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**We Have Not Understood**  
**Descartes**

Andras Vallias

The author describes his involvement with digital media and the origins of his conception of the “diagrammatic” poem; he reflects on what he considers to be a poem in tune with today’s computerized society.

Continuous mutation: this is perhaps the only constant distinguishing mark of digital media. The growing speed with which hardware and software components change would seem to condemn the creators who venture into this new territory to the production of ephemera, to a permanent process of making and remaking, of endless "work in progress." The general picture is one of instability — of vertigo — and it is a source of stimulation and frustration.

I entered the computer age in 1988, motivated largely by the compelling essays of the philosopher *Vilém Flusser*<sup>1</sup>; financially I was able to do so thanks to the economic stability of Germany, where I had settled in the preceding year. Galloping inflation and import restrictions would have made this step extremely difficult in Brazil, my country of origin, at any time before the early '90s.

Basically, my poetic work at the time employed the resources for desktop publishing; these were substitutes for the techniques which I had previously used for the composition of visual poems: silk-screen printing, collage, photocopying, instant transfer lettering, etc. Although I was fascinated by the computer, by the breadth and flexibility of this new tool for graphics, the fact that I had perceived no significant alteration in my own poetic procedures drew me into a creative crisis which lasted from 1988 until 1990.

I put this period of silence to good use, and started research into three-dimensional space; it was there that the potential of the computer seemed to make itself most clearly evident. I exchanged the simulacrum of blank page and palette of colors — available to me through desktop publishing programs — for the black infinity and the austere and complex interface of computer-aided design; the AutoCad<sup>2</sup> program became my Ariadne and the coordinates xyz my magic ball of thread. The open architecture of AutoCad also led me on to my first stammering efforts in programming (AutoLisp), an experience which was to prove useful after 1994, when I started to work with multimedia authoring systems.

1 Vilém Flusser was born in Prague in 1920. He studied philosophy at the Carl's University and emigrated to Brazil in 1940, where he continued his studies at the University of São Paulo. Since 1963 he was professor of philosophy of communication at the Faculty of Communication and Arts. In 1972 he moved to Europe, where he taught at numerous universities. He died in 1991. Among his most important writings are: "Ins Universum der technischen Bilder," European Photography, Göttingen 1985; "Die Schrift," Immatrix Publications, Göttingen 1987; "Vampyrotheus Infernalis" (with Louis Bec), Immatrix Publications, Göttingen 1987.

2 Computer-aided design software made by Autodesk.

My initial impetus towards the construction of three-dimensional letters soon wore off. I could see no possibility of organic integration between the third dimension and the alphabetic code; it seemed to me that such a proceeding would lead to an iconization which, fundamentally, differed very little from the typographic experiments found in the visual poetry of the '70s and '80s. Instead I sought to integrate the third dimension into the syntax of the poem.

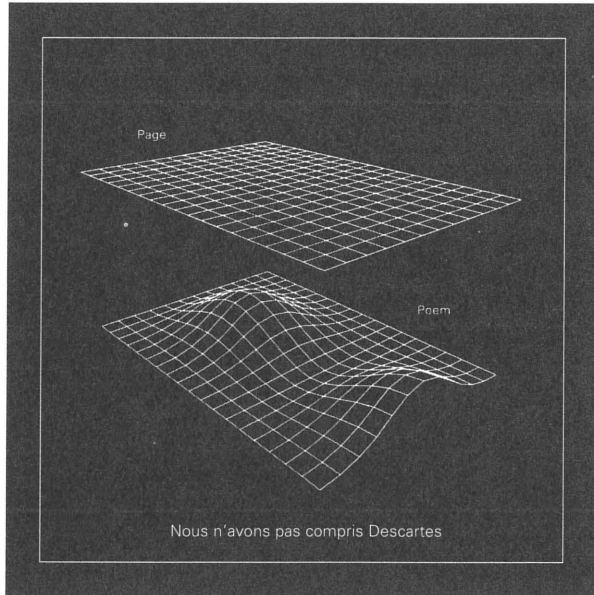
My creative crisis resolved itself in 1990, with the making of a poem which has become a landmark in my poetic production: "*Nous n'avons pas compris Descartes*." The title is an excerpt from a text by Mallarmé dating from 1869, his "*Notes*,"<sup>3</sup> which I came upon just when I was putting the finishing touches to the poem. These notes were an outline for a treatise on linguistics which Mallarmé unfortunately never got round to writing. The fifth paragraph in particular caught my attention: "*Nous n'avons pas compris Descartes, l'étranger s'est emparé de lui: mais il a suscité les mathématiciens français*." (We have not understood Descartes, it's the foreigners who have laid hold of him; but he has aroused French mathematicians).

I confess that I didn't spend much time on attempts to interpret the fascinating web of Hegelian concepts to be found in the "*Notes*"; I was quite satisfied with the luminous insight brought to me by the text. I perceived what a mighty feat it was on Descartes' part to have created an interface between the discrete universe of algebra and the continuous world of geometry, thus establishing a basis for what, in the end, was to be the computational graphics which I was using myself.

The poem "*Nous n'avons pas compris Descartes*," made with the resources of computer-aided design, takes as theme the relationship between page and poem; in doing so it transcends this same relationship and makes three-dimensional space the new field of meaning for the poem — its new "environment." The

3 Mallarmé, Stéphane. 1945. *Œuvres Complètes*. Paris: Bibliothèque de la Pléiade, Éditions Gallimard, 851-856.

sinusoidal form of this "poem" may perhaps be seen as a reference to Descartes' analytical geometry; yet in the end it is arbitrary in its nature. It points above all to a virtual interrelationship of codes, a programmatic gesture which bestows on this meta-poem the character of a manifesto.

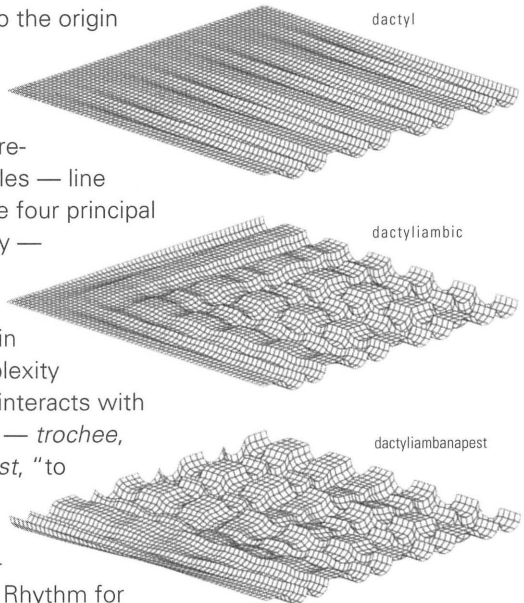


The fundamentals of its making arise from reflection on a series of visual and ideographic codes which begin to take shape during the Renaissance and the Baroque, and which continue with increasing intensity as they accompany the development of Western science and technology in all its fields and forms: from classical perspective, still centered upon mimesis of nature, to the anamorphoses of mannerism, architectural design, isometric perspective, cartography, graphs, charts, tables and statistics. All those codes, that is to say, of technical and scientific visualization which attempt to go beyond the limits imposed by the linear nature of our society's hegemonic code of communication — the written text.

The common denominator of these codes is their hybrid nature: graphic and numerical elements, color and text, to a greater or lesser degree add up to a network of reciprocities which will provide the field of meaning for the whole. It is this dynamic and syncretic complex which I call by the name of diagram — from the Greek *diá*, “through” + *graphein*, “to write.”

Diagrams, in accordance with the growing complexity and volume of information in our times, find in the computer an ideal stage for development and dissemination. Digital technology provides a basis for increasingly rapid and wide-ranging inter-relationships of codes, since the computer itself transforms text, sound, form, color and movement into digits. Starting with “Nous n’avons pas compris Descartes,” I have come to see the poem as an “Open Diagram,” operating under the sign of diversity. Poetry is set free from the domain of the text — logocentrism — and recovers its primordial meaning of “creation,” from the Greek *poiesis*, “making.”

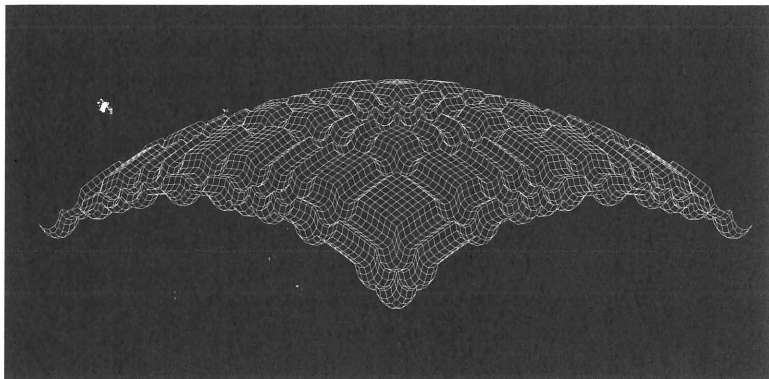
My work “The Verse” (1991), tries to cast light on this conception of poetry, going back to the origin of the word “verse” — from Latin *versus*, the furrow produced by a plough. The work is composed of surfaces built up on graphic representations of long and short syllables — line and semicircle — and following the four principal metric schemes known to antiquity — trochee, iamb, dactyl and anapest. These schemes are combined so as to give rise to surfaces (fifteen in all) with different degrees of complexity and to produce an iconicity which interacts with the etymology of the Greek terms — *trochee*, “to run”; *iamb*, “to throw”; *anapest*, “to strike”; *dactyl*, “finger.” For epigraph I took an observation by the poet Gerard Manley Hopkins: “Remark also that is natural in Sprung Rhythm for the lines to be roved over...”



Images of the poem “The Verse”

The same graphic procedure is used in "PRTHVI," a poem written in 1991, to compose a three-dimensional surface on the basis of a type of strophe found in Indian epic poetry; this is made up of four lines, each with seventeen syllables.

**PRTHVĪ** (Ind. = Earth) *Indian epical verse in four-lines formation, each line having 17 syllables:* ~~~~~~



In 1992 I began to include movement in my work, with a series of animations, made up from mathematical equations on surfaces. This work appeared as "Surfaces" in 1993, at the event "Linzer Notate," organized by poet Christian Steinbacher in the Austrian city of Linz. This phase of experiment with movement culminates with the video "Falésia" (literally "cliff"), dating from 1994, in which an element of sound also appears; "Falésia" is a journey made by way of three-dimensional visualization of a Sapphic strophe.

At the end of 1994 I came back to Brazil. The poem "IO" (1995) is my first experiment with interactivity.<sup>4</sup> The reader sets the poem off by making the spherical object move in one of four directions — up, down, left, right. At a given moment a transformation takes place: the object's texture changes, from opaque to transparent, to show the cylindrical penetration within the

4 It is constructed and animated with Strata StudioPro software and integrated with Macromedia Director.

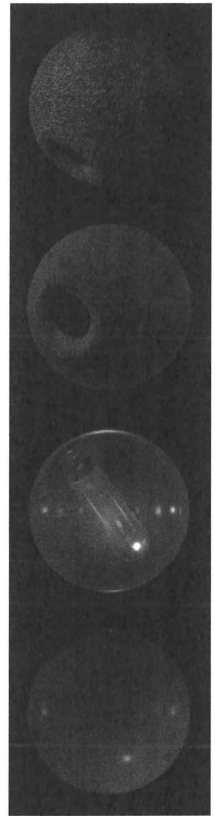
sphere. This is accompanied by a sound background: the vocalization of “o” and “i,” in reference to the opaque and transparent worlds respectively, and the vocalization of the diphthongs “io” and “oi” at the change from one texture to another. At certain moments, chosen at random by the program, quotations and commentaries appear in relationship to the various meanings of the word “IO” — Italian for “I,” the sign for Input/Output, numerals “1” and “0” — and excerpts from Hölderlin’s translation of Sophocles’ “Antigone,” in which “io” appears as a phonetic transposition of an ancient Greek interjection indicating pain and lamentation.

## Conclusion

Intelligent use of the increasingly sophisticated resources of multimedia for the creation of poetic works is an irresistible challenge. The computer is a stage for the integration of various different codes — visual, acoustic, numerical, etc. It seems to include within itself and to transcend technologically a whole series of poetic manifestations which started out with the avant-garde movements of the twentieth century, such as visual poetry, phonetic poetry, performance poetry, etc.

Interactivity allows a work to be modified according to internal criteria (those defined in the programming language) and also according to the repertoire and interests of the reader; it opens up a field of unlimited dimensions for poetic research, and provokes an irreversible subversion of the traditional relationship between author, work and reader.

I believe that the concept of poem as an open diagram, when it incorporates the notions of plurality, interrelationship and reciprocity of codes, not only guarantees the viability of poetry in a society subject to constant technological revolution, but places it in a privileged position — that of the “universal progressive poetry” of Schlegel and the “*Dichtung + condensare*” of Pound. That is to say, *Poiésis*.



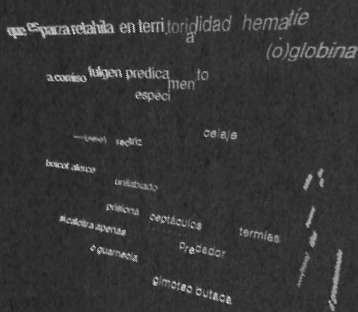
Images from the interactive poem “IO”

Ladislao Pablo Györi holds a degree in Electronic Engineering from the National Technological University of Buenos Aires, Argentina. He began his literary career in 1983 and his experimentation with computers in 1984. His book of poetry *Estiajes* (1988) was published in 1994 in Buenos Aires. In this book he used computers, information theory and probability calculus, in order to change the usual syntax and to postulate non-linearity as a compositional element. In 1994 he co-founded in Buenos Aires an interdisciplinary group called TEVAT. He is currently working on the production of virtual three-dimensional constructions and what he calls virtual poetry — three-dimensional visual poems with high entropy and visual content.

# Virtual Poetry

Ladislao Pablo Györi

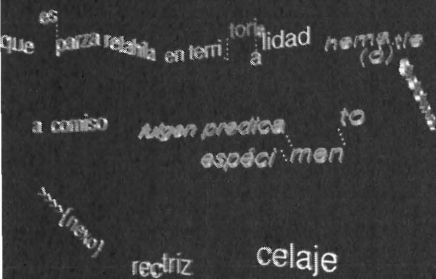
In this manifesto the author proposes a new kind of poetry — virtual poetry — that exists only in electronic space and computer networks. This new poetry is interactive, animated, hyper-linked and navigational.



VP12B - Convergence of three areas and start of movement.

Cyberspace, digital processing, telepresence, multimedia, Internet, virtual reality, computer animation, artificial reality, robotics, expert systems, nanotechnology, electronic photography, fiber optics, three-dimensional sound, fractal geometry, non-linear dynamics, chaos and complexity, artificial life, fuzzy logic, neural networks, genetic programming...and... what about poetry?:  
**VIRTUAL POETRY!**

Virtual poetry results from a basic need to impel a new kind of creation related to facts whose emergence — for their morphological and/or structural characteristics — would be improbable in the natural context. This new creation requires a rational and constructive human action, as well as the surpassing of redundant events which keep poetic production in previously absorbed instances and away from new aesthetic functions.



VP12B- Area A separation and structural movement.

Because of the essential conjunction between human creative work and the utilization of electronic media, which have enormously widened the fields of poetry and art, all the creative processes will progress into the virtual space offered by the machine. In it, and with the aid of adequate software, signs can reach multiple proportions by means of the application of functions which go as far as to intrinsically modify their usual properties, to generate even unexpected systems due to their radical configuration and behavior.

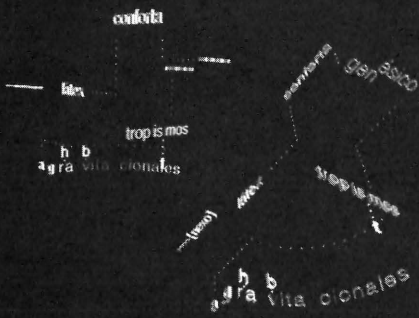
The application of computers has facilitated not only the access to a custom-definable logical or virtual space (which ignores the coordinates defined in a gravitational one, having no privileged direction or immovable constraints), but also to a large series of algorithmic operations. Fundamentally, it has inaugurated an essentially different field, for which it is necessary to produce new languages which will give birth to a new aesthetics. Moreover, in connection with virtual reality, and its extraordinary scope, this proposal would avoid the simple transposition of already barren situations supported by old codes of other non-electronic systems.

The digital world (computerized, therefore synthetic), that deeply differs from physical, real or analogical facts, exceeds their limitations and the usual categories of experience, forges its mastery in the mathematic or numeric character of the elements that are contained in it and in the possibility to openly establish correlations between virtual space, objects and subjects, as no previous medium has allowed.

Faced with this state of affairs, we start from the innovations developed by the latest constructivist vanguards and from a philosophical and epistemological context in accordance with the present advance of the sciences. In this context, we must respond



*VP12B- Area A clonation and transformation.*



VP12B- Area C separation and transformation (two views).

to the imperious need to design the brand-new theoretic profiles of this revolutionary technology and the events technically consistent with an n-dimensional virtual space — that is to say — able to be created and treated in that space.

Thus, VIRTUAL POEMS or VPOEMS

are interactive digital entities, capable of:

- 1) taking part in or being generated within a virtual world (here called “Virtual Poetry Domain” or VPD) through software or routines (for the development of virtual reality applications and real-time explorations) which confer diverse possibilities for manipulation, navigation, behavior and alternative properties (in the presence of environmental constraints and interactions), such as evolution, sound emission, animated morphing, etc.;
- 2) being experienced by means of partially or fully immersive interface devices (vpoems support “walkthroughs” and “flybys”);
- 3) assuming an aesthetic dimension (in accordance with the semiotic and entropic concept of information), not reducing themselves to a simple phenomenon of communication (like a pure data stream); and
- 4) being defined as hypertext structures (circulation of open and multiple digital information) but principally producing hyperdiscourses (with a strong semantic non-linearity).

The VPD is a substitutive field for the traditional printed page.

The printed page only establishes a superficial and static contact;

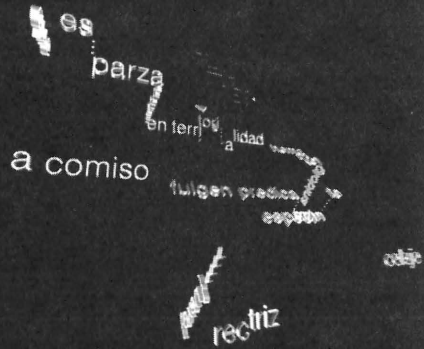
it is very restricted in relation to the requirements of large versatility and global artificiality that also dominate

contemporary poetic production,  
and which will dominate those of the future.  
Virtual Poetry Domains also exceed all the  
more or less established techniques  
of channeling of poetic messages, because  
they break in a definitive way  
with the first support that produces and maintains  
them: real physical space.

Vpoems and the VPD have a logical existence.  
They bear no resemblance to anything,  
becoming entities with an actuating power  
(related to the quantity of resources at work)  
as has never been seen  
or experimented with before.

The opening of the Virtual Poetry Domains  
to computer networks will facilitate the realization  
of virtual "teleportations" of subjects  
to VP-based computers anywhere in the world.  
Viewers will obtain an absolutely new remote  
experience of simulated and exploratory  
"reading." This is still difficult to value today in its  
most extraordinary dimension and possibilities.

Virtual Poetry, as expounded here,  
is not reduced to the surpassing of  
certain linguistic codes, the adding of a topic,  
some formal conquests,  
another segmentation of a continuum,  
the utilization of an unusual support —  
however important these aspects may be.  
Virtual Poetry forces the initiation  
of a new era in the general poetic creation,  
freeing the human imagination  
from any real constraint,  
and giving it a vast and virgin field.  
In this new field, everything conceivable  
(as a construct) can exist.  
In the future,  
human-machine experience  
(as a mixed or cybernetic system) will  
rise up to levels higher than all those already known.



*VP12B - Area A instance  
before linking with VP13  
through "TORIO".*



*VP11's opening through  
successive linking from  
VP13B.*

John Cayley is a poet, literary translator and the founding editor of the Wellsweep Press, which, since 1988, has specialized in the publication of literary translation from Chinese. His background in humanities computing dates from 1978 when he undertook post-graduate work on linguistic analysis of classical Chinese style. His poetry and translations have appeared in numerous magazines, with major contributions to *Looking Out From Death: the new Chinese poetry of Duoduo* (London: Bloomsbury, 1989) and Gu Cheng, *Selected Poems: an authorized translation* (Hong Kong: Renditions, 1990). *Ink Bamboo*, a collection of poetry and translations, is forthcoming from Agenda Editions, London.

## **Beyond Codexspace:** John Cayley