

Creating Un-Predictive Models. Julián Gil's Sensitivity and Sensibility

Maria Cuevas

Abstract.

This article is a review of the theoretical concepts of the science of complexity (chaos and fuzzy logic theory) and systems theory present in the work of Julián Gil, presenting a concise explanation of the terms and key concepts. The objective is to understand the conceptual foundation and creative process of his work more deeply, and to show some of his works: the OCT and TONDOS series. Other theories related to the artist's organizational and record-keeping methodology will also be discussed within the context of the science of complexity.

Keywords: theory of complexity, systemic thinking, concrete art, chaos, fuzzy logic.

1. The poetics of the process and the archive: from systemic to complex thinking.

To define the concepts involved in the work or the creative process of an artist with a wide-ranging career is no easy task, even when we focus our attention on one time period, one method or one technique.

This article focuses on the work of the artist Julián Gil in recent years (2016-2019) and reviews the particularities of his artistic process. Gil's way of working, which has formed over the years, reflects a particular way of understanding the profession, as well as the issues that concern the artist and the research methodologies he uses to respond to them on a personal, aesthetic and creative level. Gil's approach to his projects, and his way of seeking out theoretical and practical sources of interest to them, is unique. Although his methods have been constant over his career, he has also refined them over time and incorporated the necessary theoretical and practical ingredients so that the results make sense to him. This way of defining or presenting himself as a creator within the field of contemporary art practices is what makes his work interesting and relevant.

Among the theoretical and practical sources that can be seen in his work, this article will highlight those related to his use of epigraphs related to complexity theory and general systems theory. Both are relevant topics not only within the art world, but also in other fields of knowledge such as science and technology.

From complexity theory, the concepts and terms that the author has inadvertently incorporated in his work are of particular interest. For this article it is interesting to analyze and reflect on the *modus operandi* of the artist, and to point out the intellectual systems that he defines in order to obtain complex results.

To this end, I will structure this article around two main currents used in contemporary ways of working that serve to define the commitment of the artist not only with the possible concrete results of his work but also with the processes he uses to perform it. The artist, in accordance with his personal sensibility, seeks to make his processes increasingly complex, more nuanced and to execute them with a maximum level of freedom. The concepts of chaos theory and fuzzy logic theory facilitate the exploration of these necessities. Here the goal is not to define these branches of knowledge of complexity theory, but rather to reflect on the actions that Julián Gil includes in his creative processes and that make these theories appear: chance, unpredictability and indeterminism. Most of these practices have to do with the author's way of involving himself, both personally and intellectually, in his projects: the perceptual and processual sharpness of the issues that he deals with, and the observation of the decisions he takes in order to realize them. I hope to examine the work of the artist from his *modus vivendi*, from the place where his creative process takes place, from the solitude and the private space where he formulates the aesthetic questions that concern him and from which he resolves the dilemmas that arise in his professional activity. Even without having been present in those magical creative moments, it is possible to examine this delicate topic through conversations

with the artist and the documentation that he was generous enough to share with me, as well as the systemic constants that appear in his work.

In order to examine the presence of systems theory in his projects, we will look at the systemic thought that the artist incorporates into his work to define, develop, and present the results of his creative research. The goal is to define the systemic structure of his work, specify the graphical-conceptual nodes he chooses to form his theoretical and practical expository device and the relationships he establishes among them, to specify the operative and conceptual constants that arise along the way, and to show the way his works are organized by theme and by their names (Serie "Raíz de dos", Serie "ORT", Serie "ESC", Serie "HEM", Serie "ORT / ESC", Serie "ESC / HEM", Serie "Verbier", Serie "Cuadrados curvas", Serie "Áureo", Serie "Phi", Serie "P.A.C.", Serie "Doble R", Serie "R.A. 2", Serie "Molinos", Serie "Formas", Serie "Cuaderno de Polonia", etc.). I hope to reveal the systems implicit in the definition, development and conclusion of two of his latest works: OCT and TONDOS. To this end I will enter into the identification of the graphic elements he has chosen to articulate his visual language and in the definition of the compositional relationships he chooses to configure his works.

Finally, I will reflect on the intellectual commitment of the artist with respect to his profession and the information generated by his works, and the usually unseen ways that the artist documents his projects and performs his artistic research. The idea is to review the systemic concepts of self-organization and archiving. The analysis of self-organization seeks to show the methodologies of documentary research, which is complementary to artistic production, that Julián Gil uses in order to generate new ways of understanding artistic problems and to offer other professionals knowledge of innovative processual developments. The concept of archive is used to organize and give value to the conceptual device that describes the work realized by the artist and the way it is developed in relation to his work.

In short, the goal is to show the theoretical and practical universe that is part of the landscape of contemporary art. It is important to name some of the authors whose ideas have influenced the development of this paper: Ludwig von Bertalanffy (1901-1972), Heinz von Foerster (1911-2002), John von Neumann (1903-1957), Gregory Bateson (1904-1980), Norbert Wiener (1894-1964), David Bohm (1917-1994), Humberto Maturana (1928-) and Francisco Varela (1946-2002).

2. Chaos theory. Chaos, sensitivity to initial conditions, non-linearity.

The chaos theory proposed by Jules-Henri Poincaré (1854-1912) and endorsed by scientists such as Edward Lorenz (1917-2008), Giulio Casati (1942-), Ilya Prigogine (1917-2003), Jorge Wagensberg (1948-2018), and Gregory Bateson (1904-1980) exhibits two characteristics necessary for its application to a system. First of all, it proposes that systems that it can be applied to must show dynamic behaviour. Their development must be able to be recalculated as many times as necessary. There must not be any pre-established determining factor *a priori*. If there is, its value must be random. Secondly, it states that systems must be structured in a complex way and defined by a great number of components and variables. As a result, it is difficult for them to reveal the order of their data in an obvious way. They therefore give an impression of a bunch of disorganized data. However, the presence of a subtle, underlying structure that gives meaning and order to the system can be perceived. The key is to define and identify this structure.

The main concepts that underpin the theory of chaos are the following: the term chaos itself; the sensitivity to the initial conditions that must be taken into account to define the dynamism or the evolution of complex behaviour; the non-linearity of systems; the properties of unpredictability, chance or probability and indeterminism or uncertainty that arise as a consequence of the application of those systems. In Julián Gil's work these attributes receive more or less attention depending on the project in question. There is, however, a common theoretical framework that defines the systems the artist uses and their behaviour. He characterizes each system by defining the process for constructing it and by establishing rules that allow him to manage and facilitate its evolutionary dynamic with a high level of flexibility. The result of their application produces groups of works that are identified with a common nomenclature and are defined with the term *serie* (series).

:

The etymological origin of the term chaos is in the Latin *chaos*, from the Greek «*χάος*» (*kháos*). Generally, the idea of chaos applies to a general state of confusion and disorder. However, in the context of complex systems, the term

chaos is used to explain the unpredictable behaviour of some non-linear systems due to their dependence on and sensitivity to the initial conditions from which they start. The study of chaos is associated with names like Popper (1996), Lorenz (2000), Poincaré (1963), Bohm (1980), Gleick (1988), Mandelbrot (1982) y Prigogine (1994, 1997, etc).

Sensitivity to initial conditions refers to the dependence of the evolution of a system according to the factors present at the beginning of the process. The existence of this attribute means that the development of a system is subject to constant changes, which can produce, in the medium and long term, great unpredictability. In the case of Julián Gil, the presence of an insignificant event like the choice of the position of the first point of the first line of the composition or the choice of the first colour in one of the possible geometric fields of the work determines the development of the his work processes in a certain direction. The artist then uses these newly discovered creative strategies to produce other series of works.

Non-linearity can be considered one of the most important attributes of complex systems. It shows the non-deterministic nature of the system (reactive disproportionality between cause and effect), the occurrence of discontinuities and the quality of unpredictability. It could be said to characterize the evolutionary process of chaotic systems. Its presence can manifest itself in two important ways: as the result of the feedback of the variables selected by the author of a system; and due to the presence of continuous bifurcations related to decision-making during the configuration of a project.

The non-linear systems defined by Julián Gil for his projects are affected by these two characteristics. The first one, feedback among variables, means that during the process of configuration of his works the variables that the artist works with when defining his project (points, lines, planes, colour, proportions, and sizes) continuously multiply their presence in the work and alter the final result. The second characteristic, the presence of bifurcations, suggests that the system presents more than one possible solution during its different stages of construction. This means that the work can evolve in different directions, and as a result has an infinite variety of possible solutions. These discontinuities, produced by choice, error, or chance during the process of creating the works, can be called fluctuations, a term that refers to the distance between the actual result and what was predicted or expected.

3. Fuzzy logic.

If the theory of fuzzy logic of the Iranian Lofty Zadeh is applied to the field of the humanities, and more specifically to creativity, we can interpret the concept as a practical characteristic of complexity. Its application consists of quantifying imprecise descriptions that are used in everyday language in gradually scalable terms. This flexible way of perceiving facts allows often unquantifiable acts to be evaluated with terms like *a little, a lot, more or less, neither one, some of each*, etc. It could be said that fuzzy logic produces graduated results from imprecise data and that the values used in this type of response always connote uncertainty. This multivalent characteristic that is used to analyse information about the real world in terms of scales allows for the construction of devices that are able to evaluate information that is difficult to define, and is very useful for evaluating fundamental concepts of complex systems: uncertainty (Lukasiewicz), probability (Reichenbach); infinity (Godel) and possibility (Zadeh).

4. Serie OCT and Serie TONDOS.

Julián Gil's 2016 and 2019 projects Serie OCT (Octágono) and Serie TONDOS suggest the presence of a wide-ranging and diverse theoretical and practical corpus that contributes to structuring artistic knowledge related to the development of contemporary creative processes linked to complexity theory and systemic thought: error, indeterminism, unpredictability, non-linearity, chance, randomness, sensitivity to changes in the initial and intermediate conditions of processes, and the definition of meaningful attractor points.

Julián Gil bases his creative work on the use of systems that he defines theoretically and practically and to which he applies previously established processes of transformation. His systems are governed by non-linear dynamics and are sensitive to initial and processual conditions that the artist specifies when he determines, in aesthetic terms, his systems: grids (ORT, ESC, HEM, PHI, DR, OCT), colours, structures, geometries, proportions, points.

Julián Gil's artistic projects are the visual result of a complex intellectual group of theoretical/practical systems that are in constant evolution and that tend toward increasing complexity over time. His output is not subject to reductionist, deterministic laws of cause and effect.

The artist's work methodology for producing finished works includes the production of a series of middle phases that he presents in the following formats: graphite drawings on vegetable paper of the grids that he will use to explore and develop his series; the linear development of creative ideas made in graphite, in black and white and color, using a particular way of interpreting the previously generated structures; the creation of chromatic gouache representations in DIN A-4 format of some of the linear explorations done in graphite; and creation of the final work in colour with acrylic and/or digital printing in the formats that the artist deems appropriate. Once the manual process has begun, a digital representation of the results is also produced. This language serves, in some cases, as a promoter of new solutions, which the artist might paint in acrylic once he has analyzed them. These results, depending on the complexity of the creative process, can vary.

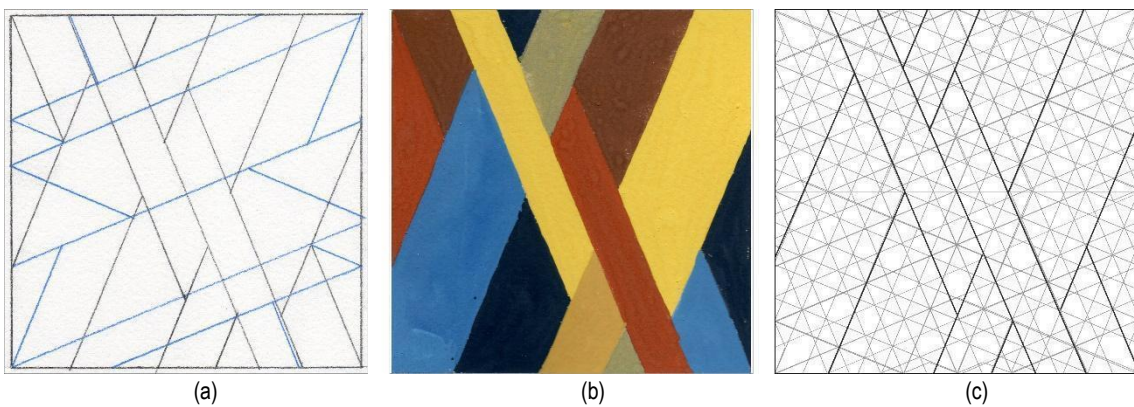


Figure 1. Serie OCT. (a) OCT 021. Sketch. Graphite on paper, 29.7 X 21 cm. (b) OCT 002. Sketch. Gouache on ARCHES paper, 29.7 X 21 cm. (c) OCT 15. Sketch. Graphite on vegetable paper, 29.7 X 21 cm.

The examples from Serie OCT (octagons) presented in this article are made from an irregular grid based on the geometry of the octagon. All of its lines are parallel to one of the sides of the regular polygon. The artist makes two interpretations of the structure. In the first, he obtains compositions of irregular surfaces to which he applies subjective colour criteria. In some cases he introduces the idea of symmetry, sometimes applied to the positioning and distribution of the forms and other times to the use of colour. In the second, he generates linear compositions according to rhythmic, proportional, relational and connective criteria, beginning by superimposing two linear colour systems made previously on the base structure.

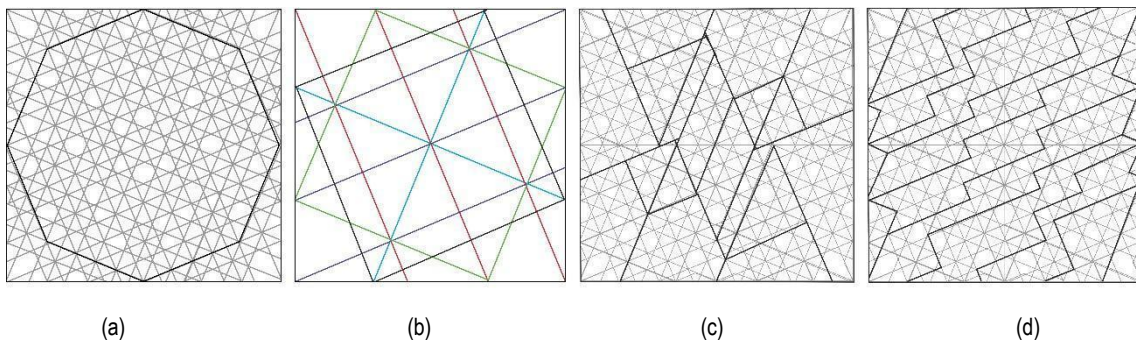


Figure 2. Serie OCT. (a) OCT. Basic structure template. (b) OCT. Basic structure template (fragment). (c) OCT 43. Sketch. (d) OCT 428. Sketch.

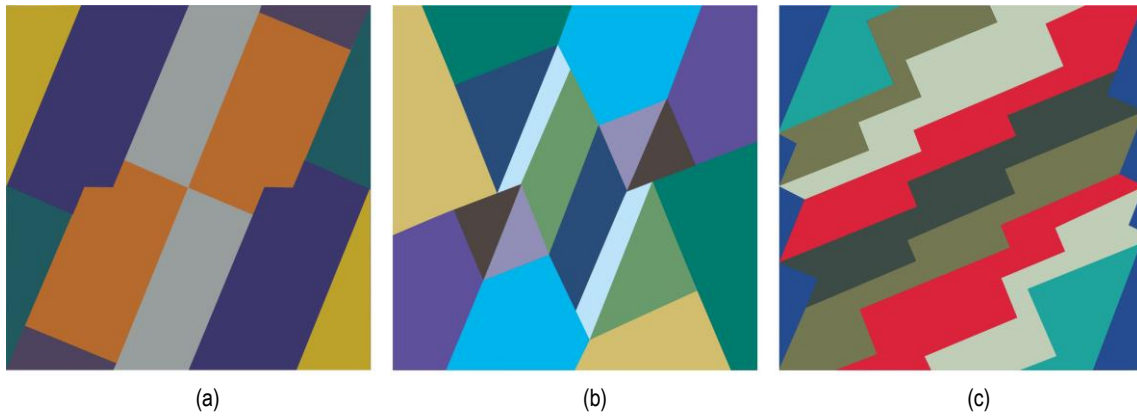


Figure 3. Serie OCT. (a) OCT M16 A. (b) OCT 43 A. (b) OCT 428 B.

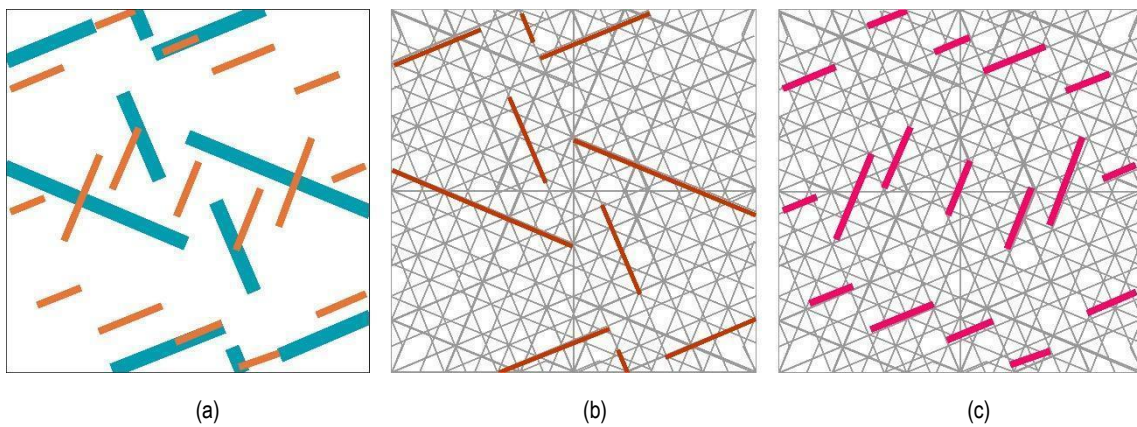


Figure 4. Serie OCT DL. (a) OCT DL F327 OA. (b) OCT DL F32. Structure. (c) OCT DL F7 MA. Structure.

The examples from Serie TONDOS presented in this article begin with a grid made when three structures that the artist has used on other occasions are superimposed: ORT (*orthogonal*), ESC (*set square*) and HEM (*hemi-Pythagorean*). For these pieces, the artist uses a template of significant attractor points on a HEM grid. He also designs a device of rectangular forms and of variable width that allows him to draw the lines of the final compositions. The artist's creative, formal, and chromatic strategies in this series are highly varied. It is interesting to note the fluctuations in perception, rhythm, and balance that can be deduced from the proposed system: *in balance, near balance, far from balance, stable balance, dynamic balance, natural or simple rhythms, simultaneous rhythms, accumulative rhythms, linear rhythms, and rhythms in palindrome*.

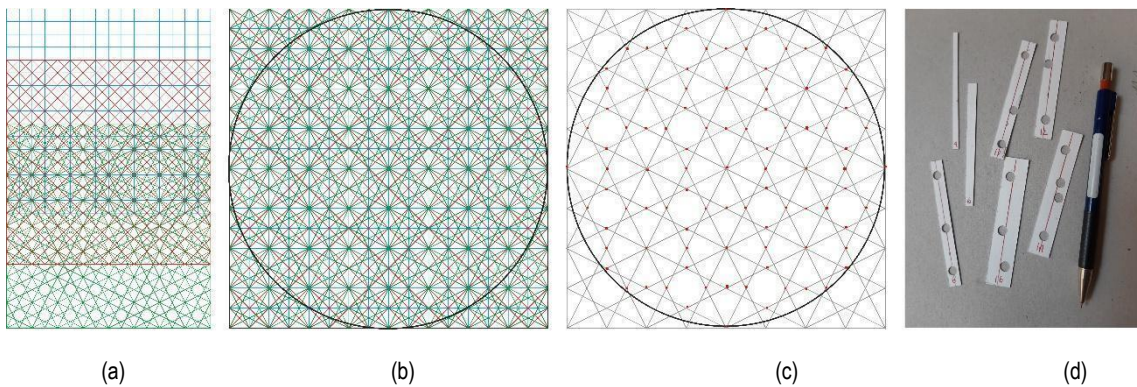


Figure 5. Serie TONDOS. (a) ORT+ESC+HEM. Serie TONDOS basic structure template. Constructive process. (b) ORT+ESC+HEM. Serie TONDOS basic structure template. (c) HEM. Basic structure template. Distribution of attractor points. (d) Cardboard guides designed by the artist, Julián Gil, to create sketches of the linear compositions of the series.

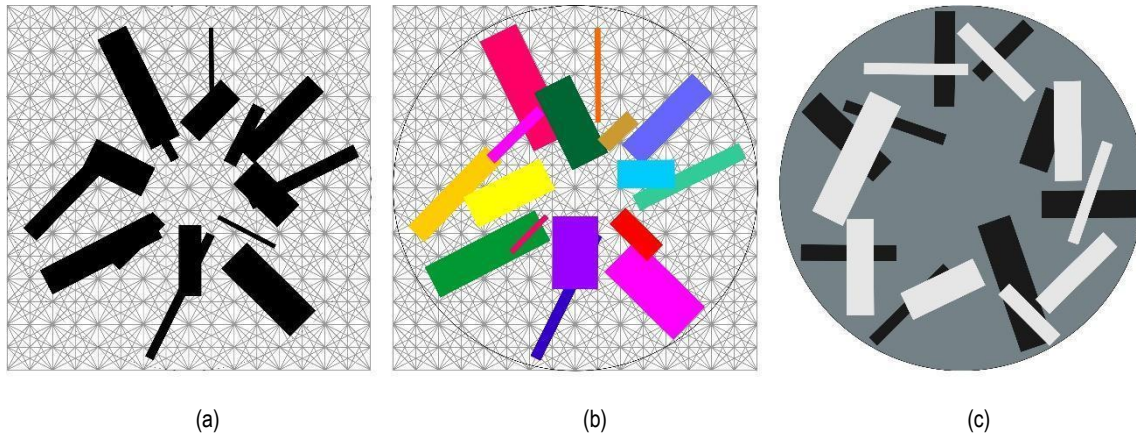


Figure 6. Serie TONDOS V. (a) TONDOS V. BN TV 1920. Structure. (b) TONDOS V. 1924. Structure. (c) TONDOS V. 2G 2BN.

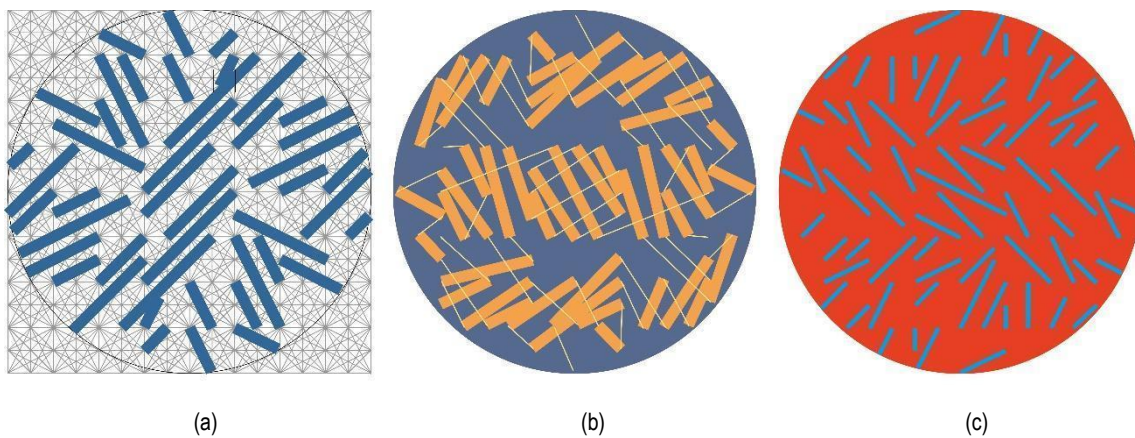


Figure 7. Serie TONDOS IV. (a) TONDOS IV. T4 21. (b) TONDOS IV. A017 T4 2930 C. (c) TONDOS IV. T4 20.

5. Self-organization and archiving.

In the process of self-organization of his work methodology, the artist generates analogue and digital material that he uses indiscriminately to produce his series. His works begin with a challenge or intellectual problem that he tries to resolve from an aesthetic point of view using a visual language based on geometry and colour. According to consultations with the artist himself, he begins by defining his project conceptually and doing his first graphical musings on vegetable paper with graphite pencils, sometimes in black and other times in colour. Depending on the needs of his process, Julián Gil creates whatever devices his creativity requires. Sometimes he produces screens with a drawn grid pattern, which he then superimposes in order to enrich or complicate his works. Other times he produces compasses that allow him to trace circles from certain points, or geometric templates that serve as a set of samples of the pieces he will use in the project. Over time, the artist has devised a great number of devices.

The artist has also done consistent and specific work around the concept of the archive. With rigour and structural coherence, he does the aesthetic, conceptual, legal and administrative organization of his work. The artist uses an archive to record, collect and store information about his works and his constructive processes. When he stores or collects, he assigns a specific place to his works or the information related to them. When he archives, he unifies, identifies and classifies the documents that he generates in his artistic production and that configure his identity as an artist.

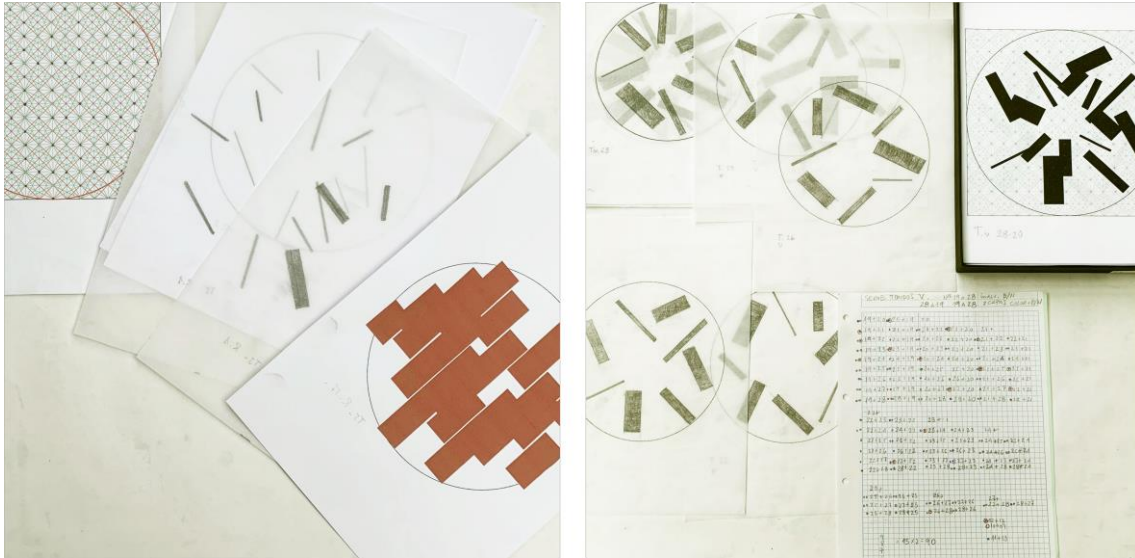


Figure 8. Julián Gil Studio. Documentation of archives and processes.

In Julián Gil's documentary activities, two types of archives can be distinguished: a physical archive connected to objectual culture and the memory of the logic of his productive systems, and a virtual archive that contains digital information about his constructive processes.

The type of archive the artist generates is based on a principle of origins. This principle (...) *defines the archive as a neutral place that stores records and documents that allow the users to return to the conditions in which they were created, to the media that produced them, to the contexts they are part of and to the technical keys to their emergence. It is only through the reading of these documents (always fragmentary facts) that the historian has access to and can reconstruct the past, understanding that the present and future are contained in this past* (Guasch 2011, 16)¹.

Madrid, 3rd August 2019

mmcuevas@art.ucm.es

¹ Guasch, Ana María. 2011. *Arte y Archivo, 1920-2010: Genealogías, Tipologías y Discontinuidades*. «Arte Contemporáneo, 29». Madrid: Akal.