

Historical Perspective

## **Antes del Arte in Spain (1968–1969): Merging Art, Science and Politics in the Heat of the Cold War**

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**ABSTRACT:** The article is about Antes del Arte, a vanguard Spanish art-group that existed from 1968 to 1969. The author explains the group's history and theoretical basis as well as its artistic production through specific examples. Discussing the references taken from contemporary aesthetic scientific theories, the author analyzes the substantial theoretical framework that the art critic Aguilera introduced into the group's manifestos. Finally, she addresses the specific role that the interactions between the artistic and the scientific fields had in the context of the Spanish Franco regime.

In 1968, in the Mediterranean city of Valencia (Spain), an art critic and several artists and musicians, fascinated by the dynamics of visual perception and scientific methodologies, founded the avant-garde group Antes del Arte (Before Art). Sharing C. P. Snow's interest in “the two cultures” [1], its main objective was to retrieve the essential connection between art and science. Active from 1968 to 1969, the group's work focused on the study of visual perception, using the tools provided by mathematics and experimental sciences. Along with artworks, Antes del Arte produced a theoretical corpus, introducing an analytical angle that owed to a variety of intellectual references circulating in Spain during the late 1960s.

Despite its originality and its many links with the international art scene of the late 1960s, Antes del Arte has not received much attention from Spanish historiography until recently and remains unknown within the international scientific community. [2] This article aims to fill this gap by discussing the group's history, artistic and theoretical production, and pointing out its links with the international art scene, while stressing its particularities within the context of the Spanish dictatorship. It goes beyond the formalist interpretations that have been applied until now and shows how the essential connection between art and science was ideologically charged.

### **Responding to the “Two Cultures” Dilemma**

The group started with informal gatherings in Valencia between the art critic Vicente Aguilera Cerni and young artists like José María Yturralde, Ramón de Soto and Jordi Teixidor. The original intention was to build a study group for sharing theoretical questions as well as reading and learning about new fashionable theories, while aiming to compare the methodologies of science and art. Its members became interested in Gestalt psychology, perceptual behaviors and vision phenomena as well as in information theory and cybernetics, finding the most effective tools in kinetic, optical and programmed art. The idea, in Yturralde's words, was “to find the geometrical, mathematical and intellectual basis for our work.” [3]

Alongside the aforementioned participants, Antes del Arte included experienced artists with international or national careers (e. g. Francisco Sobrino, Eusebio Sempere and Joaquín Michavila) and received punctual collaboration from young painters (e.g. Soledad Sevilla and Eduardo Sanz). Several avant-garde composers (e.g. Francisco Llácer, Tomás Marco and Gerardo Gombáu) contributed sound environments to the exhibitions, transcending the visual field by including experimental music. Aguilera (who became a theoretical mentor) was a pivotal figure for bringing the artists and musicians together in this process [4].

Besides readings and discussions, the group members completed their self-education by attending classes on optics at the University of Valencia. [5] This multifaceted training materialized in the practical and theoretical production they showed at three exhibitions in Valencia, Madrid and Barcelona between 1968 and 1969, thus formalizing Antes del Arte's existence as an avant-garde group [6].

One of its most important contributions was a theoretical program that aimed - together with the artistic practices developed within - to produce a methodological response to Snow's thesis. [13] In the 1950s the English physicist and novelist had deplored the rupture between scientific-technical and literature-humanistic cultures, in contrast with their original association during the Renaissance, and called for finding solutions of integration. Translated into Catalan by Edicions 62 in 1965, his theories circulated in Spain during the 1960s, especially along the Catalan-speaking Mediterranean coast. [7] Snow's message must have strongly appealed to Aguilera and his artistic circle. In fact, Antes del Arte was founded just three years after the translation, adopting some of its terminology and intentions. This certainly owed to Aguilera's interests. He was in charge of developing the group's theoretical program and wrote its manifestos, a fact which also shows that the genesis of the group's theory cannot be separated from his own intellectual development, active involvement with the avant-garde art movements in Spain and antifrancoist activism. [8]

The division between the two cultures was constantly addressed in Aguilera's writings of that time, underlining that the visual arts were disadvantaged: "While sciences are moving quickly towards knowledge growth, the artistic field remains almost immobile ... Indeed, artistic culture ... is a retrograde, inhibited and reactionary culture." [9] Sharing the ambitions of the transnational vague of revolts that were shaking Western society in 1968, Antes del Arte aimed to dismantle artistic culture [10]. However, in the case of the Spanish group, the demystification of artistic culture and artistic process as a whole was aimed to bridge the gap that divided art and science.

Since Snow was mostly concerned with the separation between literary and scientific cultures, whereas Antes del Arte was focused on artistic and scientific cultures, a process of transference of his ideas to the field of visual arts was necessary, blending his concerns in with new contemporary perspectives. This is why Aguilera and the artists of Antes del Arte were open to other theoretical references connected to the reconciliation between the two cultures (e.g. semiotics, information theory, experimental psychology and Gestalt theory). The analyses of the German philosopher Max Bense and North American scientist Harold G. Cassidy were especially important. [11]

Antes del Arte's ambitions followed Bense's interest in confronting creative or critical irrationalism. His work provided the possibility "of overcoming the classical division between the natural sciences and "the sciences of the (human) spirit", by replacing the traditional "speculative metaphysics" with "artistic technology." [12] The group's theoretical framework was also indebted to Italian left-wing theorists, such as Galvano della Volpe and especially the art historian Giulio Carlo Argan, a close collaborator of Aguilera. Della Volpe had enabled a whole generation of intellectuals to develop a scientific and linguistic understanding of artistic phenomenology. [13] Regarding the work of art as an object of knowledge, Aguilera found, in his thought, a useful theory in his attempt to develop, via the visual arts, a new scientific methodology comparable to speculative sciences. Furthermore, Argan had been arguing for the comprehension of art as an exemplary form "of making" [14]; something that Aguilera transferred to his writings at an early stage. This understanding of art as an ordinary activity (not a product of the spirit), open to analysis and study became crucial for the group's scientific aims and rational stance.

### **In the Service of Man and Progress**

At first glance, Antes del Arte seemed to follow the techno-optimism that had developed since World War II within the framework of the technological Cold War race, which had dramatically changed the social, economic and artistic experience. Under the rule of dictator Francisco Franco, and backed by the US, Spain had joined the Western camp, thus participating in this development. The country had undergone radical transformations leading to a capitalist mass consumer society, favoring, through economic liberalization, the introduction of high-tech (such as the computer in 1959) and new technological advances. [15]

Antes de Arte was to a great extent a result of this modernization process. However, instead of blindly trusting this development, its aesthetic program went hand in hand with a critical stance regarding advanced capitalism, in response to the specifically technocratic moment of the dictatorship. The group was interested in the conjunction between economy, technology and state, well aware that modernization came without guarantees of freedom or civil rights. Hence, they believed it was imperative to find alternative (and scientific) means of communication for the arts in order to disrupt the capitalist channels that alienated the avant-garde's intentions, in a society ruled by a dictatorship in cahoots with capitalist consumption. Therefore, the attempts "to follow the path from science to art" [16] need to be understood as ideologically motivated.

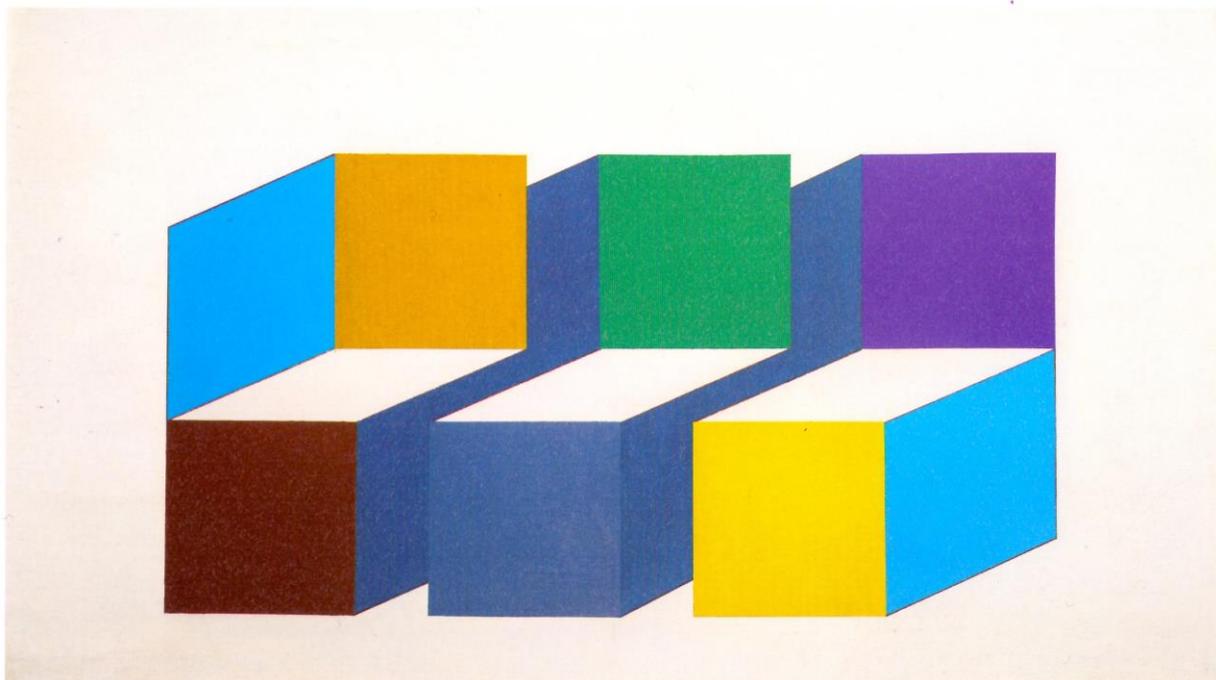
Ever since the mid-1960s, Aguilera had been concerned with the fact that the visual behaviors of the average person were no longer dependent on traditional notions of art, but on the contemporary visual practices of advertising, propaganda and information. According to him, the purpose of these practices was to persuade and convey the values of capitalist consumerism, which promoted "uniformity of reactions and desires, sensitization to stimuli that could be appropriated at any time to control consciences." [17] This is why in Antes del Arte's manifestos, he emphasized the fact that "the technically promoted culture for the masses" was the only culture that took the advances of scientific and technical culture into account, while regretting that it was being inserted into the alienated capitalist system of production "under the strict control of the philosophy of profit and of the groups of power exercising it". [18] Thus, Antes del

Arte was intended as a response to the progressive loss of impact of visual arts on social ground, as well as an attempt to reclaim space in the social sphere.

He was not the only one to believe this within the antifrancoist intelligentsia. Jordi Solé-Tura, Snow's translator into Catalan, stressed the importance of the book's rationalist claim for Spanish society as a way to reverse the existent "subordination of scientific rationality to irrationality" [cultivated by the regime], which determined private profit, social differences, anachronistic structures and privileges as well as "inaccessibility to public space" [19]; all characteristic of the Spanish living experience under the dictatorship. Following a similar argument and in the context of an army-backed dictatorship, sustained by the financial oligarchy of technocratic capitalism, *Antes del Arte's* attempt to find alternative (and scientific) means of communication, became a (utopian) way to contest the alienation of neo-capitalist society as it operated in Spain, calling for "a plan of action where science and art can coincide and find identical supports to work in the service of man, of progress". [20]

### A Visual Research Laboratory

*Antes del Arte* advocated art that followed the measurable models of science and reason, trying to reverse the manipulation of images by capitalist channels (or at least contribute to its reversal). Understanding art as verifiable, the group attempted to analyze its mechanisms and exchanges rationally and scientifically, in order to establish a scientific hypothesis about artistic production. This meant a philosophical ambition of analyzing art through a scientific methodology, intending to verify and quantify "the possible foundations of what is called art." [21] So the group became a visual research laboratory in which the artworks demonstrated scientific phenomena following three directions of research: a) the functioning of vision, b) the behavior of perception and c) the experimentation with structural systems.



**Fig. 1. José María Yturralde, *Figura imposible*, 1969. Acrylic on wood, 94 × 167cm. (© José María Yturralde)**

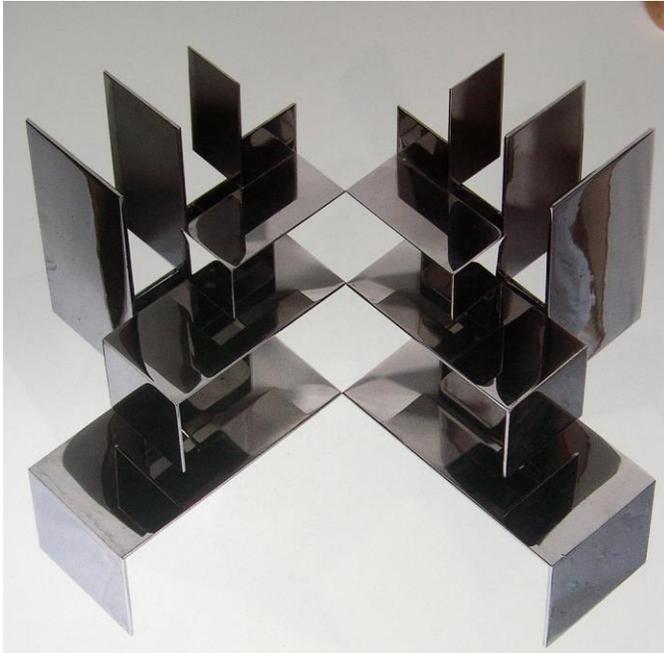
a) One of the most prolific projects was the Impossible Figure series that Yturralde started in 1968, which he later computerized. [22] [Fig. 1] He worked with basic geometrical shapes (such as triangles, prisms and cubes), apparently consisting of three-dimensional figures but created from two-dimensional data. Based on the “Impossible objects” of L. S. and R. Penrose [23], Yturralde used the scientific laws of the visual process to manipulate the viewer’s experience and confront them with the phenomenon of perceptual instability. At first glance the squared prisms in the canvas are convincing figures but the cognitive verification of its feasibility in three dimensions shortly leads to the conclusion that it cannot exist. Thus, the natural condition of perception cannot be satisfied.



**Fig. 2. Eusebio Sempere, *Ley de la Buena Forma*, 1968. Light bulbs on wood, 110 × 110 cm. Museo Reina Sofía. (© Eusebio Sempere)**

b) Other artists also analyzed the perceptual process. This was the case of Sempere’s Law of Good Form [Fig. 2], based on Gestalt theory. Created at the beginning of the 20<sup>th</sup> century in Germany, this school of experimental psychology advanced the understanding of human perception. It became one of the main instruments for visual artists of the 1950s onwards for the study and comprehension of the dynamics of perception, but also for the introduction of scientific laws and methods into artistic practices [24]. In this work, Sempere exemplifies the Law of Good Form, which states that the eye is most likely to perceive stable geometric forms that are simple, regular and symmetrical. The piece *demonstrates* how the law works and how we perceive via significant and coherent units. On a confined plane, he combined simple

elements (in this case light bulbs). Consecutively activating different sets of light bulbs, the patterns change, making the viewer perceive different-colored circles, squares and pentagons due to the brain's tendency to group visual signals following the principles of proximity, color and continuity.



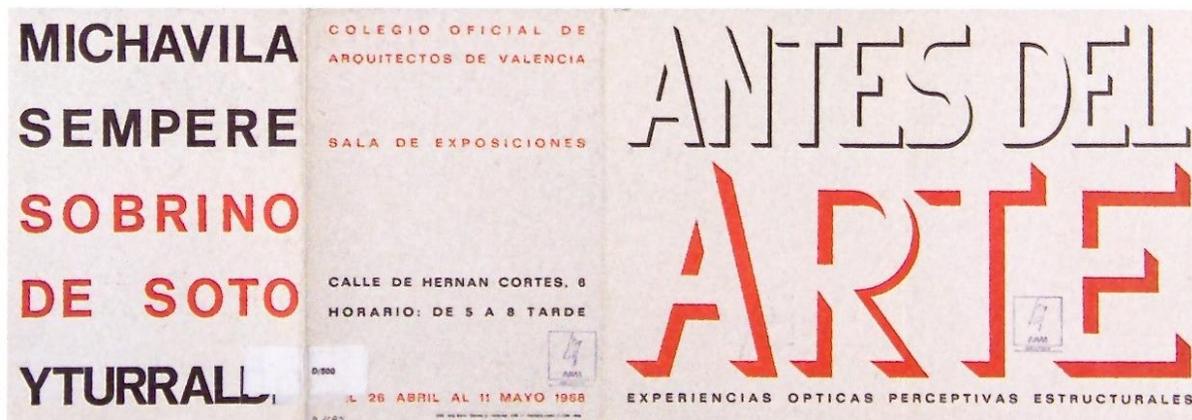
**Fig. 3.** Ramón de Soto, *Sistema generador 1*, 1969. Iron, 85 × 200 × 140. Artist's collection. (© Natividad Navalón Blesa)

c) Finally, the study of structural systems helped rationalize the generation of forms. Soto worked with modular iron structures, investigating the movements of Euclidian geometry, such as translations, symmetries, turns and proportional relations [Fig. 3]. Teixidor was interested in the reproduction of natural, structural models. Using isomorphism, he mimicked fluorite crystal twinning [Fig. 5]; this strategy became a legitimate way to introduce scientific models into the artistic realm.



**Fig. 4. Jordi Teixidor, *Macla de penetración de la fluorite*, 1968. Methacrylate, 30 × 30 × 30cm. Fundación Juan March. (© Jordi Teixidor)**

As it visible in these four examples, *Antes del Arte*'s artists supported rational, scientific and geometric-abstract art, following the group's aim to establish a (provisional) methodology to connect art and science, via a rational, objective and technological production. This choice was experimental as well as ideological. Firstly, they demystified the creative act and the artwork as unique and auratic, reinforcing a conscious and anti-romanticist stance, as well as losing the objectual basis. In fact, in their first exhibition they stressed the presentation of optical, structural and perceptual experiences [Fig. 5]. The group's artistic production went from painting to sculpture and multi-sensorial installations, actively provoking an ambiguous perceptual situation that sought activation by the spectators. What's more, the visual and psychological effects produced by the pieces were increased by the display that used purple lighting in order to enhance the spectator's concentration.



**Fig. 5. Exhibition leaflet at the Colegio de Arquitectos de Valencia, 1968. Francisco Llácer archives. (© Irene Llácer Sancho)**

Secondly, by advocating for this kind of practice the group contested the irrationality, essentialist and individualist values that the regime backed –as Solà and Aguilera noted– in the socio-political and aesthetic realms (e.g. by sponsoring the Spanish Informel) [25]. Instead, they tried to build new connections between art and science as a basis for a future reconfiguration of power relations. Opting for radical experimentation, their contestation of the status quo was firm but subtle, confined to the field of the laboratory, where they had clear advantages. Thus, this position allowed the artists to dissent while keeping a safe distance from the repressive apparatus of the state that was acting strongly against its opposition. This is why Antes del Arte was seen with suspicion, despite its sincere criticism of capitalism and the commitment of some of its members to the antifrancoist cause. In a country where the avant-garde was adopting a committed antifrancoist (anticapitalist) position, many left-wing critics and artists supported a much more direct criticism than Antes del Arte in its abstraction, for example favoring critical realism [26]. Furthermore, following Marcuse's uncompromising position, the cultural left had identified the technological developments of consumer society as constitutive of the capitalist (francoist) system [27]. Since the 1960s, several articles viewed Snow's and Cassidy's excessive optimism regarding the emancipatory impulses of technology with skepticism [28]. The subtle technodissidence of Antes del Arte, forged intellectually and methodologically, was seen as ambiguous, and once the group had disappeared, the attempts to merge art and science were denounced. In 1972, due to the entanglement between technological development and Franco's state control, artists using new computing technologies were even accused of being cyberfascists, as recalled by Juan Manuel Bonet [29]. However, when Antes del Arte operated it saw an opportunity in this conundrum; instead of the dismissal of technology as alienated and aligned with power, but aware of the risk, the group tried to use technology/science in its favor.

Finally, Antes del Arte should be regarded, on the one hand, as part of an international tendency that reinterpreted the integration of the visual arts within the scientific developments that the kinetic and cybernetic artistic movements had been favoring since the 1960s. The group's exploration dealt with contemporary initiatives that had emerged transnationally, and that sought to build relations between art, science and cybernetics - it was in 1967 that the CAVS was founded at the MIT, and the following year recently completed computing experiences were shown at the Cybernetics Serendipity (ICA, London). The Spanish group was aware of these developments and projects, and were even in contact with some of them. This was the case of the New Tendencies network, which Sobrino had been an active member of, as well as Yturralde, Sempere and Aguilera's participation to similar initiatives in Spain (e.g. Seminar of Automatic Generative Forms at the Centro de Cálculo in Madrid or the experimental artistic platform MENTE in Barcelona). [30]

On the other hand, the group should be understood as a response to the specific context of Franco's dictatorship, where bridging the gap between the "two cultures" was also part of a leftist program that operated against the dictatorship. The intellectual and artistic circles, to which Antes del Arte belonged, quite aware of the economic-technological networks of power, promoted a scientific cultural agenda and tested the possibilities of an alternative path for improving aesthetical, cultural and social conditions. This implied a whole theoretical and practical program of scientific analysis that radically challenged the traditional models of artistic creation, supporting experimentation, interaction and rationality.

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