

# Computer Art in Portugal? A Short History of Related Exhibitions and Art Criticism in the 1970s<sup>1</sup>

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The purpose of this paper is to answer the following question: when, in Portugal, did information technologies, and in particular computers, first make their appearance in art practice and art criticism? Its aim is to contribute to the range of international studies on the introduction of computers as a tool in the art environment, with a focus on the Portuguese art scene of the 1970s and 1980s.

I briefly point out the different scenarios in Portugal and some other countries and argue that the lack of initiative in bringing research institutions and artists' intentions together in a common platform, as well as the political events that took place in Portugal in 1974 (the end of the dictatorial regime), were among the reasons why Portuguese artists were slow to display an interest in using information technology, which only really began to play a significant role from the mid-1980s onwards, with the appearance of personal computing.

## Computer Art – A Very Brief Historical Appreciation

The expression “computer art”, as used within the context of the visual arts, first made its appearance in the January 1963 issue of the magazine *Computers and Automation*,<sup>2</sup> when its editor, Edmund Berkeley, decided to put on its cover a representation of a computer-produced graphic with the caption ‘A Portrait by a Computer as a Young Artist’ (Fig. 1), referring to it, in the editorial, with the title ‘Front Cover: Computer Art’. It was this image that led the editor, in a short note entitled ‘Computer Art Contest’, to launch an annual contest in the following month with the purpose of ‘[...] exploring this new artistic domain’ (Berkeley, 1963, p. 21), although the winners in the first couple of years of this contest did not have an aesthetic intent in the first place.

1 This article is a condensed and updated version of the author's PhD thesis (available in Portuguese only). This document can be consulted at: <https://run.unl.pt/handle/10362/19032> (Accessed: 19 March 2021). The PhD abstract (English) was accepted and published by the *Leonardo Abstracts Service*: <https://collections.pomona.edu/labs/record/?pdb=3689> (Accessed: 20 March 2021).

2 The issues of this magazine are available online at: [https://archive.org/details/bitsavers\\_computersAndAutomation](https://archive.org/details/bitsavers_computersAndAutomation) (Accessed: 13 March 2021).

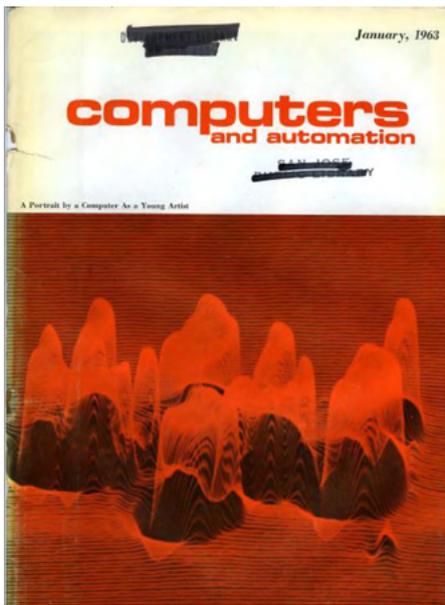


Fig. 1 → *Computers and Automation*, January 1963. Text at the top of the image: 'A Portrait by a Computer as a Young Artist'.

In fact, this intention was only evident in the 1965 competition, won by Michael Noll, an engineer at Bell Telephone Laboratories, who had been interested in graphic production outside his professional field for several years. The work presented, *Computer Composition with Lines* (1964) (Fig. 2), was intentionally inspired by Piet Mondrian's *Composition in line, second state* (1916-1917) (Fig. 3). In the same year, Michael Noll, together with co-worker and scientist Béla Julesz, was invited to make an exhibition at an art gallery in New York. The exhibition *Computer-Generated Pictures* took place at the Howard Wise Gallery (6-24 April 1965), a venue that, in the 1960s, was recognised for supporting new media and ground-breaking displays, such as *On the Move: An Exhibition of Kinetic Sculpture* (1964), *Computer-Generated Pictures* (1965), *Light in Orbit* (1967) and *TV as a Creative Medium* (1969).

Also in 1965, and before the Howard Gallery show, George Nees had presented his graphics at the Studiengalerie der Technische Hochschule of Stuttgart (4-19 February), later followed by the exhibition *Computer-Graphik* with his colleague, the mathematician Frieder Nake, at the bookshop of the Wendelin Niedlich Gallery (5-26 November).

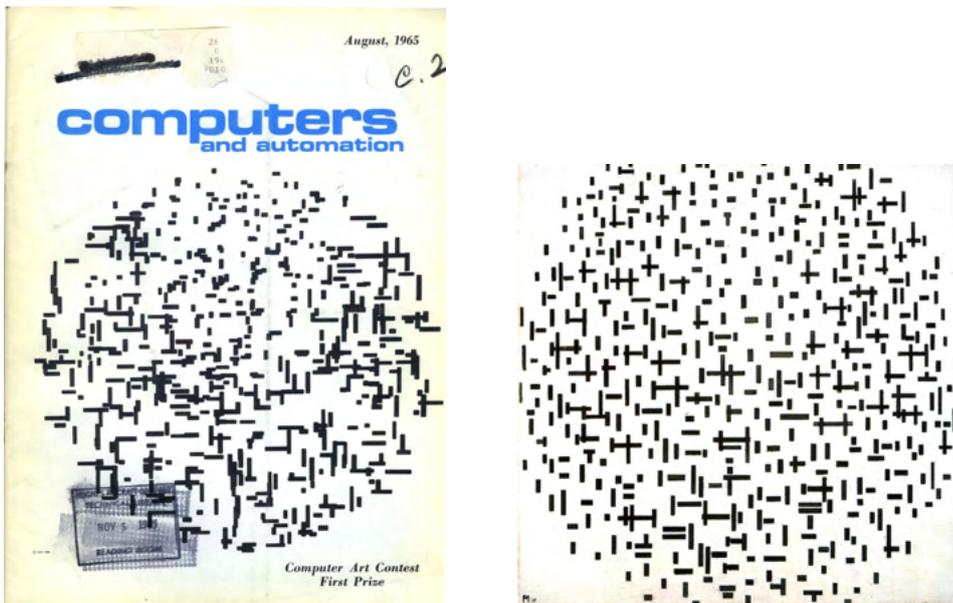


Fig. 2 → Michael Noll, *Computer Composition with Lines*, 1964. Front cover of *Computers and Automation*, August 1965.

Fig. 3 → Piet Mondrian, *Composition in line, second state*, 1916-1917. © Collection Kröller-Müller Museum, Otterlo, The Netherlands. Courtesy of the museum.

Those three exhibitions in 1965 (one in New York and two in Stuttgart) proved to be seminal for the development of "computer art" and would later be followed by others in different geographies, of which *Cybernetic Serendipity* (1968), held at the Institute of Contemporary Art (ICA) in London, was paradigmatic both in this and other related fields.

## The 1960s

While, in the 1960s, the information technologies led many artists to become interested in the exploration of these new media in their artistic practices, there was no sign in Portugal that there was any particular interest in such combinations. Nonetheless, it was not due to a lack of equipment in Portugal that this possibility did not materialise. But certainly, the high cost of these systems and the specialist skills needed to operate and maintain them made these technologies unattractive for artists with no technical background and whose essential training had been in painting, sculpture, or drawing. However, the scenario was not vastly different in other geographies, and it was precisely the use of these same systems, in both research and teaching institutions, that served the purposes of some artists, most of whom joined forces with professionals from the academic world in order to carry out their projects.

In the 1960s, in Spain, the Computing Centre of the University of Madrid (CCUM), created the *Seminario de Generación Automática de Formas Plásticas* (1968-1973), helping to establish contact between artists and professionals from different technical areas and resulting in conferences, publications and exhibitions that were attended by national and international artists and lecturers working in these fields (Castaños Alés, 2000). In Argentina, when the art critic and curator, Jorge Glusberg, organised the exhibition *Arte y Cibernética* at the Bonino Gallery (1969) with a group of national artists, the works on display were produced by the computer systems from the Centro de Cálculo de la Escuela Técnica ORT, in Buenos Aires. In Brazil, in 1968, when the artist Waldemar Cordeiro, one of the main driving forces behind the development of Brazilian concrete art, decided to pursue artistic creation using the computer, he carried out his work by using a system from the Physics Department of the University of São Paulo with the technical assistance of Giorgio Moscati, a nuclear physicist at the institution. In England, the new model and organisation of teaching schools in the 1960s, was decisive in bringing together artists and technicians/engineers and making them familiar with the new computer technologies. In Zagreb, the exhibitions and symposia that took place between 1961 and 1978, generally referred to as the *New Tendencies*, played a decisive role throughout their five editions, most notably the fourth one (1968-69) with the colloquium *Computers and Visual Research*, which set the theme for an exhibition with the same title and enjoyed the participation of 41 artists from 11 countries (Rosen, 2011, p. 361).

Furthermore, in Portugal, there is no evidence that any artist used computers in their work in the 1960s, nor that any engineers or technicians made or exhibited computer-produced graphics with an aesthetic purpose. Nevertheless, Ernesto de Melo e Castro, an experimental poet and artist, was interested in the new technologies, considering that, after visiting the emblematic *Cybernetic Serendipity* exhibition (1968), in London, he wrote a chronicle entitled – ‘Serendipitia Cibernética’, published in the Portuguese newspaper *Diário de Lisboa* on 5 December 1968 (Castro, 1977, pp. 149-155). In his article, he envisaged the new possibilities that the use of computers might bring, noting that:

The drawings made by computers and shown in London at the ICA are no better than men can do by hand. They are simply different [...]. The concrete texts and poems written by computers are no better than the texts of the poets [...]. But the field opened up by the computer is larger than the one that is opened up by the pencil of the artist or poet. And it is this greater field of probabilities, which are becoming possibilities, that it is unequivocally interesting to propose [...]. (Castro, 1977, p. 155)<sup>3</sup>

Melo e Castro's interest in those subjects, and particularly in cybernetics, had already been addressed previously in the article 'Românticos/Clássicos/Cibernéticos' published in 1967 (Castro, 1977, pp. 123-130) and had then reappeared in several other texts after the ICA exhibition, namely 'Ken Cox, Um Ciberneta' (1969), 'Cômicos, Linguística, Computadores, Poetas' (1970) and 'A Máquina – A Mão' (1970) (republished in Castro, 1977).

Later, in the 1980s, and as mentioned further on in this text, Melo e Castro would again gain prominence in the Portuguese art scene for the attention that he paid to information technologies in his publications and exhibitions.

## The 1970s

In the 1970s, there was still no news in Portugal of any significant activity in the use of computers as a work tool in the visual arts. However, the national press began to publish news from abroad relating to these themes. In February 1970, the article 'Arte Electrónica', in the magazine *Vida Mundial* (p. 53), mentions the exhibition *Computerkunst: On the Eve of Tomorrow*, which had been held in the previous year at the Kubus Gallery in Hanover, and which, according to the article, presented a set of 217 works, thus revealing the dimension and importance of the event.

The following year, an article by Douglas Davis, 'O Artista e o Computador', also published by *Vida Mundial* (Davis, 1971), disclosed the work of the American artist Charles Csuri, focusing on *Hummingbird* (1967), a computer-generated animation, and *Sine Curve Man* (1967), also mentioning Bell Telephone Laboratories researchers Michael Noll, Kenneth Knowlton and Leon Harmon, and their exploratory work from the mid-1960s.

3 All the quotations in English were translated from the original Portuguese texts by the author.

In 1973, *Flama* magazine published the article 'Estética da Informação ou a Arte Computada', by Rogério Carapinha, in which he used the curious expression 'Aesthetics of Information', referring to a 'New science [...], a branch of cybernetics that, in turn, runs parallel to the natural sciences [...] a new domain of scientific research' (Carapinha, 1973, p. 102), an area of research that was being explored, at the time, by the German philosopher and academic Max Bense.<sup>4</sup> Other uses of the computer, in addition to its utilitarian and scientific function, were recognised right at the beginning of the article by Carapinha, when he pointed out that: 'Although the power of computers continues to be based on algorithms, they are still developing and constantly embracing new domains. The latest achievement is called infoarte'<sup>5</sup> (Carapinha, 1973, p. 101). It is also interesting to note what the journalist had to say, at that time, about the Portuguese panorama in the field of the arts:

Portugal, where some companies continue to process data using pencils and erasers, is still not a country of computers. We already know about them, and many private and state-owned companies have them at their service, but we are not yet familiar with them, we still do not treat them as an everyday object. Therefore, it is not surprising that the *making* of computer pictures is as yet unknown to us. (Carapinha, 1973, pp. 101-102)

It was also during 1973 that, for the first time in Portugal, the expression "computer art" first appeared in the prestigious arts magazine, *Colóquio*, in an article by Ernesto de Sousa (1921-1988) about the exhibition *Tendencies 5*, which he had visited in Zagreb while attending the 25th General Assembly and Congress of AICA – the International Association of Art Critics. In this article, he observed that:

From this latest network of trends, there is a whole bundle of "technological arts" that should be mentioned: constructivism, kineticism, and now the so-called "computer art".

Yugoslavia has paid particular attention to this sector, with an important role being performed by the *New Tendencies* exhibitions in Zagreb, the first of which, in 1961, played a pioneering role on the European artistic scene. (Sousa, 1973, p. 58)

4 Max Bense was instrumental in the holding of the first two *Computer Art* exhibitions in Germany and was recognised, by the curator Jasia Reichardt, as the mentor of the *Cybernetic Serendipity* (1968) exhibition in London (Reichardt, 1968, p. 5).

5 The word "infoarte" appeared in the Portuguese press for the first time in this article (1973), an expression that was later used by E. M. de Melo e Castro as the title for the exhibition *Infoarte*, at Galeria Barata, in 1988.

## The German Institute in Lisbon and *The Art of the Computer* exhibition

Unexpectedly, between February and March 1974, Lisbon was the venue chosen to host the first exhibition in Portugal of computer-mediated art, thanks to an itinerant programme organised by the Goethe-Institut of Munich. This exhibition included a series of lectures, the first by Salette Tavares, *Uma Poética do Computador* [A Computer Poetics]. Also in February, art critic Egídio Álvaro presented *Manfred Mohr – A Arte do Ordenador: Uma Comparação com Outras Vanguardas* [Manfred Mohr – Art of the Computer: A Comparison with Other Vanguardas], and the cycle ended with a lecture by the German pioneer in computer art George Nees, entitled *Gravuras do Computador* [Computer Drawings].

This exhibition had some repercussions within the circle of art critics in Portugal, being considered by José-Augusto França as the best foreign exhibition in the 1973-1974 period, in his review in the *Colóquio* arts magazine (França, 1974, pp. 38-44). Moreover, José Luís Porfírio mentioned this exhibition in his article 'A Propósito da "Arte do Computador"', published in the magazine *Arquitectura*, although he preferred to make '[...] a very personal point [...] about this type of artistic manifestation' (Porfírio, 1974, p. 42) rather than to write an informed and in-depth critique of the exhibition, stating that, in those graphic works, the technical aspect clearly overlapped with '[...] an aesthetic proposal that did not exist' (Porfírio, 1974, p. 43). While there is some evidence to support this assessment about certain computer-graphic works, the truth is that the generalisation advanced by the art critic, namely that '[...] the computer has not yet given us relevant graphic works, from the point of view of those who are concerned with the visual arts' (Porfírio, 1974, p. 43), was symptomatic of a very summary interest regarding the number of proposals and artists who, at that time, were already working in this field.

This exhibition, which took place just before the political revolution of 25 April 1974, raised no echoes amongst Portuguese artists, whose concerns and experiments, in the following years, had more to do with social issues, not involving the use of computers but only, and to a lesser extent, the use of video, as a new artistic medium.

## The 1980s

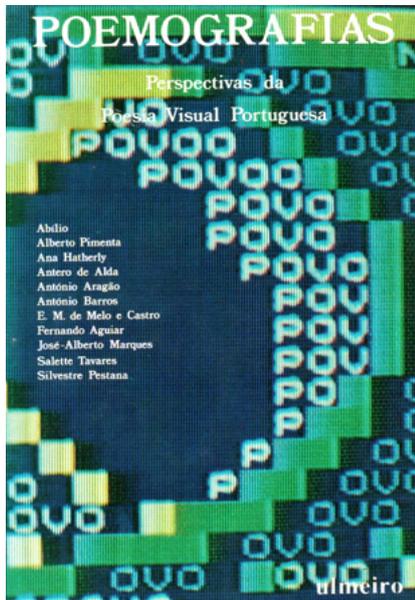


Fig. 4 → Fernando Aguiar and Silvestre Pestana (org.), *Poemografias*, 1985.

It was only in the 1980s that the computer began to be noticed as a possible tool for artistic work in Portugal. Firstly, because the personal computer revolution had finally made it easier to access these devices without depending on institutions, and secondly because they had now reached the Portuguese consumer at affordable prices, as was the case, for example, with the British Sinclair ZX80, Sinclair ZX81 and ZX Spectrum. It was precisely with the use of these computers that, between 1981 and 1983, Silvestre Pestana made his three *Computer Poems*,<sup>6</sup> which are documented in his publication *Poemografia* (Aguiar and Pestana, 1985, pp. 214-216), illustrated on the front and back covers with one of these poems – *Computer Poetry to: Julian Beck* – created in 1983 (Fig. 4).

It is noteworthy that the dynamic nature of these works, which were gradually revealed on the computer's monitor, reveals a different visual regime to the static printing of text on paper, whether it had been created by the computer or by the poet. In this regard, it is important to mention a short text by Silvestre Pestana – 'Apontamentos de: Literatura Informacional ou a Poética dos Anos 80', included in *Poemografias* – which states that 'The audience for which "video-computer poetry" is intended is no longer the traditional

<sup>6</sup> *Computer Poetry To: E. Melo e Castro* (1981), *Computer Poetry To: Henry Chopin* (s.d.), *Computer Poetry To: Julian Beck* (1983). The first two used the Sinclair ZX81, and the last one used the ZX Spectrum.

audience of a literary and bookish culture, but that of the technical-visual audio crowds, since the intrinsic purpose of the medium, the computer-video, is its instantaneous and universal free transmission across the planet' (Aguar and Pestana, 1985, p. 205). Silvestre Pestana used different technical media and technologies in his artistic practice, which included video, visual poetry, performance and installation, as well as incursions into the virtual environment of *Second Life* or the use of drones, demonstrating a positive attitude towards the experimental possibilities offered by the new media.

In the mid-1980s, the Calouste Gulbenkian Foundation drew attention to a new experimental medium in the arts, with the exhibition *The Holographic Image: Eight Artists in the Laser Era* (October and November 1985), which was the first major exhibition in Portugal dedicated exclusively to the use of that technology in the making of art. In 1987, it was once again at the initiative of the Calouste Gulbenkian Foundation that an international colloquium was held on the subject of Art and Technology, complemented by exhibitions and other activities. The lectures and the papers presented at this colloquium were published six years later in book form (Santos, 1993).

1988 was a particularly interesting year, not only because of the revelation of another artist who used the computer in her work – Cecília Melo e Castro – but also because it was the year of the publication of *Poética dos Meios e Arte High Tech* by E. M. de Melo e Castro, possibly the first reflexive approach in book form in Portugal to what later became known as the "new media".

In fact, right at the beginning of the year, the *Infoarte* exhibition, at Galeria Barata (11-18 January 1988) (Fig. 5), presented abstract images by Cecília Melo e Castro, who, without having had a career or any traditional training in fine arts, began her artistic journey by producing images using software and computers, which were then photographed and presented in the gallery space as if they were paintings. In the text that E. M. de Melo e Castro wrote for the presentation of this exhibition, he stated: 'Artists of a new type are emerging [...] who do not use a pen or a typewriter, who do not paint with paints, who do not use pencils. They are INFOARTISTS. They have in common a tool that they use to produce their art: the computer and its peripherals' (Castro, 1988, p. 57), also underlining an aesthetic quality, which he described as "info-impressionism", in Cecília's artwork. Cecília Melo e Castro's work in this field resulted in two more solo exhibitions in 1988: *Infoarte 2*, at the gallery of the Junta de Turismo da Costa do Estoril; and *Infoarte 3*, at the gallery O Outro Lado do Espelho, in Sintra (Fig. 6).



Figs. 5-6 → Leaflets from *Infoarte* and *Pintura Electrónica* exhibitions by Cecilia Melo e Castro at Galeria Barata, Jan. 1988 (left), and at the gallery O Outro Lado do Espelho, Oct.-Nov. 1988 (right).

By that time, Ernesto de Melo e Castro was one of the Portuguese artists most interested in the new media, both in his artistic production and as a curator of exhibitions, activities that had repercussions upon his critical writing about these media and his thoughts about the artists that were working with them. This was evident in the work he produced in the field of video poetry, with a series that he entitled *Signagens*, a set of video poems created between 1985 and 1989 at the Universidade Aberta de Lisboa, six of which were made entirely with computer-generated images.

In his book *Poética dos Meios e Arte High Tech* [Media Poetics and High-Tech Art], Melo e Castro started by posing fundamental questions and addressing some theoretical issues regarding the new media, clarifying what he understood by "media poetics". Then he dedicated a few pages of reflection to each of the modalities that he highlighted as examples of high-tech art (infoart, infopoetry, videopoetry, holopoetry, fractal aesthetics, zero gravity poetics, tele-art and robotics).

This publication was, to some extent, the theorisation of the exhibition that Ernesto Melo e Castro had organised at Galeria Diferença, under the name of *Art High-Tech em Questão* (1988) (Figs. 7-8), in which he participated with Cecília Melo e Castro, Pedro Barbosa, Silvestre Pestana, Clara Menéres, and the Brazilian artist Eduardo Kac, with artworks that illustrated some of the themes proposed in his book. The Telectu duo also participated in this collective show by producing ambient electroacoustic music.



Figs. 7-8 → Front and back of the postcard invitation to the exhibition *Arte High Tech em Questão* at Galeria Diferença, 1988.

Although only a very small number of artists were by now working in this area, it seems that, in the 1980s, the first steps were taken to present a new type of approach to both the public and the art critics, leading to the subsequent acceptance of artistic experiments based on the new technologies and media. However, about fifteen years later, in 2001, a text written by the artist, critic and curator António Cerveira Pinto was to shed some light on the reception of this type of technological mediation:

But if all of this seems reasonable and even inevitable, there, nevertheless, continues to be some institutional resistance to the full acceptance of the new media in the territory of so-called contemporary art. An invisible fractal still separates museums, galleries, critics, and artists of the twentieth century, from those of the twenty-first century. This fractal has several names: web, net, media art, cyber art, new media. Let us just call it the fractal of art and technology. (Pinto, 2001)

## Final Considerations

The above quote by Cerveira Pinto, at the beginning of the twenty-first century, was indicative of a kind of divorce between contemporary art and the new artistic mediations and aesthetic debates associated with the new media and information technologies, legitimised by critics and museum institutions. In this respect, Portugal was no different from the rest of the art world, but there was a gap of about two decades between the national reality and what had happened in other pioneering countries in terms of the use of computers and other technologies in artistic creation. In the second half of the twentieth century, this effectively represented a very considerable length of time.

Several reasons can be highlighted, including the lack of permeability and dialogue between the world of science (namely universities and computer centres) and the artistic world, or the non-existence in Portugal, in the 1960s and 1970s, of organisations, events or centres that were able to encourage this collaboration, contrary to what was happening in other countries, such as Spain, for example, just across the border.

A very conservative approach to artistic education (centred on the traditional fields of painting, sculpture and drawing) and an equally conservative political regime did not encourage technical experimentation with the use of new technologies in the 1970s. One exception, however, was the case of video, with support being given to the artists of the Video Centre created at the National Gallery of Modern Art in Belém in the second half of the decade, although this was unfortunately destroyed by a fire in 1981.

Obviously, the political revolution of 25 April 1974 represented an important moment of social change, but it was also a time of great difficulty for artists, with the closure of many galleries (Couceiro, 2004, p. 26). It was not, therefore, the right time to undertake "laboratory" experiments with the new media without the prospect of any financial return. A few years later, in 1977, the emblematic exhibition *Alternativa Zero*, curated by Ernesto de Sousa, served as a good barometer for assessing the Portuguese artistic situation, as it was a point of convergence for the national artistic avant-garde, bringing almost 50 artists together. However, the reception of the most recent technologies was only very occasionally to be noted here, being largely insignificant.

The major festival of digital arts and the new media in Europe, *Ars Electronica*, created in Linz, Austria, in 1979, only welcomed its first Portuguese representative at its 2000 edition,<sup>7</sup> which clearly illustrates the delay of the national artistic environment in adjusting to the international art scene.

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