



Philippe Bootz

## Regarding Digital Literature

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### ABSTRACT

The paper focuses on some facets of programmed digital poetry. In a first part, it presents some forms: the Jim Rosenberg's non standard conception of the hypertext, syntext and the first theory of the wreader by Pedro Barbosa, the automatic generation of text by Jean-Pierre Balpe and his theory of meta-author, the processual conception of generation that is implemented in kinetic poetry, syntactic animation. In a second part, the paper shows that these forms reask the conception of reading by giving a predominant role to the point of view that a reader can have. Several concepts are proposed to take into account these points of view in a theory of reading and the close reading of a programmed kinetic poem shows how they can be used in analyse.

### KEYWORDS

Digital Poetry; Programmed Kinetic Poetry; Generation of Text; Digital Reading.

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### Dimensions of digital literature

Digital literature? It would be better to talk about digital literatures. In fact, they constitute a galaxy in which technology can have the status of tool (in combinatory generation, for example), sometimes of simulator (as in automatic generation) and often opens new literary forms. Digital literature(s) generally mix properties coming from several main fundamental dimensions including hypertext, algorithmic generation and animation. These three dimensions emphasize complementary aspects of the work: the hypertext dimension focuses on structural aspects concerning the organization of information; the algorithmic dimension focuses on the textual modelling dimension of work, and the animation dimension focuses on sensible, physical and emotive dimensions. These dimensions are not specific to digital literature, but digital literature is certainly the first literary situation presenting them simultaneously and this fact is enough to displace the literary questions usually associated with each separate dimension. Digital literary works can focus on different dimensions of the program and not only in its algorithmic dimension. Alan Sondheim created the label "codework<sup>1</sup>" to specify this dimension. Generalizing the



codework dimension, one can claim that literature and aesthetics are present in every part of a work, even in its non-readable parts. Therefore, nowadays most pure digital works contain programmed aesthetic forms inscribed inside *dual signs* having one part in the program and another on screen. In order to be complete, one must also take into account that these dual signs are necessarily joined with signals (resulting from the treatment of the program by computers) that only exist while running. Even if these signals are not a sign because they cannot be received by a human receptor, they are a part of the work. Naturally, all these dimensions do not have the same weight in each work, sometimes some are missing, but they define a space inside where works can be placed and compared.

I will restrict my objectives to some specific, yet important ways. You can refer to an extensive essay for an overview<sup>2</sup> of the different facets of these dimensions.

### Jim Rosenberg's poetic hypertext

Hypertext was originally theorized as a means of documentation. It was created for this purpose. American theorists developed two perspectives. Ted Nelson's point of view is the most dominant. It focuses on the navigation and exploration dimensions of the link. By doing this, the node of hypertext can be considered as a fragment of the global information that the reader<sup>3</sup> edits: editing information completes the traditional noematic (cognitive) activity of reading. It is sometimes said that the Reader is a *wreader* to qualify the transfer concerning a book Author's prerogative from the Author to the Reader. American theorists associate this transfer with an increase in the Reader's freedom and a loss of the Author's authority.

The classical hypertextual point of view is suitable for narrative hypertexts but has no significant application in reading poetic, non-narrative hypertexts. Before Ted Nelson, Vannevar Bush developed another point of view. For him, linked information works in the same way as the mind; a link is the technical way in which the mind can jump from an idea to another, without having to repeat a pre-existing logical structure of thought. Jim Rosenberg assumes the same point of view. For him, hypertext is an expression of thought. Certainly, as a poet, he pinpoints this expression in any element of language. Therefore, he adds links inside the sentence itself. In his *diagrams*<sup>4</sup> (cf. Appendix), Jim Rosenberg uses a normalized graphic syntax that enables him to apply to natural language several features, otherwise impossible in written text. The most important are syntactic feedback and the paradigmatic use of clauses which can replace words in graphic structure. The structure itself is recursive: a diagram can be used as a paradigm axis inside another diagram. Jim aggregates all paradigms of a given diagrammatic position into a indirect readable cluster. Consequently, by moving the mouse near one term, this term is isolated for reading.

The concept of "fragment" can no longer be employed here: the Reader should construct the linguistic utterance by applying the rules defined by the graphical structure. But she cannot do this because she quickly undergoes cognitive overload. Contrary to narrative hypertext, Jim's use of the link no longer joins information in an editing process, but replaces verbs and reflects the dynamic side of thought. This use of the link establishes a connection between hypertext and combinatory literature. This work also establishes a connection between hypertext and animation by the way in which the reader changes visibility into readability while she moves the mouse in order to isolate a clause.



### Functional definition of digital literature

Jim Rosenberg's use of links shows that the traditional definition of hypertext (a set of linked nodes) is *one but not the sole* possible realizations of a more general approach. In general terms, I would define a hypertextual structure as a global, non-sequential structure of information joined with local sets of functions based on a chosen structure (if... then) used by the reader<sup>5</sup>. The reader is the "effector" of the local function while the author is the "constructor" of the global structure. Using this definition, hypertext appears to be a particular use of the global/ local semantic axis within each digital work. In the algorithmic dimension of combinatory and automatic generators of text, the global structure is the algorithmic model of generation; it does not enter into readable or visible information but into the program, and the local set of functions consists of the activation modalities of different algorithms. These functions also consist in structures of "choices" made by the "random" function while the program is running; the effector of the local functions is no longer the reader, but the executable program (not the written program one can read on a print-out). In an animation, the global structure is the editing of the animation and the local set of functions of choice is performed by the modalities of noematic reading as we will show below; the reader is the effector of the choice, but not in an ergodic activity such as hypertext.

The "functional" definition of digital literature as a balance between a global structure and a set of bifurcations acting locally in this structure can be applied to works for which the digital is an environment and not only a support, a channel or a media, i.e. for works that never lose their digital nature from programming to display.

In Rosenberg's work this balance engages the nature of natural language. It is why one can qualify it as "poetic" work.

### Generative literatures

#### 1.1 A classification of generative literatures

Generative literature also realizes a transfer of inscribing from the author to another "actor." In contrast to hypertext, this actor is the program and not the reader. This transfer is classically identified with a change in the roles of the author and of the reader. There are 3 forms of generative works that may gather into 2 groups that differ both from the technical and from the conceptual point of view.

I call the first group "algorithmic literature". It is composed of digital combinatory works and automatic generators of texts. I call the second group "processual generation". It contains programmed animations designed to be read while the program is running in real time.

All generative works deny the aura of the written text because the later appears as result of a calculus. In algorithmic literature, this calculus is linguistical and the algorithmic dimension is included in the project are expressed by Valery as: "Peut-être serait-il intéressant de faire une fois une œuvre qui montrerait à chacun de ses nœuds, la diversité qui peut s'y présenter à l'esprit"<sup>6</sup>. But algorithmic literature displaces this conception by inserting this "digital environment", the fundamental influence of the system inside the conception of the text, The text is no longer restricted to a written text but is now a "linked text"<sup>7</sup>: "a printable generated text is not a printed text. Two examples, *sintext* and an automatic generator, will explain this difference.



## 1.2 Sintext: the true nature of combinatory digital literature

In mid-1980's, Pedro Barbosa created the first version of the program *sintext*<sup>8</sup>. *Sintext* is a generator of combinatory generators that can recreate all generators created before it. Combinatory generation is the oldest form of digital literature. Usually, people consider Théo Lutz's *Stochastische Texte*<sup>9</sup> (1959) as the birth date of digital literature. Combinatory literature is the first way digital literature was explored. It was a transfer of the potential literary conception from print to computing, with only a changing of media. But *sintext* displaces these conceptions by presenting properties of the digital device that have consequences in the understanding of what a generated text is:

- the existence of 2 classes of algorithms that have very different behaviours while running. The first class computes using linguistic calculus that creates the generated printable text. I call it the class of "synthesis algorithms". The other "manages" the display of the generated text. I call it the class of "display algorithms". These two classes exist in each programmed literary work even if it is not computer. For instance, the printed version of Queneau's *Cent mille milliards de poèmes* and one of its digital versions only differ in the display of algorithms (they are mechanically programmed by a play of strips in the book), but not by their synthesis algorithms. The classical combinatory paradigm considers that only the synthesis algorithms have a relationship with the text and that the display algorithms have a relationship with the technical device, but not with the text. The device is considered to be the support, the "canvas" of the text.

- the virtual and not potential nature of the generated text. Following Levy, the

virtual is the contrary of the actual and the potential of the existent. It is needed a non-managed intervention, external to the system in order to actualize the virtual and entail the actual state of the system as being non-knowable in regard to the properties of its virtual state. To the contrary, the system is totally known in a potential state, only its existence is overlooked. Combinatory printed works such as Queneau's *Cent mille milliards de poèmes* are potential: the reader can access all data and rules (synthesis algorithms) because they constitute a closed and limited space that makes them globally known. Nevertheless, it is not the case of a digital environment. Translating a work into a digital environment replaces space with time: data and rules may now be discovered and reconstructed while reading on screen and the reader does not have an overview as it is the case with the book. In this situation, for the reader exists only the variants generated by the computer, notably if the generator is a digital native and has no printed version. The non generated variants are not potential, they remain an abstract field, an idea, perhaps a parallel world; they are left in a void because the set of generated variants does not guarantee that all data and rules have been applied.

- the situation of the Author as an "é-crit-lecteur". Using *sintext*, the Author of the generator is a user of *sintext*. In this situation, she can change data describing her generator (words, clauses, synthesis and displaying algorithms) by reading generated texts on screen. She is, therefore, in a situation of reading and of inscribing her generator. This situation is often considered as relative to the reader's situation in hypertext theory (using the term *wreader*), but it refers to the position of the author in digital generation theory. In fact, this situation characterizes all types of programmed works. In order to avoid dissolving the concepts of author and reader, a good theoretical solution

is to consider that these terms refer to *roles* in the situation of communication and not to individuals. The concepts of *écrit-lecteur* and *wreader* show the existence of feedback between these two roles, an individual can quickly pass from one role to the other; the digital environment changes the nature of reading and writing, but these roles continue to be well defined both by their goals and relationships with the other parts of the global system<sup>10</sup>.

### **1.3 The automatic generation of text by Jean-Pierre Balpe**

Jean-Pierre Balpe has created automatic generation of texts since 1975. Combinatory generators start with well-formed texts, i.e. surface texts in a theory of generative grammar. On the contrary, Jean-Pierre Balpe starts with deep formulas of generative grammar and a vocabulary described with metadata. He can generate infinite novels in the style of a given Author (even himself). An automatic generator is a simulator of texts, no longer a tool for exploring constraints or linguistic structures. The virtual nature of generated texts is then more evident than in combinatory texts and the changes in the nature of the roles “author” and “reader” is more decisive. Jean-Pierre Balpe explains it in his theory of “meta-author”. Using the term meta-author introduced by Douglas Hofstadter as he is “the author of the author of the result<sup>11</sup>,” Jean-Pierre Balpe shows that in programmed literary, the traditional role of the author divides into 2 parts: the individual remains inscriber of the program, managing the conception of the text, and the rules applied to the generated text. She is then a meta-author. The program becomes the inscriber of the displayed text on screen. For Jean-Pierre Balpe, the virtual nature of the generated text induces an increase in the Reader’s freedom.



### **1.4 Process-oriented generation: another conception of the actor’s roles**

The two above-mentioned generative proposals that delimit the algorithmic conception are efficient from the algorithmic point of view which considers that the program written by the author fully manages the generated text. This is true only in a digital environment when one considers that synthesis algorithms create a complete model of the text and that display does not affect the literary character of the text. This conception fails when one considers that display has literary properties because the two classes of algorithms react differently while running. The result of the synthesis algorithm does not depend on the machine on which the program runs: it only takes more or less time to build the generated text. But the display of the other set of algorithms depends mostly on the complete technical context of running: the text becomes “labile”. While reading, this property creates non algorithmic changes both in aesthetics and in semantics from a technical context to another. Therefore, this set of algorithms cannot be considered as a model of the displaying behaviour. It just so happens that display is considered to be a textual process in process-oriented generation because this perspective is in continuity with concrete and visual poetics.

Process-oriented generation modifies the situation of the author. The meta-author property is incomplete: she is only co-author of the generated multimedia event (the generated text), but the other co-author does not exist because the characteristics actually used by the work while the program is running, only depend on the technical actors that have neither aesthetic nor literary design on the work. Running a program is not



an equivalent to an orchestra playing a piece of music.

On the other hand, this kind of generation also changes the role of reader. Some Authors such as Petchanatz (for process-oriented generation) or Tisseli (for algorithmic generation) show that the generated text is a flow and not a perennial structure. In this condition, it is totally impossible to read without information loss: the Reader must agree to process incomplete information in order to create a meaning. While reading, she sees that she is losing information; reading is necessarily a channel surfing, the generated material can be seen in whole, but only a part of it can be read. She is no longer the center of the system as in the case of hypertext. At this point, reading is not a condition of freedom, but an activity with limited power, an activity that can destroy the perceptible events of the works as in Tiselli's *degenerativa*<sup>12</sup>. As a result, reading is no longer the unique function of reception. Sometimes, reading is no longer sufficient to access all the dimensions of a programmed work as we will show below. What is denied here is the traditional conception of "informative reading", the one used in reading newspapers.

Consequently, process-oriented generation is a trap both for the Reader and for the Author. The digital appears in it as a new condition for reading and writing. It is a new context for literature that makes it possible to ask questions that are less common to ask in other environments, for instance the nature of writing and reading. As the digital environment is basically performative, functions such as reading and writing become a part of the literariness of the work.

### 1.5 Syntactic animations

Process-oriented generation is a programmed poetic animation that must be read at the time the program is running. Therefore, it encompasses many properties of poetic animations. Every poetic work containing processes, i.e. the change of one or more parameter in time, is a poetic animation. Kinetic poems (poems where words are in movement) are a particular type of animated poetry but there exists many other possibilities. For instance, a poem where words appear and disappear, or in which colour changes in time also belong to the class of animated poetry. Therefore, animated poetry is characterized by the introduction of temporality inside the written part. In order to avoid using the term "text" for different things, I call "transitoire observable" (observable transient) the multimedia event that one reads. This term has been chosen because animated poetry neither considers the text as a fragment similar to hypertext, nor as a variant of a model similar to algorithmic poetry, but as a transient observable state of the work that cannot exist without the physical process of display. In programmed animated poetry, physical running and the algorithmic dimension of the program become equally important, even when the display serves to record the transitoire observable on video. Display is no longer considered to be a technical function of the system, but rather a textual moment, a physical enunciation and no longer an engraving, the moment in which the work is embodied in the machine. Running makes digital work take "literary flesh". In process-oriented generation, the Reader must commit herself to her reading as she commits in her real life. She must often build a meaning without having all the necessary information.

This reading collects only a part of information of the work in order to create a



meaning. This is the typical behaviour of channel surfing. Such a reading usually has bad reputation because it is not adapted to printed texts. Used on these texts, it breaks long term relations with the written structure, making the reader “text crippled”. But it is the only possibility to read animated texts when strongly labyrinthine multi-linear information changes very quickly, making it impossible to process. In this case, long-term structures can be perceived only in rereading. Rereading becomes a natural moment of reading itself. It produces disparities in perception and not only in interpretation. Rereading increases the role of memory and interpretation results from a contrast between the fragments perceived at different moments. This phenomenon introduces an imaginary side of the text in place resulted from the text itself during reading. The interpretation relates to what has been perceived and memorized, not to the objective reality of the transitoire observable. One sometimes notes that the Reader “perceives” things that do not exist. Psychologists explain this behaviour through the process of “injection of knowledge”: when information is too incomplete, a person unconsciously completes it in order to create meaning that is with her knowledge and wisdom. Finally, throughout these channel surfing specific processes, reading enriches what the machine produces.

Syntactic animation is the oldest form of animated poetry that claims to be poetry by nature. It originates in France in 1985 when Tibor Papp presented his work *Les Très Riches Heures de l'Ordinateur n° 1* during the Polyphonic festival at the Pompidou Center. The aim of syntactic animations resides in the permanent syntactic re-configuration brought by temporal modifications of glyphs. The literary project of these texts is to manipulate “a becoming language, a ‘during making’ text<sup>13</sup>”. To do this, these texts mix 2 syntaxes simultaneously: the

temporal fugacity of chrono syntax lying in oral literature and the spatial permanence of the topo syntax lying in written literature. This is why I claimed in the 1980’s that animated poetry develops “an oral character inside the written”.

Usually, chrono and topo syntaxes lead to the same meaning and the written is only a transcription of the oral text: While reading the written sentence “Paul kills Jean” (topo syntax), I read the words “Paul” before “kills” and “Jean” in the last part (chrono syntax). However, in an animated poem, this written sentence can be obtained by making the word “Jean” appear first, and be followed by “kills” and then “Paul”. Chrono and topo syntaxes have opposite meanings because they exchange the functions of subject and complement. One can understand that a changing in time somewhere on the screen can modify the meaning of another part of the written text. When there is continuous change, the written text is never stable and chrono and topo syntax can act simultaneously on different parts of the transitoire observable. An animated text is intersemiotic: the intersemiotic character is not a consequence of using different media as it is usually the case, but of reading the same material in 2 semiotic systems. Reading always switches over two modalities: temporal reading is based on chrono syntax and spatial reading on topo syntax. In temporal reading, what is read in the transitoire observable seems to be an utterance that would always be under construction whereas in spatial reading it appears as a collection of texts. The author cannot anticipate the moments of switching or the events that will make the reading switch from one modality to the other. The number of texts<sup>14</sup> a Reader can read is *incalculable*. The virtual character of digital text is affirmed all the more because reading performs the creative process required by



the virtual, in a non predictable manner (contrary to hypertext that offers only some identified possibilities). Similar to the other dimensions of digital literature, reading calls for information loss. The Reader is spectator to this loss, she perceives as a noise the flow of information she could only read in the other modality than the current one. Reading cannot avoid channel surfing.

Also while book-objects can have a temporal dimension, the internal temporality of digital animation is different. If the temporality of the book is inscribed in the properties of the material (using a photo paper, for instance), it always involves the same location in time. If not, the temporality is due to manipulations and depends on ergodic reading process (good examples are the process poems<sup>15</sup> that Dias Pino has been creating since the mid-1950's) and is not an internal temporality.

## 2. Reading digital poetry

### 2.1 An increasing number of literary dimensions of the work

Channel surfing and syntactic animations mechanisms show that the *transitoire* observable is not the digital equivalent of the traditional notion of "text". The reader needs to choose a notion to describe what "the text" is. These can be unconscious choices. More generally, reading is never totally free, it is constrained by beliefs, waiting, a priori judgments, pre-existing points of view ... I call this set of constraints "profondeur de dispositif". While reading, it plays a role of cognitive filter<sup>16</sup>. Thus, the concept of "texte-à-voir" is useful. The "texte-à-voir" is what the Reader, at a given time, considers to be "the text" in a literary sense. It particularly depends on the definition she gives to the notion of "text". The

texte-à-voir is the real indication that the Reader reads in the *transitoire* observable, the text in its semiotic definition. This concept can be applied to every situation of reading, it is not limited to situations where digital systems are being used, but it is only interesting when different points of view, different definitions of literariness are used by different Readers. In other cases it is identical to the classical concept of literary text.

The *texte-à-voir* is a sign which depends on the Reader because the "semiotic decisions" can engage different semiotic systems, different categories of signs. As a true sign, resulting from a decision, the *texte-à-voir* cannot be captured a priori, one can only rebuilt it a posteriori by analyzing the reactions of the Readers. On the contrary, the *transitoire* observable is not more than a physical event, of the sort a camera would capture. While reading, the *transitoire* observable becomes what Klinkenberg calls "stimulus" of the sign: the physical event recognized as containing the signifier. The *texte-à-voir* is acquired by performing transformations on the *transitoire* observable: the reader can neglect some parts of it (for instance, from the algorithmic perspective, the combinatory and automatic generation, the transient moment of the *transitoire* observable that exists in the display of generated texts are not parts of the *texte-à-voir*). She also can unconsciously add imaginary elements that do not exist in the *transitoire* observable, sometimes in regard to a previous reading.

Digital literature(s) seems to show, more than other literatures, the mechanisms and constraints of reading, certainly because it is still in a situation of "emerging literariness" despite its 60 years of existence. The emerging character of literariness is due to a permanent technologic (r)evolution but also changes in the imaginary projected by the society onto technology. Artists are more



than experimenters of use; they shape the technical imaginary, our real housing in technology.

But the Reader can also interpret other parts of the situation that gathers him, the Author, the material devices of the work and other people involved in this situation. I call this ensemble “dispositif”. It is constituted by all components and actors (human or technical, signs and signals, processes and activities...) involved in the relationship between the Reader and the work. The Reader can also consider as parts of the text itself other components besides the *texte-à-voir*. In fact, everybody can have such a point of view. For example, French Authors of the collective *Transitoire Observable*<sup>17</sup> use an “aesthetic of frustration” which believes that reader’s ergodic activity is a sign of the text, and more precisely an icon referring to a real life process that depends on the work. From this point of view, a text is not only a set of media signs as any relationship to media also has literariness. This relationship can be interpreted by the reader herself (this interpretation is called “double reading” because the reader reads her own reading) or by another position of reception that has no relationship with the *texte-à-voir*. I call this new role a meta-reader.

Digital literature(s) is mostly a “literature of the dispositif”. The forms it takes on screen can be similar to previous forms (concrete poetry, traditional written, animation), nonetheless, it always differs through the questions it asks by means of the dispositif. In other words,, a work always has a dimension of installation, even when it is designed to be read on a personal computer.

## 2.2 An example of possible readings



Instead of developing the theoretical model sketched above, I prefer to show different levels of reading by analyzing a work. I will show that the “poetic literary text” defined as the tissue of signs asking or developing a relationship with natural language, does not depend on the work itself. It depends on the a priori of the Reader, her *profondeur de dispositif* can represent different things. In this example, it can be reduced only to classical, static set of words, but including temporal events, parts of the program and even the activity of reading itself. The work I will talk about is Philippe Castellin’s work *La Carte du Tendre*<sup>18</sup> (the Map of the “tender-hearted”). This work only contains 3 words: “Moi” (myself), “Toi” (yourself) and “aimer” (to love).

In describing a screen for analysis purposes, an observer always describes a *texte-à-voir* and never the *transitoire observable* because she only mentions features that have been interpreted and not all the others. We will show in this example how readings can emerge differently from the same *transitoire observable* from various points of view. Many of them do not exclude each other, but are complementary.

When the program runs, a first static text appears on screen:

*“Déplacer la souris (ou laisser faire la machine : cliquer coin inférieur droit)... et voyez ce qui se passe*

*Pour fabriquer un poème visuel « classique » : touche « S »*

*Pour couper/rétablir le son : touche M.*

*Certaines des fonctions de ce programme exigent qu’une imprimante soit connectée à votre ordinateur...”*<sup>19</sup>

In my analysis, I call it “presentation”. It is followed by an interactive animated sound and visual sequence which I will



mode.

#### a. Reading within a non process-oriented generative point of view

The “presentation” comes in the appearance of a notice indicating the nature of the functionalities of the work and the manner of activate them. It resembles a paratext and not a textual component, however it is out of the text. As such, the sentence “To make a “classical” visual poem” turns reading towards a specific model by means of a concrete poetry point of view. The term “classical visual poem” refers<sup>20</sup> to a specific and common form of concrete poetry called “constellation”. It was Eugen Gomringer who invented it at the beginning of concrete poetry in the 1950’s. It uses similar words and letters to vocabulary of the work, but graphical rules of drawing and lines replace linguistic syntax.

This sentence brings the reader to consider that the “poetic sequence” is a generator of printable constellations. This interpretation increases with the mention of the printer. This point of view has many common characteristics with the algorithmic notion of combinatory generation. As in each point of view, it uses properties to define what a “text” is. The text, in this conception, is what I call “an object” (in opposition to “a state”) because it is eternal, static, immaterial and independent of the device (it can be transported from screen to paper). I have previously mentioned its semiotic properties. According to this conception, everything that is incompatible with these properties cannot enter the *texte-à-voir*, they are considered either elements of inscribing functions used by the device to show the generated constellations or an “aesthetic noise”. Notably, neither sound

describe as “poetic sequence”. But let us analyze the “presentation” in the first reading

nor animation enters the *texte-à-voir* (the concept of turning on/ off the sound reinforces functionality). The choice to use interactivity instead of algorithms of synthesis to generate these constellations can be interpreted as a playful technique, resembling the manipulation of Queneau’s book *Cent mille milliards de poèmes*. From this perspective, the reader’s activity is functional and not textual.

According to this conception, the *texte-à-voir* only reduced to the linguistic signs and graphic structures that appear on a screenshot. The reader’s position of reading a collection of constellations is reinforced, even if these constellations are made by a digital. Let us analyze the constellation captured by the screenshot of the work (cf. Appendix). The words “Toi” and “Moi” are repeated many times but the word “AIMER” is shown only once. It is written in red, but the others are in black. The words “Toi” and “Moi” are not randomly distributed: A few are spaced out on the sides, some of them beginning or ending off-screen. Depending on the side, several “Toi” can be found in the neighbourhood of an isolated “Moi” or the contrary. On the upper side, “Toi” is alone at right and several “Moi” are on the right side. On the contrary, there are also words “Toi” and “Moi” overlapping to the point they form an indistinct oblique cloud near the center of the “page”, the window of the poem. On the right bottom side, it is shown the configuration “Toi AIMER Mo”, the word ending off-screen. Lastly, a streak follows some words and the background does not remain blank. Radial streaks starting from words constitute it. In some cases, one can discern letters “T”, “o”, “i” and “M”. One certainly could print only with difficulty this weaved background.

How can this constellation be correlated with the title of the work? Most of the elements of the *carte de Tendre*<sup>21</sup> that Madeleine de Scudéry<sup>22</sup> imagined in the

XVII century are not present in Philippe Castellin's poem by. In Madeleine de Scudéry's novel, *Tendre* is an imaginary country. Using the names of villages and rivers, the map describes routes and traps of the path from a new friendship to précieux love. There is neither river nor village in Castellin's poem, but the weaved background can evoke a landscape and roads that lead to "Toi" or "Moi". This interpretation includes background as a part of the constellation, which mixes an aggregation flow tracks in the style of Carlfriedrich Claus with a use of words and lines that is more usual in concrete poetry. The configurations of words described below can be read as metaphoric graphic conformations of love feeling that passes from the narcissist lonesomeness (the upper set of "Moi") to the look ("Toi" alone) followed by the play of the approach and the seduction (several "Moi" and one "Toi" or the contrary) to arrive to a dynamic close love in which "Toi" and "Moi" become indistinct. There is also the phase of declaration ("Toi AIMER Mo") where off-screen can be interpreted as love that breaks borders. These metaphoric interpretations are, of course, only a possible result of reading; everybody can have others. In this context, the problem is not to explain "The" meaning of this *texte-à-voir* but only the meaning of the *profondeur de dispositif* in use which is efficient for reading from the point of view on which the concept of the text producing this significant is based.



**b. Reading  
within process-  
oriented  
generative points of view**

The previous reading cannot be achieved when the program runs in the purely generated non interactive mode that the reader can activate by clicking on the bottom right corner of the window. In this situation, on the contrary, the reader must focus her interest on the movement of the words. By doing this, she extracts another *texte-à-voir* from the *transitoire observable*. The *profondeur de dispositif* now in use no longer considers the text as an object but it is a transient state of those evolutions that the reader must interpret. Movements of words are now included inside the text and previous constellations are only temporary moments of immobility without particular interest, that depend on the reading activity and can never appear. For instance they are never shown in the automatic mode of running.

This point of view is also feasible in the interactive functioning of the program. It uses the same *profondeur de dispositif*. Even if this conception is the exact opposite of the previous, in fact, it appears to be the complement of it and does not destroy it.

In this reading, the *texte-à-voir* is no longer a collection, but a unique undefined "text", without beginning nor end, where the reader can only grasps a moment. This text is already present in the tradition of concrete poetry because the principle of constellation form remains true: it now integrates time into the graphical syntax in association with a linguistic vocabulary. Melo e Catro was the first to insert temporality into concrete poetry by directly drawing poems on videotapes. Several concrete poets have animated printed works on videotapes.

The reader of Castellin's work notices that a moving center attracts the words



“Toi” and “Moi”. In the automatic mode, this center is closed to the verb “AIMER”. I was unable to read the other moving words because their movement was too fast on my computer. I noticed however cohorts of letters “o”. The words “Toi” and “Moi” are readable only when they are far from the verb. But one can easily notice that they leave a trace which gradually disappears, giving the feeling of a visual displacement of a segment with a tail of comet. The verb is always near a moving and stretching cloud of letters that seems to explode when it stops. This explosion flings some “Toi” and “Moi” toward the sides of the window. One can interpret all these movements as a metaphor of attraction, not between one and another, but between the two and the state of love. It is a wild animal premise regarding a map of “tender”. Of course, other interpretations are possible. The most important fact is that one can interpret the movements themselves with a notion of text that remains compatible with concrete poetry and constellation forms, even if they are dynamic.

In the interactive behaviour, the verb “AIMER” follows autonomous straight trajectories that seem not to comply with a specific law. It is totally disconnected from the movements of “Toi” and “Moi” that are attracted by the cursor of the mouse. In contrast with the automatic mode, “AIMER” is no longer involved in the relationship hold by the other words. This relationship only depends on the reader’s activity. This interactive behaviour enables the understanding of the rules that manage the displacement of the two pronouns: their speed is proportional to that of the mouse. Therefore, the reader can create very different choreographies by adapting the speed and the direction of the displacement. This can create brusque and jerky movements which give sophisticated forms and trajectories and even distinct

areas by playing with jerky accelerations and changing of directions. She can also manage very slow displacements that produce quasi-static maps of tender with isolated terms, curves and clouds. One can interpret all these dynamic pictures by using a process-oriented *profondeur de dispositif* in which love states would no more be represented by positions and graphic lines but by states of movement and moving of groups. One can make states gentle and quietly quasi-static or on the contrary, passionate and fiery jerky; cooperative or conflicting... the dynamic poetic sequence still remains a generator of maps of “tender”<sup>23</sup>.

In this modality of reading, the reader’s activity is still a part of the technical system, not a component of the text. Reading is now regarded as ergodic and not only noematic. It is true that only an efficient and reasoned management of movement can produce interesting movement. Therefore, the interactive process in this conception is also a textual machine which shows some similarities with the automatic generation. The reader’s decisions replace the random function that the used by the generator when choosing one possibility or another. The reader must make “a non trivial effort to traverse the text”<sup>24</sup> that is the precise definition of ergodicity. Her gesture is that of an instrumentalist, it is not at all a reflex, like turning a page.

We have shown that from the meta-author perspective, the Author is giving up a part of her prerogative by transferring the act of inscribing to the program. In animated poetry, this transfer is perceived as a delegation of a part of the author’s intentionality to the program. In pure process-oriented generation, this delegation is perceived as frustrated, partial, and shared with technical intentionality coming from technical actors. In this case, this process-oriented generation is also interactive. By replacing the random function with interactivity, it



transfers a part of the enunciation, of the inscribing of the transitoire observable from the program to the Reader. The transfer of intentionality to the program becomes a shared object of a dialogue that can cancel the role of technical actors. The result no longer depends on the technical context of running, but on the reader's power of analysis, subsequently presented in details.

In automatic running, the reader can consider that the transitoire observable is a generated animation, as she can reduce the *texte-à-voir* to these animations and read nothing else of them. The program is totally transparent, she can overlook the existence of realization algorithms and they are not a textual component. This is no longer possible in the interactive mode. Independent of its meaning in the *texte-à-voir*, the animation is also an index of the possibility domain allocated by the program. Besides constituting parts of the *texte-à-voir*, animations also play a part in *dual signs*. I have previously mentioned this kind of signs which are very common in digital interfaces. Through the running process on the reader's machine, a dual sign gathers from the program the components which are inaccessible to the reader, and elements of the transitoire observable that are inaccessible to the author. The author can only imagine what can happen on the reader's screen, and I have shown that this projection is only a hypothesis, even in absence of generation, due to the lability phenomena. As a result, in the dual sign, the program is the stimulus of the sign for the author, and the signified of this sign is a possible process in the transitoire observable. On the contrary, for the reader, the process, the animation is real. This is the stimulus of the dual sign. For her, this sign is an index of the existence of the program. The signified is the program itself, not as an engineering object, but as a field of parameters (here position and speed of the cursor), each having a

domain of values and a changing dynamics (she must observe that the mouse must be moved slowly in order to manage graphical configurations correctly). She decodes this domain by watching the behaviour of the animation. Ergodic reading requires her to read dual signs, then to read a certain relationship to the program *via* the *texte-à-voir*. Depending on her *profondeur de dispositif*, the reader can consider whether these dual signs are textual components. From the procedural perspective, they are textual component and the "poetic literary text" extends beyond the transitoire observable.

Others modalities can also extend the text beyond the *texte-à-voir*.

### c. Double reading of the work

The reader can also give a bigger importance to the mouse cursor. This sign stays in the same area as the signs of the process-oriented *texte-à-voir*. It has a strong physical relationship with them. Afterwards, the reader can consider it as being included in the *texte-à-voir*. The mouse cursor is nothing other than an index of the reader's activity. Therefore, if she considers sign that must be read to be a sign of the *texte-à-voir*, then she is "reading herself reading" because the mouse is the index of the present activity of reading, not a trace of a previous reading as it is the case of an index in a book. So, the mouse cursor is the index of my activity, the sign that points to my status as reader from the inside of the *texte-à-voir*; the *texte-à-voir* itself designates me as a reader. Reading this sign is actually a double reading, not because interpreting my reading activity would come second in comparison with the reading of other signs (I cannot read them before if I want to act), but because the activity of reading is used two times in a recursive process. In double reading "I read my reading."



If I agree that my reading is no longer an external activity applied to the text but a textual component, therefore the significant of the animation changes. The referents of the pronouns are no longer characters, but the poem itself and me. The poem is “Moi” that says “Toi” to me, unless it is “Moi” (me) who says “Toi” to it, but what does it matter. In all these cases, my activity is a virtual embodiment, an *actual* immersion into the *virtual* world: my action can be stroke, clash, running... and the poem answers by gentle, brutal or jerky motions. This map of “tender” now describes the relationship between the poem and me, in the mode of “I love you a little, a lot, passionately, with extravagance, I don’t.” The Text is now a partner that enunciates similarly to the way I enunciate through my action in a process of feedback. In this *profondeur de dispositif*, my reading activity is a textual component. The mouse cursor is no longer a part of the interface. From this perspective, there is no graphic interface, all components of the *transitoire observable* are components of the *texte-à-voir*. The program is the mediating element that engages the *texte-à-voir* and the reader into a relation. The program is no longer perceived as an author, a model of text or an inscriber of a generated text, whether it is animated or not, but as the space of my connection with the *texte-à-voir*. My understanding of the dual sign makes it possible for me to reach the functional dimension of the program and to communicate with it. The animation is a “subject” simulated by a dual sign, and the cursor is my virtual body inside the *texte-à-voir*, a subject simulated by my activity. This subject is also a dual sign because, technically, the mouse works by sending signals transformed into events by a driver focused on running programs. The *texte-à-voir* is no longer a dialogue of animations, but a dialogue of dual signs.

In this double reading, the work no longer appears as a generator and the “presentation” text now appears to be false lead. In fact, double reading is a trope: previous conceptions organize an isotopy relative to love situations. The cursor appears allotropic, unfamiliar, but strongly correlated to the other signs. Double reading recreates a new isotopy of extended dialogue which determines the allotopy. It works by using a classical deletion-adjunction mechanism<sup>25</sup> that in this case involves the referent of the signs: words no longer refer to a story, but to the current situation of reading, as it is also for the mouse cursor.

#### **d. Interpretation of the work in the aesthetics of frustration**

The collective *Transitoire Observable* uses aesthetics of frustration. Philippe Castellin is a member of this collective and therefore, it is not absurd to examine this work in the light of this aesthetics.

The aesthetics of frustration includes the reader’s activity inside the text much more than double reading does. It considers that every activity, every reaction of the reader is an element of representation, whether the reader wants it or not, whether she perceives it or not. The aesthetics of frustration do not lie in the reader’s choice. It rests on another textual conception, other than double reading, and it does not address the same role in the *dispositif*.

The reader, in fact, is not concerned with the aesthetic of frustration. In opposition with double reading, her activity is a sign for someone else, a meta-reader, not for himself. Somebody watches you read could see the relation with the *transitoire observable*, whether or not you have a process-oriented conception... Perceptible manifestations on screen are analyzable witnesses of your reading activity. She could interpret them as a certain “measure” of the relationship

between you and the text<sup>26</sup>. She could see if you move the mouse without coherence or if you play with it, if you draw interesting shapes or not... This observer, who is real in the framework of a public reading and hypothetical in the context of a private reading at home, does not have a close lookout. She is not a “poet officer” doing some “poetry-surveillance”. This possible perspective on your activity is, according to the aesthetics of frustration, only a symbolic representation. Meta-reading presents nothing other than the symbolic function of reading when one considers that reading itself is a textual component: reading fundamentally connects me to my natural language, in spite of the possible context and the nature of the “text”. This symbolic function defines us as “reading animals” for which reading is a quasi-biologic function. The meta-reader knows how the program manages reading activity, and in consequence, she does not need to monitor the result of your action. Meta-reading interprets *in real time* the activity of reading, just before the reader herself can interpret her activity by looking at its visible consequences. Therefore, even when meta-reading and double-reading aim to have the same objective; they do not use the same mechanism. The reader can never play the role of a meta-reader while reading. These two roles are distinct. Generally, the difference between double reading and meta-reading is clearer in the preliminary stages of reading, when the reader explores the possibilities of interactivity just before activating the double reading interpretation.

From the point of view of the aesthetic of frustration, the text of “presentation” is a “trap for the reader”, a deception that presses the reader to use a classical *profondeur de dispositif*. If the reader “knows” what the textual system is (in this case, a process-oriented generator of concrete poetry or a simple concrete text generator), her

activity really reflects her relationship with natural language in the framework of this textual system. But in fact, for meta-reading, the work is no longer this system, it is only a means used to reveal this relationship, a functional component of the representation, the other being the reader’s activity.

### 3. Far away

I do not consider that one of these four modalities of reception of the work would be better than others. All make a singular experience of reception of the work, build a meaning that makes a connection with natural language play and is, thus, a literary meaning. Each reveals a specific facet of literariness. This meaning only belongs to the receptor, as the reader, double-reader or meta-reader and is never restricted to the indications provided by this essay. I only hope that I have shown that reading a digital literary work cannot be reduced to a digital reading (screen reading) or a media reading (words, pictures, sounds reading). Our habits of reception have been formed by book and cinema cultures and they can hinder a complete reception of these works. Sometimes, it is argued that this literature may be a poor literature. But often people who bring such a critique use unsuitable conceptions: if somebody wants to write a good sonnet, she takes her pen. If somebody uses a program to generate a sonnet, it is because she does not write a sonnet. *Computing a sonnet is not writing a sonnet*. We must never forget this while reading.





## Notes

<sup>1</sup> Sondheim A., "Introduction: *Codework*", *ABR*, vol. 22, n° 6, october 2001.

<sup>2</sup> Bootz Ph., *Les Basiques : La littérature numérique*, Leonardo Olats (collection les basiques), 2006, <http://www.olats.org/livresetudes/basiques/litteraturenumerique/basiquesLN.php> (accessed on 05/12/2010).

<sup>3</sup> I uses capital to mention a person (Reader or Author) and not when I mention her activity, the role she is playing (reader or author).

<sup>4</sup> Look at, for example, [http://collection-eliterature.org/1/works/rosenberg\\_\\_diagrams\\_6\\_4\\_and\\_10.html](http://collection-eliterature.org/1/works/rosenberg__diagrams_6_4_and_10.html) (accessed on 05/12/2010).

<sup>5</sup> Bootz Ph., "Hypertext : solution/ dissolution", english translation by. Cayley, *Cybertext yearbook 2002-2003*, Research Centre for contemporary culture, University of Jyväskylä, Finland, 2003, pp. 56-82.

<sup>6</sup> Valéry P., *Fragments des mémoires d'un poème*. Paris : Grasset, 1938, réed. in *Œuvres*, T.1. Paris : Gallimard (Bibliothèque de la Pléiade), 1975, p. 1467.

<sup>7</sup> Bootz Ph., "Le modèle du 'texte lié'", *ALW-CAHIER*, nr. 23 : *Literatuur en nieuwe media*, Louvain, Belgium, 2002, pp. 12-69.

<sup>8</sup> Several versions of *sintext* (sometimes written syntext) have been published in the journal *alire*, (notably: Cavalheiro A. & Barbosa P., *Sintext*, série 3, n° 14/ 15/ 16, 1997) or on publications on floppy disks. An on-line version can be found at <http://cetic.ufp.pt/sintext.htm> accessed on 04/24/2010.

<sup>9</sup> Lutz Th., "Stochastische Texte", *augenblick* 4, H. 1, S., 1959, p. 3-9. The original German text is given at [http://www.netzliteratur.net/lutz\\_schule.htm](http://www.netzliteratur.net/lutz_schule.htm) (accessed on 04/24/2010). An on-line generator of these texts can be found at [http://auer.netzliteratur.net/0\\_lutz/lutz\\_origina.html](http://auer.netzliteratur.net/0_lutz/lutz_origina.html) (accessed on 04/24/2010) and an

English translation of the original paper stays at [http://www.stuttgarter-schule.de/lutz\\_schule\\_en.htm](http://www.stuttgarter-schule.de/lutz_schule_en.htm) (accessed on 04/24/2010).

<sup>10</sup> The essay Bootz Ph., "der/die leser ; reader/readers", F. Block, C. heibach, K. Wenz (éds), *pOesIs. Asthetik digitaler Poesie, The Aesthetics of Digital Poetry*, Ostfildern: Hatje Cantz Verlag, 2004, pp. 93-121 gives a presentation of these aspects.

<sup>11</sup> Hofstadter D., *Gödel Escher, Bach les Brins d'une Guirlande Eternelle*, Paris : Interédition, 195, p. 680.

<sup>12</sup> <http://www.motorhueso.net/degenerativa/>, accessed on 04/24/2010.

<sup>13</sup> Bootz Ph., "Notes", *alire*2, décembre 1989 : 5 ; réed. in Bootz Philippe (Dir.), *Le Salon de Lecture Électronique*. Villeneuve d'Ascq : MOTS-VOIR, 1995.

<sup>14</sup> In fact the number of what is called *texte-à-voir* below.

<sup>15</sup> For example A Ave, Rio de Janeiro : Igrejinha, 1956. One find on the Internet several pictures of this book. One shows how a Reader manipulates a page (<http://www.youtube.com/watch?v=aUjkOOG9v38>, accessed on 04/24/2010). The kind of manipulation depends on the page.

<sup>16</sup> Bootz Ph., "Profondeur de dispositif et interface visuelle", *Les Cahiers du Circav* n° 12, 2000, pp. 81-101.

<sup>17</sup> The name of the collective *Transitoire Observable* directly comes from the label of this concept. It met several authors from 2003 to 2007. It deal with a processual and programmed conception of digital poetry. <http://transitoireobs.free.fr/to/> accessed on 04/24/2010)

<sup>18</sup> Castellin Ph., *Carte du Tendre, DOC(K)S* collection, 2007, [http://www.sitec.fr/users/-akenatondocks/DOCKS-datas\\_f/collect\\_f/-auteurs\\_f/C\\_f/CASTELLIN\\_f/castellin.html](http://www.sitec.fr/users/-akenatondocks/DOCKS-datas_f/collect_f/-auteurs_f/C_f/CASTELLIN_f/castellin.html) accessed on 12/04/2009

<sup>19</sup> [Move the mouse (or let the machine do: clic right bottom corner) and see what appends.





To make a “classical” visual poem: key “S”  
To turn off/on sound: key “M”.  
Some functionalities of this program need you connect a printer to your computer...] (translation Ph. Bootz).

<sup>20</sup> Philippe Castellin confirmed my interpretation of this term. He added that in his mind, this expression also refers to the idea that the digital in a certain sense “becomes outdated” some daring of classical visual poetry. This idea of an “achievement” of analogical forms by the digital is an interesting point we don’t have time to discuss here.

<sup>21</sup> de Scudéry M. et Denis D., *Clélie, Histoire romaine*, Paris : Gallimard, 2006.

<sup>22</sup> The title of Castellin’s poem is “carte du tendre.” I suggest the English translation Map of the “tender” or Map of the “tender-hearted” because the French title uses an adjective as a name. The title of Scudéry’s novel is “carte de tendre” in which “tendre” is used as the name of a country.

<sup>23</sup> Commenting this paper, Philippe Castellin said this remark that explains his own process-oriented reading: “Scudery’s *Carte*

*de Tendre* is static. It describes a path that a set of cultural codes guarantees. Indeed, here, paths are repulsion and attraction, from many to one or from one to many and I had thought to give this title to the work : “many to one/ one to many”. According to the opposition print/dynamic, that is in the work an opposition “map” and “trip” or the opposition plus or minus stable relations/ occasional meeting. It is love at the time of Brownian motion, it is the relativity of Newtonian relations...”

<sup>24</sup> Aarseth E., *Cybertext : perspectives on ergodic literature*, Baltimore : The Johns Hopkins University Press, 1997, p. 1

<sup>25</sup> I use the approach the groupe mu has developed to explain rhetorical mechanisms. Klinkenberg J.M., *Précis de sémiotique générale*, Paris: Seuil, 2000

<sup>26</sup> In many works meta-reading shows the relationships the reader has with natural language within the work as it is here developed, but sometimes reading can also be used as an iconic sign referring to a living situation.

Appendix

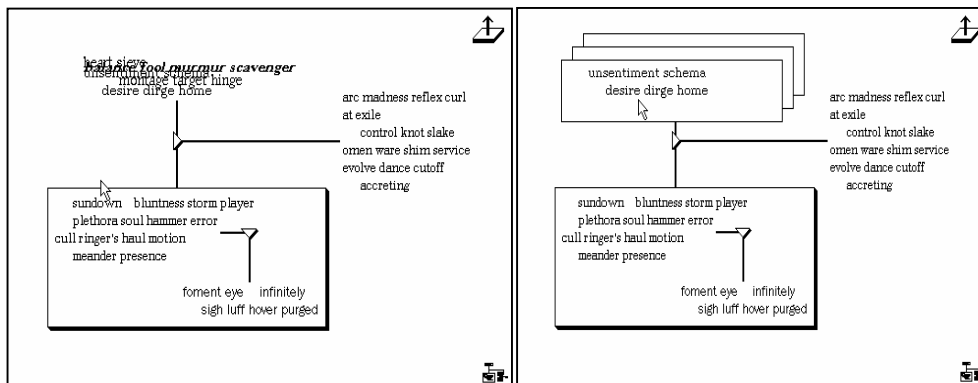


Figure 1: Screenshots of Rosenberg's Diagrams *Series 5#1*, the visible and readable state of a structure [Rosenberg J., *Diagrams Series*, CDROM partition MAC, 1997]

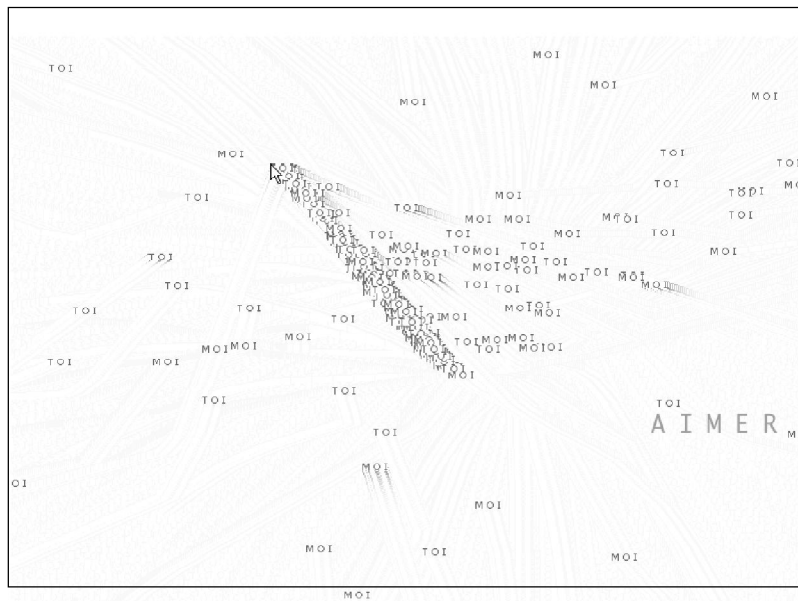


Figure 2: Screenshot of *La Carte du tendre*