not feel
The life evaporating, but I do not feel
The blindness evaporating, but I do not feel

The voice evaporating, but I do not feel
 ...etc...¹¹⁴

This does not merely concern an operation that multiplies meaning. When the purpose is language deconstruction, precisely at the expense of the machine's neutral indifference, we can identify that the computer is the ideal instrument to search for the unpredicted and the unprecedented image. "I offer you a flat tire - says the sitting laundry," "the painful net of a lighting penis," or "the cycling nights of energy and sadness" are obvious examples of what the machine created and the poet would probably not say.

The machine, because of its indifference, is able to help us in some domains to overcome our limitations. The advantage it has when compared to humans is, precisely, the fact that it is not limited by linguistic traditions, mental routines, associative habits, or aesthetic prejudice, nor is it limited by inhibition, repressions, or taboos of psychoanalytical or even social nature.

Free from these deterrents in its neutrality, the computer becomes a precious tool to explore areas that are forbidden for us, regardless of the effort we put into overcoming such barriers. Duly programmed for this purpose, the machine is able to cross new thresholds in linguistic experimentation, to remove restrictions, and to display a whole new literary universe to be revealed, which unravels in that space beyond the frontiers of our aesthetic habits and mental routines.

We will now display a complete fragment generated by Sintext:

The poet tightens the sleep, and slips.
 The Face
 is white, the space
 plain, the death
 certain. There is no curve
 of cardinal points.
 Bitch the night, underdeveloped.
 Between rhymes and the instant appears and dis
 appears a rose. On a summer day,
 confused,

114 See Appendix 1 for original Portuguese.

arrive black grapes and balconies
 of apples hitting
 their light houses tremendously clear.
 And the places
 everyone expecting sweet gardens that loom
 the score of the foam
 The head
 raises cruel caves during the combustion
 of the lines
 of paradise. Painted in the distance
 with leaves breathing brutally - that
 melancholy
 fight, shining,
 under the Wisteria
 of ruthless beaches?
 Honey madness
 boiling, a painful net of a lighting penis,
 one death
 incandescent portion
 stronger of magic - Where the painted portraits
 at the end of time
 of innocence?
 their black grapes
 throbbing glow
 in a horrible voice.

Because there are serious ways for the dead
 to travel: cyclist nights of energy and sadness.¹¹⁵

We must bear in mind that, in this case, the program was supplied with verbal material precisely consisting of all the poems in *Cinco Canções Lacunares* by Herberto Helder: “Canção Despovoada,” “Canção em quatro sonetos,” “Um deus lisérgico,” “Bicicleta,” and “Os mortos perigosos, fim.” On the demonstra-

115 See Appendix 2 for original Portuguese.

tion directory, Demo, the reader may visit the endless resulting variations and experience the text's virtuosities. To do so, it is merely necessary to call upon the corresponding .bat file (on the demonstration directory type: 5CANLAC). With this same poetic material, you will be able to generate an endless repertoire of new texts and to obtain through printing, a reproduction of hundreds of pages (or more!) per day; examples like the following:

In a time sitting on foam a submerged childhood
 sang the space.
 It was after death.
 In a time: death,
 ferns
 sleeping. Lightness flowering. Then the rain
 pronounced scarves, doves
 printed. Cooled lands in the body
 posterior
 to that riddle.

Honey
 has its
 dangerous
 incli
 nation: when touched,
 combustion burns. The smile has a life
 on bottom: trembles. This
 penis is one of blue hands.

Appears with the girl of a deadly night. Who
 feeds on death, who
 undresses among flowers leaning, I ask,
 who loves until losing the month?

I offer you a flat tire
 - says the sitting laundry.

Look: I wanted to know in which animal
we die, to have a flame and with it
cross light landscapes and burning and crimes
with no rose. There is in the resolute machines
a lily to
shake the dust, and your air
to turn slowly full
of fever to the country of a child
terrible and cold.¹¹⁶

In “Os mortos perigosos, fim”, for example, Herberto Helder wrote:

A net of boiling honey, a painful net of a lighting honey

And the machine suggested:

A madness of boiling honey, a painful net of a lighting penis

Also from the same source text:

An incandescent fern in the head’s strongest part

And Sintext suggested:

An incandescent death in the magic’s strongest sigh

Again the source text:

From the night arrive water landscapes
striking in their caves tremendously clear.

And the computer suggested:

116 See Appendix 3 for original Portuguese.

From the night arrive children's hands,
striking in their leaves tremendously clear.

Again the source text:

To know what scarf belongs to them,
which bundle of bloomy lines has woven his face dropped in the air.

And again the program:

To know what name belongs to them,
which heart of bloomy islands has woven his frightening curve
dropped in the air.

Once again the source text:

Do not make that month search you:
carry the dead as if they were a green scarf

And again the computer suggested:

Do not make that painful tissue search you:
carry the plans as if they were a green name¹¹⁷

In "Canção despovoada" ("Unpeopled song"), Herberto Helder wrote:

In a time lying on silk, an immerse woman sang the paradise

And the computer with its own poetic material multiplied the meanings and proposed (n times):

In a time lying on foam, an immerse childhood sang the space
In a time lying on sweetness, an immerse child sang the painful fabric

117 See Appendix 4 for original Portuguese.

In a time lying on fruit, an immerse sweetness sang the sun
 In a time draining on water, an immerse head sang the absolute month
 In a time lying on death, an immerse lightness sang the time
 In a time sitting on girl an immerse net sang the sleep¹¹⁸

In “Canção em quatro sonetos” (“Song in four sonnets”), to quote another example, Herberto Helder had written:

The precipitating apple, the fires in the night, the strong snow: and the harsh beauty of the head-.

And the machine, among many other variations, generated:

The precipitating speed, the symbols in the night, the strong snow:
 and the harsh beauty of the music-.

The precipitating flower, the maps in the night, the strong snow: and
 the harsh beauty of the water-.

The precipitating voice, the fingers in the night, the strong snow: and
 the harsh beauty of the dead-.¹¹⁹

Is there no reason to be surprised that such a wide range of results were put forward by the machine? Can it be said that these results surpass—quantitatively, but also often qualitatively—the source text? Or that the machine surpasses man? And that the program enhances the poet?

There is no doubt that such a literary production does not provide for a 100% return. But the Gertexto file is available to select and arrange a final montage of the multiple texts proposed by the computer, and here, the Sintext user can store the whole sum of results forwarded by the machine at an overwhelming speed. The final product must, afterwards, be processed through an ordinary text processor. Each day, the user may manufacture a new book of poems by releasing the entire semantic load potentially contained in a pre-existing book and, in the process, exhaustively enhancing their own ideas.

118 See Appendix 5 for original Portuguese.

119 See Appendix 6 for original Portuguese.

In “Os mortos perigosos, fim” Herberto Helder (once only) wrote:

Gardens fidgeting between the summer and the darkness. / Progresses
the air

In “5caniac,” Sintext produced (n times):

Holes fidgeting between the face and the darkness. / Progresses the
name

Dead fidgeting between the honey and the clouds. / Progresses the
ether

Cyclists fidgeting between the vice and the darkness. / Progresses the
penis

Fingers fidgeting between the name and the darkness. / Progresses
the heart

Flocks fidgeting between the distance and the darkness. / Progresses
the flat tire

Hallways fidgeting between the silks and the sea. / Progresses the
silence

...etc...¹²⁰

Whatever the literary criteria may be, can we conclude that, here, the fruit overrides the seed?

Certainly, the machine exists to overcome human limitations. Only to that extent is it justified. But, should we be relieved, at least based on practice, that the computer works here as a complexity telescope: able to expand widely the amplitude of a literary idea?

Here is one last fragment, generated in continuous motion (from the material stored in the Gertexto file):

Caves cooling in paradise posterior
to that riddle:
immobile live

¹²⁰ See Appendix 7 for original Portuguese.

the gardens of the voices. Would be born wind lines if someone,
smiling, would breathe.

The body
has its
dangerous
inclination: lily of oranges over candidness.
When it is touched,
dancing, burns. The lightning has a city on bottom:
shivers. Some people stay in paradise to watch the air.
Terrible is the air from the window.

Walking through the song
boiling the leaves, it is said: the fish the name and the
guitars. There is a sacred crime where
love
appears I say: clearing.

Speed of honey Oh,
intelligence. Appears with the song
of a deadly night.
I offer you a sleep - says the flower,
sitting.

Look: I wanted to know in what darkness
we die, to have a painting and with it
cross light beaches and burning and crimes
with no childhood. There is on the Hills
a cold to
shiver the dust, and your honey
to turn slowly full
of fever for the fish of a rose
terrible and cold.

Death

had water.

Cooling nights on the posterior side
of that riddle. Why does sleep have parsley?
Would be born voices of poet if someone,
smiling, would breathe.

Evaporates the night
but I do not feel.

In this nocturnal mirror I write what I scream, or else that I sleep,
or that sometimes I go mad.
Beating the landscapes of the flower
slightly below silence. I want to know
the sleep of the dying: the dress of cold burning, the feet in motion at
the center
of my picture.
The precipitating speed, the symbols of the night, heavy snow:

and the harsh beauty of music - A girl with a raw blow
lives in me without taking a step, loving
to breathe in their death, the space
of motherly blood.
My wind, stopped before
The mortal gold that waited.

Evaporating the landscape but I do not feel.

In that nocturnal anus I write what I scream, or else that I sleep,
or that I sometimes go mad.
The poet gives to beauty as the other animals?
Cooling landscapes in the adolescent
posterior
to that riddle:
immobile live
the gardens of the voices.

When it is rang,
silk, burns. The month
shivers. Some people stay in a smile to watch the air.
Terrible is the air of innocence
and of caves stopped in attention. This
silence is one of blue leaves.

I say: speed of the name.
Who feeds on children
who
undresses among leaning leaves, I ask,
who loves until losing the cotton?

I offer you a space
- says the rain
sitting.

Ah, a Face
is what I seek
in the dreadful islands. That is why that flower sings to the voice
of a time -

Look: I wanted to know in what heart we die, to have a death
and with it
cross black grapes
light and burning and crimes
without head. There is in Wisteria,
a paradise to
shiver the dust, and for your name to turn slowly full
of fever for a whirlwind of a madness
terrible and cold.

Among the rhymes and the savage oxygen,
advances the penis
running with the paws

on the white night.

Cooled lines of the day posterior
to that riddle:
from the night
come lines of water striking
in their voices tremendously clear.

In the score of madness
speed
raises cruel lines during combustion
of the voices
of the poet -
painted in the dance,
on the islands of hands
ruthless,
a voice of honey
boiling sings.

Do not make that granite search you.
Carry the holes as if they were a green heart
coming
from a child
transparent. The silence - is full
of icy alcohol - Do not sit behind
a stopped scarf.
Why does paradise have parsley?
When it is rang,
the night
burns.
Some people stay in a sleep
to watch the air.

This
poet is one of blue nights:

then dressing.

Who feeds on painting who
undresses between light leaning houses, I ask,
who loves until losing the air?¹²¹

By definition, a computer is a mental prosthesis: an amplifier of our mental abilities, from memory to logical-combinatorial operations. This is true for the field of science as well as for the field of art. Let us then say that Sintext is presented as a literary prosthesis: the reader-user has the ability to use it with more or less creativity!

4. Theoretical Synopsis: The Context of Sintext

This program results from the relative continuity of Cybernetic Literature, still following the mirage of textual automatism but incorporating the most recent attitude of progressive interaction with the reader-user.

A few very synthetic definitions will be presented in order to enlighten the theoretical framework of the present project.

1) COMPUTER: signs manipulator.

In other words, the computer is considered here as the manipulator of a set of linguistic signs (repertoire), according to a given set of instructions defined by the program (algorithm). According to this view, the computer presents itself as a non-deterministic machine where the information delivered (output) is different from the information introduced (input). This stands in opposition to the machines said to be deterministic—such as the magnetophone—where the message being stored remains identical at all times.

2) LANGUAGE: from Lucretius to Kristeva, passing by writers as J. L. Borges, the long atomistic tradition construes language as an endless combinatorial of linguistic atoms: letters, phonemes, vocabulary, phrases, etc.

¹²¹ See Appendix 8 for original Portuguese.

This formulation leads to the next one.

3) WORK OF ART: structure of signs recombined in an innovative manner.

4) COMPUTER ASSISTED CREATION: Similar to Gianni Rodari's *Grammar of Phantasy*, which uses Nake's formula, a three element model could be proposed:

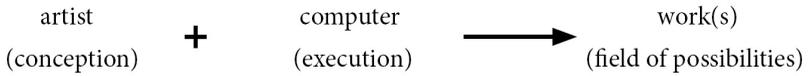
$$C = I (S + R)$$

To create on the computer (C) is equivalent to supplying a finite repertoire of Signs (S), a finite number of Rules (R) to recombine those signs among themselves, and an Intuition (I), simulated by the algorithm, to determine which signs and which rules will be selected each time. The trinomial set defines the Aesthetic Program. It should be noted that I can actually represent the intervention of randomness as simulator of imagination. It is, therefore, a fantastic binomial in which S and R are the norm on one side while I is creative choice or freedom.

5) AESTHETIC PROGRAM OF COMPUTER GENERATED LITERATURE: the previous formula, in fact, synthesizes computerized artistic creativity in its most abstract form. At the dynamic core of the I or imagination, is the generator, usually consisting in a random, combinatory, or algorithmic procedure. The personal computer age also adds interactivity.

6) CREATIVE FIELD: the creation of the work model remains a field for human design (ontological or essential creation, to employ the expression coined by Abraham Moles); exploring the field of possibilities opened by this potential model is the machine's task, one it may perform infinitely faster and more rigorously than us (variational creation around a model, also according to Moles).

Regarding this issue, an adaptation of Max Bense's scheme¹²² is applicable:

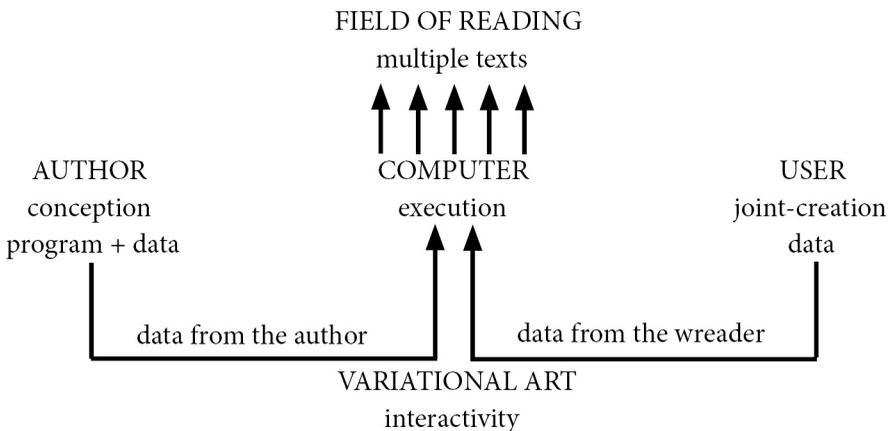


This scheme implies the distinction established by Abraham Moles:



7) FIELD OF READING: Where one would expect copies, which are identical to the model, this aesthetic program produces an infinity of multiples, all of which differ. This opens the possibility of real variational art. If the interactivity is strong, the usual passive act of reading becomes a participatory activity of real reading-writing and the reader assumes the status of wreader.

8) DIAGRAM: the set of ideas that supported our reasoning can be resumed in the following diagram that displays, in its context, the communication established by Sintext in the scope of Computer Generated Literature:



122 This scheme is an adaptation of Bense's work by Pedro Barbosa.

In the scope of interactive literary creation, the working mode of Sintext promotes the symbiosis between the program user and the software. Therefore, the user is no longer just a reader (albeit participating), but rather takes his/her part in the role of joint-writer.

In this case, literature seems to actually establish a new stage regarding the creation, support, and circulation of messages. The disk contains an interactive program with options for the reader-user, who within certain restrictions (rules) will be allowed to elaborate not only his/her reading but also the construction of the text to visualize on screen or to set in writing via printer.

Does Sintext set rules and restrictions? Undoubtedly. The built-in language commands define the syntax and the repertoire of instructions that may be entered in a program (PGT) for application on a matrix-text (TGT). But art was always that: inventive freedom used in a context of restrictive rules. What is a sonnet? A poetic creation accomplished inside a formal framework of 14 verses brought together through a determinate metrical and rhyme rapport. Sintext also implies the establishment of a formal restrictive framework, even if animated by a random generator. It is within this formal framework (including the PGT program and the TGT archive) that the user-reader is to perform their creativity. The work version by Sintext will provide user-readers exactly that challenge so that the reader may project and create new texts upon it. It consists of an appeal to their attitude as joint-creator: as wreader.

Within the computing age, three aspects are to be considered in this new communicative context of Cyberliterature:

1st) Fixing the message: a new writing medium emerges. Although not requiring paper mediation, the written word potentially stored in magnetic devices is displayed electronically upon the monitor of any computer (even though it may also be set on paper through output to a printer).

2nd) Message dissemination: the text is mediated by magnetic devices (such as the disk) or directly between computers by more or less vast network connections (the Internet is merely a current example).

3rd) Message production and reception: the literary message is structurally presented as open work, both in its potential mode and in its interactive mode. This implies the participation of the user to give it verbal existence. Once the message is constituted—by choices of the reader-user in the context of a labyrinth of reading paths—the resulting text is, also, the personal emanation of the program user. Such an emanation is enhanced when the program offers the possibility to intervene, modify, or rewrite the potentially proposed text.

In this way, the program user may assume a merely passive reading role (as in electronic reading in demo mode), and he/she may also be given the opportunity to joint-write the proposed text in work mode: literary reception then takes on the status of actual co-creation. The work is presented in this case as a really active process of reading-writing (or reading-through-writing). A new terminology is required to name such a process: wreader and wreading might be appropriate terms if not for the pompous mockery they might cause. Informatics reveals itself today not as a simple new medium available in the scope of literary production. It is changing the very notion of writing and reading and integrating these two communication poles in a new unifying unit—wreading.

This being said, all we can do is wish you a nice work, dear reader!

TOWARDS A THEORY OF COMPUTER GENERATED TEXT¹²³

EXECUTIVE COMPUTER AND CREATIVE COMPUTER

PEDRO BARBOSA

1. Technique and Discursivity

One of the great contemporary mutations is no doubt the installed symbiosis between two realms once considered irreconcilable: technique and logos, technique and discourse, or technique and language. Since the beginning of the technological revolution, such symbiosis has increased: just consider the new means of recording and communication that stem from new technologies (from photography to the cinema, from radio to television, from video to holography). In a fully electronic age, such interdependence between technique and discourse is already so intimate that sometimes it is hard to distinguish where the language domain ends and where its supporting means of record or transmission begins.

Finally, with the most recent trends of the so-called computing revolution, a new symbiosis is dawning—not only between technique and discourse but also between technology and creativity. This symbiosis follows scientific experimentation and modeling towards the development of Artificial Intelligence through computer generated art, the recently coined Infoart, as well as other recent developments.

It is with this scenario of new theoretical and practical problems raised by the recent alliance between technology and creativity that we propose to unveil some of the curtains that hide them. Yet, in such a vast field of relations, we will circumscribe our analysis to the specific scope of the symbiosis between computer and Art, addressing in the first place its more restrict application to Literature.

Adriano Duarte Rodrigues wrote the following about what he called the “logotechnical dimension” of present communication:

The recent access of technicity onto the sphere considered until a few decades non-technical, to the sphere of language, with the establish-

123 Pedro Barbosa, “Esboço de uma teoria do texto computacional,” from *A Ciberliteratura: Criação Literária e Computador*, 1996, pp. 25-36. Translation by Isabel Basto.