Color as a Generative Principle in the Work of Sonia Delaunay

A conceptual preamble on color theory in the context of algorithmic image production

Version 9.1 - Theoretical and Historical Expansion

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Authorial Research Framework
NVO987

Affiliated scholarly communities
Visual Theory in the Age of Algorithms (Zenodo)
Sonia Delaunay and Modern Visual Systems (Knowledge Commons Works)
Visual Theory in the Age of Algorithms (Zotero)

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Abstract

This paper examines the role of color in the art of Sonia Delaunay as a conceptual and theoretical study, with particular attention to how color can be interpreted as an autonomous, generative principle within the context of modern and contemporary visual culture. The research is based on the recognition that, in Delaunay's oeuvre, color does not appear merely as a formal or decorative element, but rather as an organizing force capable of structuring the image, space, and visual rhythm according to its own internal logic. The study emphasizes that Sonia Delaunay's color-theoretical thinking cannot be fully separated from the work of Robert Delaunay and from the context of Parisian Orphism, in which color acquired dynamic, temporal, and energetic dimensions. The research therefore approaches color theory not as an individual artistic problem, but as part of a jointly developed theoretical and artistic system.

In the age of digital and algorithmic image generation — a condition rooted in the computational transformation of visual production since the late twentieth century — where color selection and the construction of visual structures are increasingly the result of automated systems, it becomes particularly timely to reassess artistic practices that treated color as an autonomous, generative principle. This perspective is further extended toward contemporary painterly practices in which color operates as a spatial and experiential event, emphasizing bodily perception, temporality, and material presence as integral components of visual generation. The study does not aim at empirical analysis, but rather outlines a historical and theoretical framework that connects the color-theoretical thinking of the Delaunay couple with the functioning of contemporary visual systems. The purpose of the text is to articulate why the oeuvre of Sonia Delaunay, interpreted together with that of Robert Delaunay, can be approached as a relevant point of reference for the interpretation of contemporary visual culture, particularly in relation to algorithmic image generation and abstract visual systems, and why it is warranted to lay the groundwork for a later, more comprehensive interdisciplinary research on this subject.

The present version includes an explicit statement of citation, versioning, and infrastructural positioning, provided separately from the abstract, and makes explicit the ethical, authorship, and infrastructural conditions under which the research is presented.

Research Framework Context

NVO987

The present study serves as a reference point for further theoretical writings and visual analyses developed within the NVO987 research framework. NVO987 designates a conceptual and infrastructural framework established by the author that connects the present research to a broader line of inquiry concerned with generative color, visual systems, and the transformation of image production. The framework does not appear as a closed theory but makes visible a traceable line of thought through which different periods, media, and visual systems can be brought into relation with one another.

Citation and Reference Framework

This document constitutes Version 9.1 of the research program Color as a Generative Principle in the Work of Sonia Delaunay. Version 9.1 functions as the primary reference point for the research as a whole, providing the structural, contextual, and infrastructural framework through which the associated documents are to be interpreted and cited.

While the core theoretical arguments and conceptual formulations of the research were developed in earlier versions—most notably Version 7—general, contextual, or program-level references to the research should cite Version 9.1 as the main point of entry. This version does not introduce new theoretical content; rather, it establishes a stable and authoritative citation framework that clarifies the relationships among the different components of the research corpus and makes explicit certain historical and medial contexts that were already implicit in the earlier theoretical structure, particularly concerning the late twentieth-century computational transformation of visual production.

Note on previous versions

This study was originally published on Zenodo under a single concept DOI (10.5281/zenodo.18009245). The preliminary version was first released as Version 1 (DOI: 10.5281/zenodo.18009246). The research reached its complete theoretical and analytical closure in Version 7, which established the finalized conceptual position of the study. Version 8 introduced no new theoretical or empirical content and served to consolidate the existing research corpus through structural revision, documentation alignment, and archival organization. Version 9 maintained this closed research state and clarified the historical and medial framing within which the existing theoretical position is to be understood. The present document, designated as Version 9.1, introduces a minor historical–contextual clarification concerning the late twentieth-century computational transformation of image production, without modifying the study's theoretical framework or conclusions.

Keywords

Color Theory; Sonia Delaunay; Robert Delaunay; Orphism; NVO987; Visual Culture; Modernism; Algorithmic Image Culture; Modern and Contemporary Art; Color Autonomy; Generative Aesthetics; Visual Systems Theory; Perception and Temporality; Computational Image Production; Painterly Color.

Status and Infrastructural Positioning

Clarification of the document's status and context

The designation of the present document as Version 9 does not indicate the opening of a new theoretical phase, a shift in research direction, or a modification of previously consolidated theoretical claims. The change of version is exclusively status-related and infrastructural in nature, and its purpose is to make explicit the scientific and discursive environment in which the closed theoretical position is situated, as well as the role it occupies within the broader research corpus to which it belongs.

Version 8 recorded the theoretical and structural closure of the study. The present Version 9 does not add new content to this core, but instead clearly distinguishes between the closed theoretical position and the infrastructural environment within which the document becomes accessible, citable, and discursively operative.

This distinction is of fundamental importance from the perspective of contemporary academic ethics.

The relationship between the closed theoretical position and public scholarly infrastructure

The theoretical claims articulated throughout the study remain the outcome of an autonomous, closed conceptual research phase. The document does not become an "ongoing research project" merely by appearing within public scholarly infrastructures. The technical and institutional environment of publication does not modify the status of the research, but rather determines the conditions of its visibility, accessibility, and connectivity.

The purpose of Version 9 is precisely to make explicit that the present study is not an open research project, not an empirical investigation, and not the documentation of an iterative research process. Instead, it constitutes a stable theoretical reference point to which further research may relate, but which itself does not participate in research iterations. The historical contextual references introduced in Version 9.1—particularly those concerning the late twentieth-century computational transformation of visual production—do not constitute an expansion of the study's theoretical scope. They function solely as a clarification of historical

conditions that were already structurally implicit in the previously established theoretical position. Their inclusion serves an explicative and contextual role within the document's infrastructural positioning, rather than marking the continuation or reopening of the research process.

The Role of Scholarly Communities as Discursive and Infrastructural Context

The present study is placed within several platform-designated scholarly environments that constitute its discursive and infrastructural context. These include Visual Theory in the Age of Algorithms (Zenodo community), Sonia Delaunay and Modern Visual Systems (Knowledge Commons Works), and Visual Theory in the Age of Algorithms (Zotero).

The placement of the study within these platform-designated communities is not merely an archival or dissemination decision, but a conscious infrastructural positioning. Through these environments, the study appears together with related materials — including theoretical texts, research programs, conceptual datasets, and positioning documents — which form a structured and thematically coherent research corpus. The function of these communities, in a platform-specific sense, is organizational and contextual: they create an intelligible scholarly environment in which the research can be situated, made accessible, and interpreted in relation to related works.

The V8 document as a theoretical axis

In its Version 8 state, the present study already fulfills the function of operating as the theoretical axis of the research corpus. Version 9 does not alter this role, but reinforces it.
The study is not one document among many, but the stable reference point to which the other elements of the corpus—whether currently existing or emerging through future research—may relate. The establishment of the Zenodo community does not relativize this axial character, but rather makes it explicitly visible.

In this sense, V8 is not merely "part of" a community, but a structuring element of it. The community does not reframe the study; rather, the study organizes the theoretical horizon of the community

Justification of Version 9

The creation of Version 9 is justified both technically and ethically. From a technical perspective, it allows the version history of the document to clearly distinguish between the phase of theoretical consolidation (V8) and the phase of infrastructural positioning (V9). From an ethical perspective, it ensures that the reader clearly understands that the status of the document has not changed; only its scholarly context has been made explicit.

This solution avoids the potential misunderstanding that appearance within a community would automatically imply open or ongoing research. Version 9 is precisely designed to exclude such misinterpretations.

Justification of Version 9.1

Version 9.1 does not represent the continuation of the study, nor the introduction of additional theoretical arguments. Its purpose is to make explicit a historical-medial condition that had already been structurally presupposed within the established theoretical position.

The references to the late twentieth-century computational transformation of visual production — particularly the shift from image as surface to image as data — do not expand the conceptual framework of the study, but clarify the historical horizon within which the contemporary status of color becomes intelligible.

Version 9.1 therefore operates as a contextual specification rather than as a new phase of the study. It renders visible the historical depth of conditions already implicit in the theoretical argument, without modifying the study’s conceptual conclusions or reopening its trajectory.

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Research Corpus Overview

The present document records the results of an autonomous, closed theoretical and conceptual research phase. The text is not intended as a dissertation, an empirical research report, or an exhaustive art historical study, but rather as a coherent theoretical framework within which the autonomous, generative, and relational operation of color can be interpreted in the context of modern and contemporary visual culture.

This study constitutes the central element of a broader research corpus. The corpus consists of multiple interrelated but functionally distinct documents which together form a preparatory, research-grounding portfolio. The documents do not stand in a hierarchical relationship to one another; instead, they contribute to the exploration of the same theoretical problem from different perspectives and according to different functional roles.

The present study (Color as a Generative Principle in the Work of Sonia Delaunay) forms the theoretical core of the research corpus. Its purpose is to establish the conceptual framework and to demonstrate that color does not function merely as a visual element or a technical parameter, but can be understood as an organizing principle of visual thought, as a generative structure, and as a relational operation.

The central theoretical framework is complemented by the following related documents:

Color as a Generative Principle in the Work of Sonia Delaunay

(conference presentation material)

This document represents a condensed, presentation-oriented articulation of the central theoretical framework of the research. Its function is not to formulate new theoretical claims, but to present the already established conceptual position within a public and discursive environment.

The text situates the theory of the generative operation of color within the theoretical tension between modernist painting (with particular attention to the work of Sonia Delaunay) and contemporary algorithmic image culture. The emphasis lies on the clear structuring of theoretical theses and on their interpretability within a presentation context.

Within the research corpus, this document serves a mediating role: it connects the full-length theoretical study with later, more specialized analyses. Accordingly, it is not to be understood as an expansion of the research, but as its functional rearticulation.

The Generative Operation of Color in Algorithmic Image Culture

(*research note / position paper articulating a theoretical stance)*

This document constitutes the contextual and positioning element of the research corpus. Its purpose is not to expand or modify the central theoretical framework, but to make it explicit within a contemporary, technologically determined visual environment. The text examines the question of the generative operation of color in the context of algorithmic and artificial-intelligence-based image culture.

The study is directly derived from the theoretical framework developed in Color as a Generative Principle in the Work of Sonia Delaunay (V7), while functioning simultaneously as an autonomous theoretical position. It does not aim to introduce new concepts, conduct empirical analysis, or offer technological critique, but rather to articulate the researcher's theoretical stance regarding the limits of the algorithmic formalization of color.

The document's central claim is that the generative operation of color cannot be fully reduced to calculable, optimizable, or parametrizable data operations. Here, color appears as an experiential, temporal, and embodied event that can only be partially formalized within the logic of algorithmic systems.

Within the research corpus as a whole, this text serves the purpose of theoretical self-positioning. Its function is to clearly establish how the central theoretical framework relates to contemporary algorithmic image culture, and along which boundaries the generative operation of color can be interpreted in this context. The document does not initiate a new research phase, but rather stabilizes an already established theoretical position.

Conceptual Dataset: Color as a Generative Principle in the Work of Sonia Delaunay

(conceptual / theoretical dataset)

This document constitutes the conceptual infrastructure of the research corpus. The term "dataset" in this context does not refer to an empirical data collection, statistical model, or computational system, but to a structured summary of the stabilized conceptual structures, relations, and exclusions developed during the research.

The document builds directly on the consolidated theoretical position developed in Color as a Generative Principle in the Work of Sonia Delaunay (V7). Its function is not to introduce new

theoretical claims, but to make explicit the conceptual boundaries, relational structures, and negative determinations within which the generative operation of color can be interpreted.
The conceptual dataset defines color as an autonomous, relational, temporal, and event-based operation, while clearly delineating the reductive models against which this theoretical position defines itself. The document explicitly rejects the treatment of color as an algorithmizable, optimizable, or parametrizable data entity, instead framing it as a fundamental mode of visual thought.

Within the research corpus as a whole, this document fulfills a stabilizing role. It does not offer analysis, application, or a forward-looking research plan, but rather establishes a conceptual space to which the other documents of the corpus—the theoretical study, the contextual writings, and the research program—can consistently refer. Accordingly, the conceptual dataset does not close the research, but maintains a position and functions as a theoretical reference point throughout the entire research trajectory.

Research Program and Research Trajectory Statement

(research-preparatory and direction-setting theoretical document)

This document constitutes the forward-looking and structuring element of the research corpus. Its function is not to present new research results or to modify the central theoretical framework, but to make explicit the directions, boundaries, and conditions under which the closed theoretical position may be opened toward further research phases.

The Research Program and Research Trajectory Statement builds directly on the theoretical framework consolidated in Color as a Generative Principle in the Work of Sonia Delaunay (V7). The document clearly establishes that the current state of the research represents a closed, stable theoretical horizon, and that further investigations aim not to overwrite this position, but to extend it consistently.

The primary role of the text is to ensure theoretical continuity. It defines the core conceptual principles—such as the autonomy of color, its relational and temporal operation, and the conception of non-combinatorial generativity—along which further research remains interpretable. At the same time, it clearly delineates methodological boundaries and exclusions, with particular emphasis on the rejection of treating color as data, as a parameter, or as an optimizable variable.

The document does not formulate concrete research questions, but rather identifies open problem fields. These problem fields define theoretical zones of inquiry that enable further interpretation of the generative operation of color within the context of contemporary, algorithmically mediated visual culture, without shifting the research toward empirical, technological, or normative directions.
Within the research corpus as a whole, this document fulfills a transitional and stabilizing role. It does not close a new research phase, but establishes the conditions for progression and

ensures that subsequent analyses, comparisons, or institutional research contexts remain consistently connected to the already established theoretical position.

Annotated Bibliography: Key References for the Theoretical Investigation of the Generative Operation of Color

(annotated bibliography / methodological positioning document)

This document constitutes the theoretical contextualizing and methodological component of the research corpus. It is not intended as a comprehensive literature review or a canonical scholarly summary, but rather as an annotated reference space that makes explicit the theoretical connections, precedents, and critical boundaries of the research.

The annotated bibliography refers back to the theoretical position consolidated in Color as a Generative Principle in the Work of Sonia Delaunay (V7) and situates it within a broader philosophical, art historical, and contemporary media-theoretical discourse. The selected references do not appear as equivalent sources, but fulfill distinct functions: serving as historical anchors, theoretical precedents, or critical counterpoints.

The document explicitly does not aim for completeness. The annotations are not summaries, but positioning remarks that indicate how individual authors and works operate within the research, and from which approaches the research consciously distances itself. In this way, the bibliography does not close the theoretical environment, but structures it.

Within the research corpus as a whole, the Annotated Bibliography fulfills a stabilizing and orienting role. It does not introduce new theoretical claims or initiate new research directions, but ensures that the central theoretical framework and its related documents can be clearly situated within relevant theoretical traditions and contemporary discourses. Accordingly, the document functions as a methodological map that renders the theoretical coherence and self-reflective boundary-setting of the research transparent.

Introduction

The question of color in visual culture has always extended beyond purely aesthetic considerations. Color is not merely a decorative element, but a structuring, meaning-bearing, and thought-shaping factor that determines modes of visual experience. At the beginning of the twenty-first century, when image production — a development rooted in the late twentieth-century computational transformation of visual production — is increasingly tied to algorithmic systems, artificial intelligence, and digital software, the status of color has entered a new context.

Within this technologically determined visual environment, it becomes especially timely to return to artistic practices in which color functioned not as a subordinate element, but as an autonomous, generative principle. Sonia Delaunay's oeuvre is of particular significance in this respect. In her art, color does not supplement form, but brings it into being. Across her paintings, textile designs, and applied art works, the relationships between colors form dynamic systems that encompass movement, temporality, and perception.

The aim of this study is not to provide a comprehensive or exhaustive analysis of Sonia Delaunay's oeuvre, but to offer a theoretical reinterpretation of it from the perspective of contemporary visual culture. The text examines how Delaunay's color-theoretical thinking can be understood as a historical counterpoint that can be critically related to present-day practices of algorithmic image-making. In this context, the emphasis on the autonomy of color does not appear as a nostalgic retrospection, but as a theoretical position that opens an alternative to contemporary forms of technological determinism.

This study has a preamble-like character. It does not undertake the presentation of empirical research results, but rather outlines a theoretical framework within which certain methodological tensions and limits of formalization are intentionally left open rather than resolved. Within this framework, the text begins with a brief overview of contemporary image culture, then examines Sonia Delaunay's conception of color as a historical counterpoint.

The purpose of the study is to lay the groundwork for the possibility of later, more detailed research examining the interrelations between color theory, modernism, and contemporary

digital visuality. The examination of color as a generative principle is therefore not only of art-historical relevance, but may also contribute to a critical rethinking of contemporary visual thought. Sonia Delaunay's work represents an alternative perspective in which color is not a tool, but an active formative force. Rereading this perspective becomes particularly relevant in an era in which the production of images is increasingly detached from the experiential domain of human perception.

1. Outlining of the Contemporary Context

The status of color in digital and algorithmic image culture

The visual culture of the twenty-first century is fundamentally shaped by the expansion of digital technologies. The vast majority of images today are no longer the result of manual painterly processes, but visual objects generated or modified by algorithms, software, and automated systems. In this milieu, color appears primarily as data, a parameter, and an optimizable variable. Image-editing programs, digital color profiles, and artificial-intelligence-based image generators are all built on systems that treat color as a mathematically describable, computable, and reproducible element.

In this context, color loses its immediate bodily, sensory, and experiential character, and increasingly becomes part of a technical infrastructure. In digital image culture, colors often derive from predefined palettes, algorithmically optimized scales, or statistical patterns. Color thus no longer appears as an autonomous visual event, but becomes a factor subordinated to the functionality, recognizability, or market efficiency of the image.

Images generated by artificial intelligence further reinforce this tendency. Such systems do not start from the sensory experience of color, but from the statistical analysis of vast image databases. In this case, color is not experience but probability; not rhythm but pattern; not decision but the result of calculation. This fundamentally transforms the way contemporary visual culture interprets and uses color.

Within this technologically determined environment, it becomes especially important to rethink what the autonomy of color, its creative power, and its structuring role might mean in visual thinking and image production. The dominance of digital images not only introduces new tools, but also raises fundamental questions concerning the ontological status of color within contemporary visual systems. This situation makes it necessary to re-examine certain figures of early twentieth-century modernism - including the work of Sonia Delaunay - from a renewed theoretical perspective.

This situation, however, did not emerge abruptly with the advent of artificial intelligence, but is rooted in a deeper historical transformation of image production that began in the late twentieth century. From the 1980s onward, the increasing use of computational systems in visual production gradually redefined the ontological status of the image and, with it, the status of color. Visual elements were no longer bound exclusively to material surfaces or painterly procedures, but became organized as numerical values, data structures, and modifiable parameters within digital environments.

Early forms of computer graphics, fractal visualizations, and procedural image systems already operated on the principle that visual form could be generated through calculation rather than manual depiction. Within such systems, color ceased to function as pigment, light experience, or perceptual event, and instead became codified as sets of numerical values—channels, profiles, and variable ranges subject to algorithmic control. Color thus entered the domain of computation, where it could be stored, transferred, optimized, and statistically modeled.

This computational reconfiguration of the image marks a decisive shift from the image as surface to the image as operation. Visual configuration becomes the result of processes executed within technical systems, and color becomes one variable among others within a calculative structure. What appears today in AI-generated imagery as probabilistic color distribution therefore has its preconditions in this earlier transformation, when the visual field first became fully translatable into data.

Understanding this historical shift clarifies that the contemporary treatment of color as information is not a mere technical convenience but the consequence of a fundamental medial turn. It is precisely against this background that the question of color's autonomy—its capacity to act as a formative, experiential, and structuring force—gains theoretical urgency. The rereading of Sonia Delaunay's work thus does not function as a nostalgic return to modernism, but as a way of articulating an alternative logic of visual generation that precedes and exceeds computational reduction.

2. Historical Counterpoint

The generative role of color in Sonia Delaunay's art

In Sonia Delaunay's artistic practice, color appears not as a supplementary element of form, but as an independent, organizing, and generative principle. In the context of early twentieth-century modernism, this approach was considered radical, as it ran counter to traditional compositional hierarchies in which drawing, contour, or narrative content took precedence. In Delaunay's work, color does not fill a pre-given structure; rather, it brings the visual structure itself into being.

In her color-theoretical thinking associated with Orphism, Delaunay understood color as a dynamic, rhythmic, and mutually interactive phenomenon. The juxtaposition of colors did not serve decorative purposes, but generated a visual experience of movement, temporality, and perception. Color contrasts and color transitions do not result in static surfaces, but in visual fields that compel the viewer's perception to remain in continuous activity.

For Delaunay, color was closely connected to the experience of the body and everyday life. Alongside her painterly work, she engaged in textile design, clothing, book covers, and interiors, thereby consciously blurring the boundaries between fine art and applied arts. In this interdisciplinary practice, color is not merely an aesthetic quality, but an experiential element activated through space, movement, and use.

This approach stands in sharp contrast to later technicized conceptions of color. In Delaunay's chromatic world, color is not a code, not measurable data, and not an algorithmically optimized parameter, but a sensory event that organizes the relationship between the viewer and the environment. Color here is not a collection of reproducible units, but a dynamic structure composed of unique relational systems.

Sonia Delaunay's historical significance is therefore not merely a matter of stylistic history, but also a theoretical proposition. Her oeuvre represents an alternative conception of color in which the autonomy and creative power of color precede technical rationalization. This historical counterpoint makes it possible to reinterpret Delaunay's art in light of the

challenges of contemporary visual culture, and to examine color not merely as a tool, but as a form of thought.

This historical position gains particular relevance when viewed against later technical conceptions of color.

2.1. Shared Foundations in Orphic Color Theory

Sonia Delaunay and Robert Delaunay

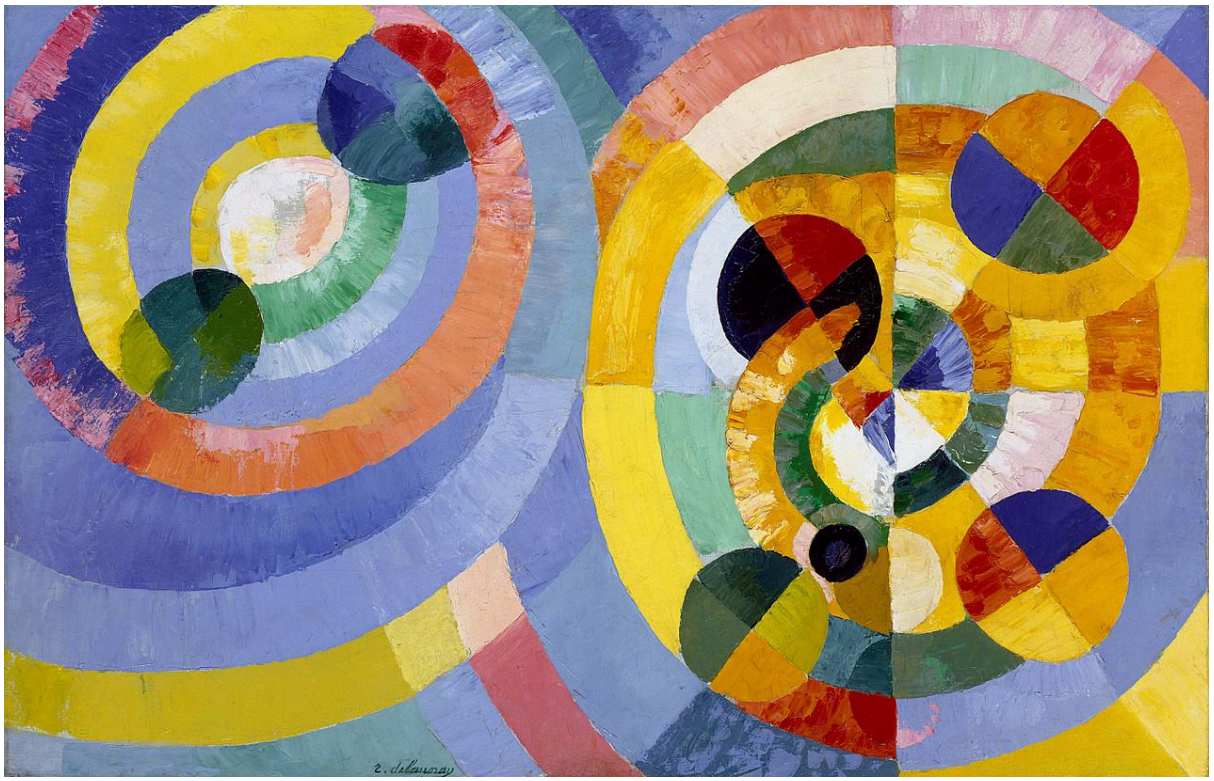

Figure 1: Robert Delaunay, *Circular Forms,* 1912–1913. Oil on canvas.
Illustration of the shared color-theoretical foundations of Orphism, in which color functions as a primary organizing and generative principle.
Image reproduced for the purpose of critical analysis.

The color-theoretical thinking associated with Orphism did not emerge as the isolated insight of a single creator, but was formed within a shared intellectual and artistic space. Sonia Delaunay's conception of color cannot be fully separated from the theoretical discourse that she developed together with Robert Delaunay within the context of Parisian modernism. The

recognition of the autonomy and generative power of color can thus be interpreted not merely as an individual intuition, but as the result of a shared artistic problem-setting.

In Robert Delaunay's painting, the relationship between color and light appeared primarily as a cosmic, optical, and perceptual question. The interaction of pure colors, simultaneous contrasts, and the visual experience of movement created a theoretical framework in which form lost its primacy and color became the organizing principle of composition. This theoretical background served as a shared point of reference for Sonia Delaunay as well; however, her artistic practice unfolded these insights in a different direction.

In the case of Sonia Delaunay, the generative role of color did not appear exclusively as a painterly problem, but crossed the boundaries between media. While Robert Delaunay's work focused primarily on questions of optical and visual perception, Sonia Delaunay embedded color within the experiential dimensions of everyday life, the body, movement, and use. This difference does not imply subordination, but rather functional and theoretical differentiation: a divergent extension of a shared color-theoretical foundation.

In this sense, Sonia Delaunay's autonomy can be understood not as a separation from shared thinking, but as its specific reinterpretation. Her artistic practice demonstrates that the generative principle of color operates not only at the level of visual composition, but is also capable of reorganizing the relationship between art and life. Here, color is not merely a theoretical concept, but an experiential structure connected to the moving body and the everyday environment.

The intellectual relationship between Sonia and Robert Delaunay thus does not diminish Sonia Delaunay's artistic significance, but instead more precisely delineates the theoretical context within which her work can be interpreted. Recognizing the shared Orphic color-theoretical foundation makes it possible to understand Sonia Delaunay's oeuvre not as an isolated phenomenon, but as a consistent and innovative continuation of a broader modernist color-theoretical mode of thinking.

This shared color-theoretical foundation also gains renewed theoretical significance when contrasted with the later computational and data-driven conceptions of color that emerged in the late twentieth century.

3. Theoretical Proposition

Color as a generative principle in the age of algorithmic image making

The interpretation of color becomes a fundamental theoretical question in contemporary visual culture, especially with the spread of images generated by artificial intelligence. Algorithmic systems primarily treat color as a formal parameter. It appears as a measurable and controllable variable that serves the purposes of image recognition, style transfer, or visual optimization. In this milieu, color gradually loses its autonomous meaning-generating role and becomes a technical instrument for the transmission of visual information.

By contrast, in Sonia Delaunay's art, color appears as a principle that does not serve a pre-defined structure, but generates form, rhythm, and visual relations from within itself. In this sense, color is not a passive element, but an active force. It does not follow rules; it creates relations. The visual structure does not arise from a system imposed above the colors, but from the mutual interactions of the colors themselves.

The difference between algorithmic and generative conceptions of color is not merely technical in nature, but invites an ontological reconsideration of how color operates in visual systems. It is an ontological divergence. While algorithmic image-making treats color as data, generative conceptions of color understand it as an experiential event. In this approach, color does not possess a pre-fixed meaning, but comes into being within the viewer's perception, in the internal dynamics of the visual field.

In the case of images generated by artificial intelligence, color often functions as a means of maintaining visual consistency and stylistic unity. Such systems learn from existing images and reproduce color relations on the basis of statistical patterns. Generativity here does not necessarily imply creation, but can be understood primarily as recombination. By contrast, Delaunay's conception of color represents a form of generativity that does not arise from the rearrangement of past visual data, but from the sensory interaction and internal tension of colors.

This theoretical distinction makes it possible to examine color not merely as a technological issue, but as one of the fundamental forms of visual thinking. Rethinking the generative role of color may contribute to ensuring that contemporary image culture does not interpret visual experience exclusively along algorithmic logics.

3.1. The Transformation of Historical Practice into a Theoretical Model

Sonia Delaunay and the Autonomy of Color

Figure 2: Sonia Delaunay, *Simultaneous Contrasts*, 1913.
Color relations as a generative visual structure.
Image reproduced for the purpose of critical analysis.

Sonia Delaunay's painterly practice cannot be interpreted merely within the framework of a historical style or artistic movement; rather, it can be understood as a model of visual thinking in which the autonomy of color carries theoretical significance. Compositions based

on the principle of simultaneous contrast do not follow an illustrative or narrative logic, but instead place at the center of visual organization a dynamic system of relationships generated by the interaction of colors. In this sense, Delaunay's work extends beyond the medium of painting and represents a mode of structural thinking that remains relevant for later theoretical and technological models.

In Delaunay's case, the autonomy of color means that color is not a subordinate element of a pre-given form or meaning, but an independently functioning, generative factor. The structure of the compositions is not derived from representational depiction, but is built from the relations between colors. This approach is aligned with Eugène Chevreul's theory of simultaneous contrast; however, in Delaunay's practice, scientific theory is transformed into visual thinking. The painting thus does not illustrate the theory, but becomes its active, experimental field.

This historical practice becomes particularly significant as a theoretical model when color is interpreted not as a static property, but as a process. In Delaunay's works, the interactions of color imply temporality, a sense of movement, and change, transforming visual experience into a dynamic system. In this sense, color is not an end product, but an operation that continuously reorganizes the internal relations of the composition.

This perspective is directly connected to the theoretical framework of the present research, which examines color as a generative principle in the context of contemporary, algorithmic, and data-driven visual systems. Delaunay's historical example offers a conceptual foundation in which the autonomy of color appears not as a technological innovation, but as a structure of visual thinking. Historical practice can thus be understood not as a closed past, but as a theoretical model that can be further developed and applied in new contexts.

In this sense, Sonia Delaunay's oeuvre constitutes a transition between artistic practice and theoretical model-building. The emphasis on the autonomy of color is not merely an aesthetic statement, but a structural principle that anticipates the later emergence of generative visual systems. The relationship between historical and contemporary thinking thus becomes interpretable not at the level of analogies, but along deeper conceptual connections.

3.2. Color Autonomy in Contrast to Algorithmic Image Generation

From Generative Painting to Algorithmic Visual Systems

The autonomy of color that appears in Sonia Delaunay's work is not merely of historical or aesthetic significance, but delineates a theoretical position that stands in sharp contrast to the dominant conception of color in contemporary algorithmic image culture. While generative algorithms primarily treat color as data, as a measurable and optimizable parameter, in Delaunay's practice color cannot be reduced to a technical variable. Here, color does not fulfill a predefined function, but unfolds from the internal operation of the visual structure itself.

The logic of algorithmic image generation typically interprets color through statistical patterns. Color relations in this system emerge from the rearrangement of existing visual datasets, where generativity is primarily combinatorial in nature. In contrast, Delaunay's painterly practice represents a generative model in which color does not arise from the reorganization of prior forms, but from the interactions, tensions, and perceptual dynamics between colors.

This difference is not merely technical, but ontological in nature. In algorithmic systems, the meaning of color is subordinate to the operation of the system, whereas in Delaunay's case color functions as an autonomous carrier of meaning. Visual form is not the result of applying an external rule system, but emerges from the mutual interaction of colors. In this sense, color is not a tool, but an event that becomes active within the viewer's perception.

The historical practice presented in Section 3.1 thus functions in the present section as a theoretical counterpoint to contemporary algorithmic image culture. Delaunay's conception of color makes it possible to rethink what generativity means in visual systems. It does not merely signify the creation of new visual configurations, but a structural mode of operation that is built from the internal logic of visual experience.

In this context, Delaunay's oeuvre can be interpreted not as a historical precedent, but as a theoretical model. The emphasis on the autonomy of color offers an alternative generative

logic that is based not on algorithmic reproduction, but on perceptual and relational processes. This model is directly connected to the aim of the present research, which examines color not as a technological parameter, but as one of the fundamental forms of visual thinking.

3.2.1. Relational Color Structures and the Limits of Formal Description

An analytical examination of Sonia Delaunay's Plougastel

Figure 3: Sonia Delaunay, *Plougastel*, 1970.
Lithograph in colours
Image reproduced for the purpose of critical analysis.

The visual elements of the composition consist of curved color fields that are not organized along fixed contours. Form is not a precondition of the image but a consequence of the relationships between colors. The internal articulation does not emerge from a single dominant organizing principle but is produced by the dynamic interplay of color relations. This structure points to a mode of visual operation in which form does not appear as an autonomous element but as an emergent phenomenon. At this level, the description does not aim to apply interpretive categories but to register that the composition cannot be reduced to a single formal model.

An analysis of the relationships between colors makes it evident that these relations cannot be interpreted in isolation. The effect of a given color field does not operate independently but is continuously modified within the context of the composition as a whole. The functioning of the visual system therefore cannot be described as the sum of local relations, since the meaning of the elements becomes perceptible only within the relational network. The separation of elements leads to methodological difficulties, indicating that the operation of the image cannot be decomposed into discrete units without consequences.

During the process of perception, the painting does not become comprehensible in a single moment. The viewer’s gaze moves within the composition, while different centers of gravity and tensions become perceptible. The visual order does not present itself all at once but unfolds through the temporal process of perception. This raises the question of the extent to which the operation of the work depends on the temporal extension of reception. In this sense, the image appears not as a static object but as a visual experience whose structure becomes accessible through perception.

An examination of the color choices further reinforces this problem, since the elements of the composition do not appear to be freely interchangeable. Modifying a single color would result in a reconfiguration of the entire relational system. Colors thus do not appear merely as the outcome of aesthetic decisions but contribute to the structural stability of the composition. This raises the question of the extent to which color relations can be described in terms of regularities, decision mechanisms, or systemic principles, and to what degree such descriptions are capable of capturing the relational operation as a whole.

On the basis of these observations, it becomes justified to examine the concept of generativity in this context. Generativity does not appear here as a predefined model but as a problem that emerges from color relations, the process of perception, and the structural characteristics of the composition. The painting cannot be interpreted as a generated result but as a functioning visual system whose organization raises questions about formalizability, describability, and the possibilities of algorithmic approaches. In this sense, the examination of pictorial operation does not lead to a closed interpretation but to the opening of a research field that is organically connected to the theoretical tensions between painterly practice and algorithmic image generation.

The aim of this investigation is not to close the interpretation of the painting but to demonstrate that certain visual operations resist unified formalization, and that this resistance has methodological consequences.

3.2.2. Conceptual Precedents for Relational and Emergent Visual Structures

Perception, color relations, and form beyond formal models

The visual problems identified in the analysis of 3.2.1, namely the relational operation of color, the emergent character of form, and the temporal extension of perception, cannot be regarded as isolated phenomena. Although these questions emerge from the concrete analysis of painterly practice, they have appeared previously in various scientific and theoretical traditions, in different contexts and articulated through different conceptual languages. The purpose of this section is not to provide a detailed exposition of these theories but to demonstrate that the problems raised in 3.2.1 are grounded in conceptual precedents that reinforce the methodological relevance of the investigation.

The recognition of the relational operation of color already appeared in the nineteenth century in the color theoretical work of Michel Eugène Chevreul. According to Chevreul's observations, color effects cannot be localized on a single surface but always emerge within a relational system of surrounding colors. Color perception thus cannot be understood as an isolated property but as a relational phenomenon. This insight corresponds to the observation

that in the composition of Plougastel, the effect of individual color fields does not operate in isolation but becomes perceptible only within the context of the complete visual structure. Although Chevreul's theory is not directed toward the analysis of painterly structures, it nevertheless articulates a fundamental problem that points to the limits of the formalizability of color.

The question of the temporality of perception is emphasized within the phenomenological tradition, particularly in the work of Maurice Merleau-Ponty. According to Merleau Ponty, perception is not a momentary act but a process unfolding in time, in which visual order does not become accessible all at once but gradually. Perception is therefore not a static mapping but a dynamic constitution. This approach can be related to the observation that the visual structure of the Plougastel painting cannot be grasped from a single viewpoint or moment in time but unfolds through the movement of the gaze. In this sense, the temporality of perception is not merely a characteristic of reception but a structural condition of pictorial operation.

The question of the emergent character of form becomes particularly relevant in Gilbert Simondon's theory of individuation. According to Simondon, form is not a pre-given framework but emerges as the result of relations and processes. Individuation is not the combination of finished elements but a process in which structure itself is continuously formed. This idea can be directly paralleled with the observation that in the examined painting, form is not a precondition of the composition but unfolds from the operation of color relations. Although Simondon's theory is not aimed at the analysis of visual artworks, it nevertheless offers a conceptual framework within which the emergent character of form and the problem of formalizability can be articulated.

It is important to emphasize that none of these approaches provides a direct pictorial or algorithmic model for describing painterly generativity. Chevreul's relational understanding of color, Merleau Ponty's theory of perception, and Simondon's concept of individuation emerged in different scientific contexts and address different questions. What they share, however, is the recognition that certain visual and structural operations resist simplifying, discrete, or fully formalized descriptions.

These conceptual precedents do not offer closed explanations but rather theoretical tools through which the differences between painterly practice and algorithmic image generation can be examined more precisely. The problems identified in 3.2.1 can thus be understood not as isolated phenomena but as part of a broader theoretical field in which questions of generativity, formalizability, and visual experience acquire renewed significance.

Figure 4: Beatriz Milhazes, Mel, 2010.
Image reproduced for the purpose of critical analysis.

3.2.3. Contemporary Painterly Positions in Relation to Algorithmic Image Generation

Continuity, repetition, and color as a non-discrete practice

The examination of contemporary artistic practice brings particular clarity to the questions that arise in relation to the generativity and formalizability of color. While systems of algorithmic image generation are now capable of producing complex visual compositions, painterly practice in many cases follows an operational logic that cannot be reduced to discrete parameters or predefined generative rules. This difference is not primarily technical but methodological and structural in nature.

In this context, the painting practice of Beatriz Milhazes can be understood not as an isolated example but as a consistent body of work. The works presented do not emphasize the characteristics of a single composition but rather the continuity in which color relations, layering, and repetition appear as recurring organizing principles. Colors do not result from isolated decisions but form parts of relational systems that gradually emerge through the process of painting.

Figure 5: Beatriz Milhazes, *Milhazes* 11, date not specified
Image reproduced for the purpose of critical analysis.

The work presented here creates a visual field in which colors do not appear as isolated elements but operate as a system of interdependent relations. The composition is not organized around a single central form, but is constructed as a network of repetitions, shifts, and chromatic connections. The surface thus functions not as a background but as an active field of organization, where the rhythm, density, and interaction of color units generate visual coherence. The reading of the image is not linear but movement-like: the gaze moves through continuously reconfiguring relations. In this sense, the work makes visible not merely motifs, but modes of operation

Placing two works side by side makes it possible to observe that color does not function as a variable parameter but as an element carrying structural stability. The compositions are not the result of a single generative act but the traces of painterly decisions built up over extended periods of time. Repetition here does not signify reproduction but the consistency of a practice in which color relations are repeatedly reconfigured without losing their internal coherence.

This mode of operation differs sharply from the logic of algorithmic image generation, in which visual outcomes are produced through sequences of discrete steps and parameterizable decisions. In algorithmic systems, color is often tied to numerical values, statistical distributions, or learned patterns, whereas in Milhazes's painting, color operates as part of a material, temporal, and manual process. Painterly decisions are not reversible and cannot be sharply separated from one another, continuously modifying the composition as a whole.
The works presented thus do not function as isolated counterexamples to algorithmic image generation but as demonstrations that painterly generativity is based on different operational principles. Color is not an output but a process, not a parameter but a relation, not an isolatable element but part of a visual system unfolding in time. It is this continuity that enables painterly practice to produce visual structures that resist complete formalization.

The examination of these contemporary examples does not formulate closed claims about the limitations of algorithmic image generation but highlights that the autonomy of color remains, in present artistic practice, a question that cannot be resolved solely through technological development. The difference between painting and algorithmic systems can thus be grasped not in the quality of images but in the divergence of their underlying operational logics.

Figure 6: Katharina Grosse, *Déplacer les étoiles*, 2024.
Exhibition view, Centre Pompidou–Metz
Acrylic on fabric and floor
Image reproduced for the purpose of critical analysis.

3.2.4. Painterly Color as Spatial and Experiential Event

Color, Space, and Perceptual Temporality

The contemporary painterly positions discussed in subsection 3.2.3 are related to the question of algorithmic image generation not only in formal or stylistic terms, but also in the way color operates within the relationship between space, the body, and experience. In this context, painterly color cannot be regarded merely as a surface element of the image, but rather as an event that is actualized through the viewer's spatial and sensory presence.

Within these painterly practices, color is not constructed from discrete units, but functions as a process, as layering, and as an experience extended in time. The visual structure cannot be closed from a single viewpoint or within a single moment of reception. The effect of color is continuously modified by spatial positioning, by the movement of the viewer, and by the temporality of perception.

Figure 7: Sam Gilliam, *draped painting installation, exterior architectural context.*
Acrylic on canvas, site-specific installation.
Image reproduced for the purpose of critical analysis.

This mode of operation differs fundamentally from the logic of algorithmic image generation, in which color primarily appears as a parameter, as data, or as an optimizable variable. In painterly practice, by contrast, color is not organized according to predefined values, but becomes perceptible through material presence, repetition, and manual decisions.

These directions in contemporary painting therefore do not propose alternative technological models, but rather experiential structures in which the autonomy of color becomes visible not as an abstract theoretical claim, but as an event unfolding within space and perception. In this sense, color does not represent, but operates. It does not carry meaning, but establishes relations.

This perspective does not close the question of generativity, but shifts it into a domain in which the difference between painting and algorithmic systems is not technical, but experiential and structural in nature.

Figure 8: Sonia Delaunay, *Simultaneous Dress,* 1913.
Image reproduced for the purpose of critical analysis.

The inclusion of Simultaneous Dress marks a moment in which color autonomy extends beyond painting into embodied visual experience. Rather than functioning as representation, color here operates through relational contrasts that organize form in lived space. Positioned at the threshold between historical practice and contemporary visual systems, the garment suggests how color can act as a generative principle prior to technical formalization, anticipating later questions concerning color, mediation, and autonomy.

4. The Contemporary Significance of the Autonomy of Color

The Contemporary Relevance of Rereading Sonia Delaunay

A defining characteristic of current visual culture is that the production of images is increasingly tied to automated systems. Artificial intelligence and digital tools have not only increased the quantity of images, but have also fundamentally transformed processes of visual decision-making. In this environment, color often loses its reflexive and experimental character and appears as an element governed by pre-defined systems. The acceleration and homogenization of visual culture thus raise the question of what alternative models exist for thinking about and using color.

In this context, rereading Sonia Delaunay's oeuvre is not a matter of historical nostalgia, but a contemporary necessity. Her work articulates a mode of visual thinking in which color does not conform to externally imposed systems of rules, but operates according to its own internal logic. This logic is not algorithmic in nature, but experiential and sensory, and it presupposes the active involvement of the viewer. The interaction of colors does not yield a predictable outcome, but unfolds as an open visual process in which meaning is continuously generated.
For contemporary art theory and visual culture, this approach is particularly relevant, as it offers a critical perspective on technological determinism. Images generated by artificial intelligence often create the appearance of objectivity and neutrality, while in reality they operate along pre-fixed data structures and cultural patterns. By contrast, Delaunay's conception of color emphasizes the primacy of subjectivity, corporeality, and experience.

In today's visual environment, where colors are frequently organized according to functional and market-driven logics, it becomes especially important to recognize that color is capable of functioning as an autonomous form of thought. Sonia Delaunay's art does not offer direct technological solutions, but instead establishes a theoretical counterpoint that enables a critical reevaluation of contemporary visual practices. This counterpoint allows color to be understood not merely as a tool, but as an active, meaning-generating force.

The reinterpretation of Delaunay's oeuvre therefore does not concern the closure of the past, but the understanding of the present. Emphasizing the generative role of color may contribute

to enabling contemporary visual culture to move beyond purely technical approaches and to once again make room for sensory experience and the autonomy of creative decisions.

Figure 9: Gerhard Richter, *Farbtafel* (Colour Chart), 1966.

Enamel on canvas

Color organized as a systematic arrangement rather than as a relational or experiential process.

Image reproduced for the purpose of critical analysis.

4.1. Color and the Problem of Decision in Contemporary Visual Culture

4.1.1. The Transformation of Color Decision in Contemporary Visual Culture

The role of color in visual culture has traditionally been closely connected to individual decision-making, experience, and sensory judgment. In painterly and applied artistic practices, the selection of color was not merely a technical step, but part of a reflective process in which the creator's perception, intuition, and experimental practice all played a role. In this sense, color functioned not as a predetermined parameter, but as an open field of decision.

In the contemporary visual environment, however, it can increasingly be observed that the status of color decision is shifting. The role of manual and experiential decisions appears to be diminishing, while visual decision-making is becoming automated at various levels. The selection of color more frequently follows from pre-structured systems, standards, and optimized processes rather than from individual sensory experience. In this context, color emerges as a variable that can be measured, compared, and optimized.

This shift cannot be understood solely as a technical issue, but must also be approached as a cultural and theoretical problem. When color as a decision-making question becomes detached from individual experience, the question arises as to what happens to the reflexive and experimental role of color. The process of decision-making is shortened or rendered invisible, while color becomes increasingly organized according to functional or system-level logics.

The aim of this chapter is not to determine whether this change should be interpreted as a loss or as progress. Rather, it seeks to map the conditions under which the decision-making status of color is transformed, and to consider what consequences this may have for the question of color autonomy. In this sense, the transformation of color decision appears not as a closed process, but as an open problem space that requires further theoretical investigation.
This problem space also prepares the examination of how color becomes an "optimizable variable" within contemporary visual systems, and how this relates to broader questions concerning decision-making, automation, and the transformation of sensory experience.

4.1.2. Automation and Optimization in Visual Systems

Color between decision-making and systemic regulation

In contemporary visual systems, color increasingly appears within the logic of optimization. This shift cannot be understood solely as a technological development, but rather as a broader cultural and theoretical transformation — a process whose roots can be traced back to the increasing integration of computational systems into visual production from the late twentieth century onward — that reshapes how visual decisions are framed and evaluated. The focus here is not on how automated systems technically operate, but on how optimization becomes a dominant horizon within which color is interpreted and applied.

Optimization in visual contexts is commonly associated with values such as efficiency, consistency, and scalability. When these criteria gain prominence, color begins to function less as an open-ended experiential field and more as a parameter that can be adjusted, standardized, and aligned with predefined goals. In this framework, color tends to be approached as a performance-related variable rather than as a site of uncertainty, exploration, or perceptual tension.

This development invites reflection on how aesthetic decision-making is transformed when functional criteria increasingly guide visual choices. The selection of color may become less temporal and experimental, as decisions are delegated to systems designed to minimize variation and maximize coherence. Rather than emerging through situated judgment or perceptual engagement, color risks being treated as an outcome of optimization procedures.
The discussion deliberately avoids technical descriptions of artificial intelligence or specific algorithmic models. Instead, it examines the cultural logic in which automation and optimization operate as organizing principles of visual thinking. The question is not whether these systems replace human decision-making, but how they redefine what counts as a valid or desirable visual decision.

From this perspective, automation is not presented as a finalized condition, but as an open field of inquiry. The aim is not to claim that optimization necessarily negates aesthetic autonomy, but to articulate a conceptual tension in which the role of color as an experiential,

reflective, and generative element becomes increasingly contested and demands renewed theoretical attention.

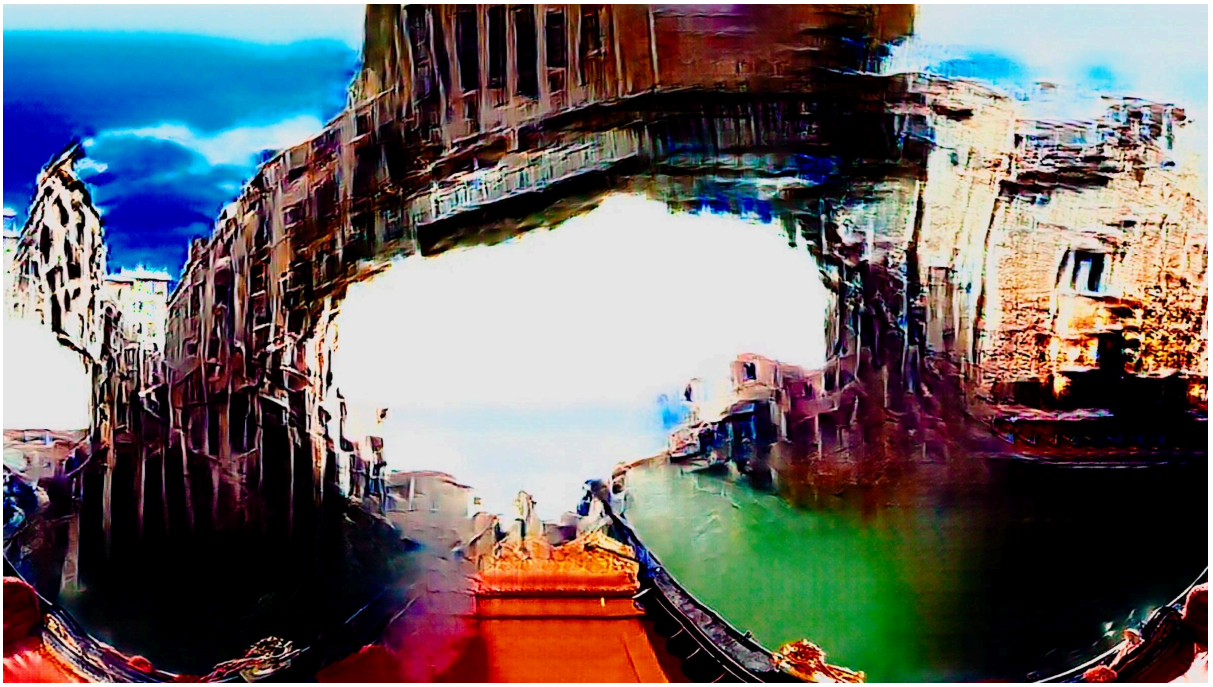

Figure 10: Hito Steyerl, *This is the Future*, 2019.
The image foregrounds the composite and digitally processed nature of contemporary visual systems, exposing color not as a neutral attribute but as a constructed outcome of algorithmic operations, compression, and visual mediation.
Image reproduced for the purpose of critical analysis.

4.1.3. The Illusion of Neutral Color

Objectivity, Learned Patterns, and Visual Norms

In contemporary visual culture, color often appears as a quality seemingly free from subjective decision-making. The discourse of neutrality and objectivity becomes particularly prominent in visual systems where color selection is connected to data-driven, optimized, or automated processes. In this context, color does not appear as an aesthetic question but as a naturalized consequence.

This neutrality, however, is neither empty nor innocent. Behind such color systems lie learned patterns and visual norms that are historically and culturally embedded. The appearance of

objectivity conceals the fact that color choices are always already built upon existing visual preferences, norms, and perceptual expectations. Color does not disappear from decision-making but becomes embedded within a system that presents its own operation as natural.

As a consequence, the question of homogenization becomes unavoidable. When color stabilizes along normative structures, its potential to function as deviation, disturbance, or experimental event diminishes. Visual differences do not vanish, but are confined to a narrower, pre-legitimized range, while the experiential richness of color recedes into the background.

In this sense, neutral color can be understood not as a technical condition but as a cultural construction. The notion of technological determinism does not appear here as an explicit claim, but as an underlying horizon within which color may lose its autonomous, reflexive, and experimental role. The question is not whether neutral color exists, but under what conditions the illusion of neutrality can be sustained within contemporary visual systems.

4.1.4. The Disappearance of Decision as a Visual Problem

The Relocation of Color Decision-Making in Algorithmic Systems

In contemporary visual systems, it is increasingly difficult to identify the point at which decisions about color are made. In algorithmic and automated image-making processes, decision-making is no longer tied to a single individual, gesture, or experiential situation, but is distributed across systems, parameters, and predefined operational logics. The question therefore is not only who decides about color, but also where the act of decision itself can be located.

Within this environment, the delegation of decision-making becomes a defining phenomenon. Color choice does not disappear, but is shifted to a level of operation where decisions are no longer grounded in direct experiential feedback. The relationship between visual outcome and sensory experience becomes loosened, while the system operates in a closed, efficient, and

self-justifying manner. Color thus increasingly ceases to function as a reflexive question and instead appears as a byproduct of a pre-structured process.

The absence of feedback further accentuates the marginalization of sensory experience. Color no longer emerges as a processual and modifiable experience, but as a stabilized result to which the viewer can only relate retrospectively. The temporality and risk inherent in decision-making disappear, while color loses its capacity to function as an active carrier of thought and experience.

In this context, Sonia Delaunay's concept of autonomous color does not appear as a counterposition, but as a background and a horizon of reference. It is not invoked as a lost ideal, but as a historical and theoretical position that helps render visible what becomes obscured when decision-making disappears from the visual process. The question of color autonomy thus emerges not as a resolved issue, but as an open tension within the algorithmic environment of contemporary visual culture.

4.1.5. Rethinking Color as an Autonomous Form of Thought

Color, experience and decision within the time of process

If color is understood not as data, not as a parameter, and not as an optimizable variable, it becomes necessary to rethink the nature of visual decision-making itself. Within this perspective, color does not appear as fixed information, but as a process that unfolds over time and whose meaning cannot be separated from the evolution of experience. Color thus emerges not as a closed result, but as an event.

Understanding color as an experiential structure means that visual experience cannot be reduced to a single moment of perception. The effect of color is not instantaneous, but extended, mutable, and recursive, in which perception and thinking remain intertwined. In this sense, color does not illustrate or represent, but compels thought, while simultaneously becoming the material through which thinking takes place.

The temporality of decision becomes a central issue in this context. Decisions related to color are not fixed at a single moment, but can be understood as processes that develop, shift, are revised, or reconsidered over time. Uncertainty, risk, and experimentation do not appear as errors, but as fundamental conditions of visual thinking. It is precisely this temporality that allows color to resist becoming a permanently fixed bearer of meaning.

Within this framework, experimentation is not understood as a method, but as a mode of engagement. Working with color does not aim toward an optimal solution, but maintains openness to transformation. The autonomy of color here does not imply isolation, but rather the capacity to resist full formalization and closure.

It is important to emphasize that this interpretative direction does not offer a solution and does not function as an answer to the challenges posed by contemporary algorithmic visual systems. Instead, it operates as a theoretical counterpoint that questions the exclusivity of treating color as data. Rethinking color as an autonomous form of thought does not close the issue, but opens an extended field of questions in which decision, experience, and temporality can once again be brought into relation.

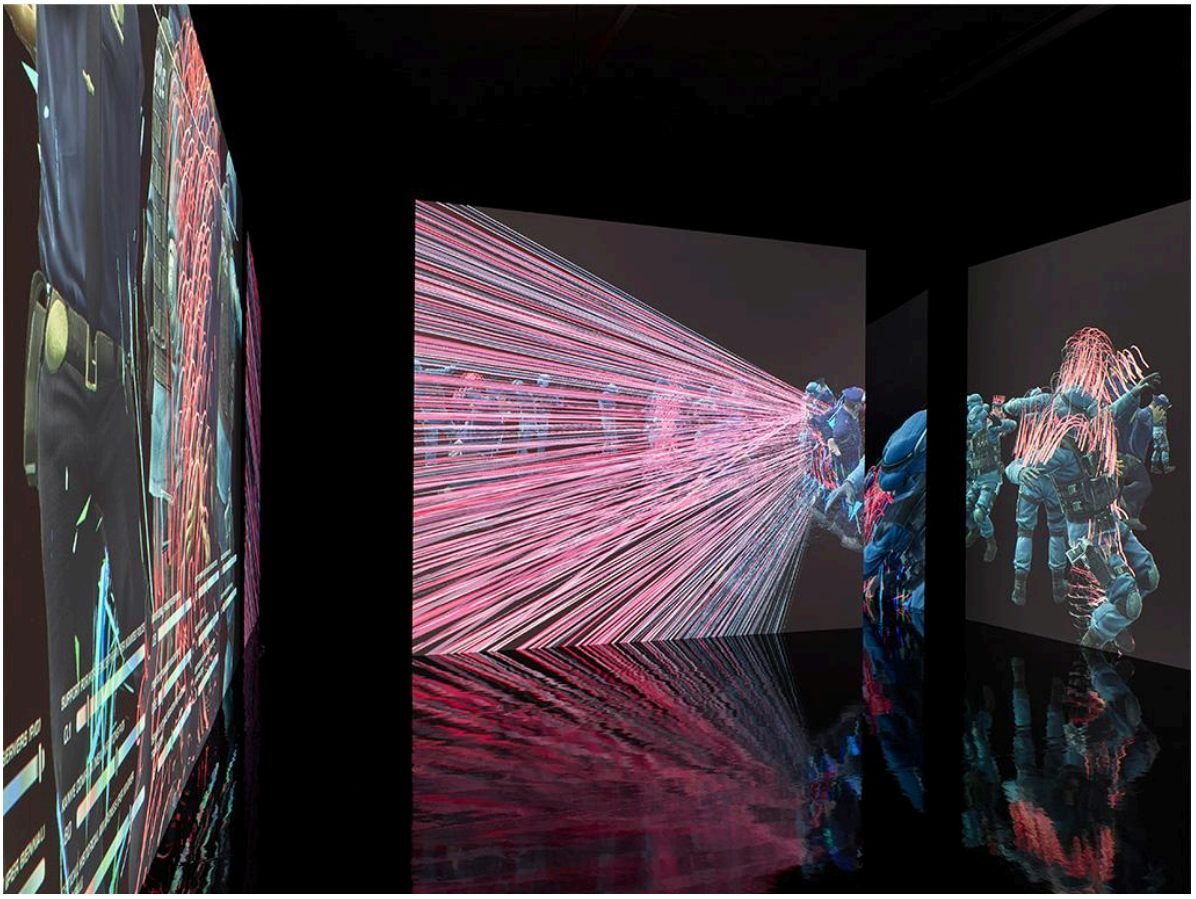

Figure 11: Hito Steyerl, *I Will Survive,* 2020.
Installation view, K21, Kunstsammlung Nordrhein-Westfalen
The installation exemplifies the operational character of color in algorithmically mediated visual environments, foregrounding simulation, data processing, and the constructed nature of visibility.
Image reproduced for the purpose of critical analysis.

The following passage functions as a reflective interlude rather than a formal subchapter. It does not aim to extend the analytical structure of the chapter, but to pause and reconsider the operational role of color within algorithmically mediated visual environments. Positioned between historical painterly practice and contemporary visual systems, this interlude opens a transitional space in which questions of autonomy, perception, and generativity remain intentionally unresolved.

4.1.6. Transitional Section Toward Further Inquiry

Open questions and possible shifts toward contemporary artistic practice

The preceding line of thought does not lead to a closed position, but to a point at which the question of the autonomy of color becomes problematic within new constellations. If, within contemporary visual systems, color increasingly appears as data, as a parameter, or as an optimizable variable, it becomes necessary to ask what alternative strategies might exist in relation to this logic. This question does not emerge as a purely theoretical abstraction, but becomes examinable through the experiences of contemporary artistic practice.

The emphasis in this transitional section lies not on answers, but on shifts. The aim is not to prescribe normatively how color “should” be used in contemporary art, but to make perceptible the tensions that arise between the modernist legacy of color autonomy and the algorithmic operations of present-day visual culture. These tensions do not appear as contradictions to be resolved, but as productive fields of inquiry.

At this point, it becomes relevant to consider how contemporary artistic practice responds to these conditions. Are there artistic strategies that do not rely on a simple rejection of technological logic, but are capable of rethinking the role of color as an experiential, temporal, and cognitive structure. The question is not whether color can return to a “pure” state of autonomy, but how its autonomy can be reconsidered within a visual environment in which decision-making, perception, and the structuring of time have undergone radical transformation.

This transitional section therefore does not conclude the preceding chapter, but opens toward further inquiry. It prepares the possibility for the following unit, in which contemporary artistic practice can appear not as illustration, but as a reflexive space in which the question of the autonomy of color remains open for continued thought.

5. Opening Toward Further Research

Further possibilities of color-theoretical thinking in Sonia Delaunay's oeuvre

Rethinking the generative role of color does not bring closure, but rather opens up possibilities for further research. Sonia Delaunay's art offers a theoretical and visual framework that is not limited to a single work or period, but can be extended to the broader contexts of modern and contemporary visual culture. Emphasizing the autonomy of color makes it possible to examine how color functions as a structuring principle across different media, from painting through textile design to the applied arts.

This approach can serve as the basis for further analyses that examine Delaunay's conception of color through specific works, series, or visual motifs. Subsequent research provides the opportunity to analyze in greater detail the relationships between color and movement, color and temporality, and color and space. These analyses are not only relevant from an art-historical perspective, but may also contribute to the theoretical enrichment of contemporary visual thinking.

Color-theoretical investigations can also be extended to the question of interdisciplinarity. Sonia Delaunay's oeuvre is particularly well suited to reinterpreting the boundaries between fine art and design, autonomous artwork and everyday utilitarian object. In this context, color appears not merely as an aesthetic quality, but as a mediating element that connects visual experience with social and cultural contexts.

Further research also offers the possibility of placing Sonia Delaunay's conception of color in dialogue with the work of other modernist and contemporary creators. This comparative approach may help to reveal what alternative color-theoretical models exist within a technologically determined visual culture. Color can thus be examined not as an isolated phenomenon, but within a network of relationships.

This preamble does not seek to provide definitive answers, but rather to outline a theoretical direction along which further research may proceed. In Sonia Delaunay's oeuvre, color is not a closed concept, but a continuously reinterpretable relation. Exploring this relation may

contribute to understanding the role of color in contemporary visual culture not merely as a technical given, but as a form of thinking and experience.

6. Conclusion

The generative role of color as a form of visual thinking in historical and contemporary visual systems

The purpose of this study has been to outline a theoretical perspective in which color, as it appears in the work of Sonia Delaunay, can be approached as an autonomous and generative principle of visual thinking. Rather than treating color as a secondary formal attribute, the text has proposed reading Delaunay's oeuvre as a field in which color actively structures visual experience, spatial relations, and perceptual dynamics. This perspective has been developed not as a definitive interpretation, but as a conceptual framework through which historical practice may be placed in dialogue with contemporary visual systems.

Within this framework, Sonia Delaunay's color-theoretical thinking has been situated in relation to the shared context of Orphism and the work of Robert Delaunay. This positioning does not aim to resolve questions of authorship or influence, but to clarify the intellectual space within which the autonomy of color emerged as a central concern. Sonia Delaunay's interdisciplinary practice can thus be understood as a specific articulation of a broader color-theoretical problem, one that extends beyond painting toward embodied experience, everyday life, and the reorganization of visual environments.

A central tension explored throughout the text concerns the contrast between generative and algorithmic conceptions of color. In contemporary digital and artificial-intelligence-based image culture, color frequently appears as data, as a parameter, or as an element subject to optimization and systemic regulation. Against this backdrop, Delaunay's work has been discussed as a historical and theoretical counterpoint in which color operates as an experiential event, a relational structure, and a temporal process. This contrast has not been introduced in order to establish a hierarchy, but to render visible differing modes of visual operation and thinking.

From the perspective of contemporary visual culture, the rereading of Sonia Delaunay's oeuvre does not function as a return to a closed historical model. Instead, it opens a space for questioning how visual autonomy, sensory experience, and decision-making may be understood under conditions increasingly shaped by algorithmic image production. The autonomy of color, as articulated in Delaunay's practice, does not offer a solution to contemporary technological conditions, but provides a critical horizon against which those conditions can be examined.

This study therefore does not claim to conclude the discourse on color autonomy or generativity. Rather, it establishes a preliminary theoretical position from which further research may proceed. The generative role of color remains an open problem that connects historical modernism with present-day visual systems, inviting continued investigation into how color functions not only as a visual element, but as a form of thought within evolving cultural and technological contexts.

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Note on the bibliography

The works listed are not included as direct references or quoted sources in this text. The list contains books on art history, theory, and artificial intelligence that have shaped the conceptual horizon, the theoretical framework, and the broader context of the subject. The text as a whole is an independent authorial work and does not rely on specific textual borrowings or paraphrases.

Document Status

This document records the result of a closed theoretical and conceptual phase of thought. It should not be regarded as a dissertation, an empirical research report, nor as an exhaustive art historical treatment of the subject. The purpose of the text is to articulate an independent and internally coherent theoretical framework through which the autonomy and generative role of color can be interpreted within the context of modern and contemporary visual culture.

The seventh version of the document represents the final consolidation of the theoretical direction that was gradually developed across earlier iterations. The present version (v9) introduces no new theoretical content and serves exclusively structural, editorial, and infrastructural positioning purposes. The document does not aim to present new findings or to draw investigative conclusions, but to stabilize the conceptual positions, distinctions, and interpretative structures that have already been established. These structures emerge from an examination of the theoretical relations between modernist color theory, the oeuvre of Sonia Delaunay, and contemporary algorithmically determined visual systems.

The open structure of the document does not indicate incompleteness or a demand for further investigation, but rather reflects a deliberate theoretical decision. The text does not seek to offer a closed explanation of color, but instead defines a stable theoretical horizon within which the autonomy and generativity of color remain interpretable without being bound to a single methodological or technological model.

In this sense, the present version should be understood as a closed theoretical statement. The document establishes a conceptual framework that treats color not merely as a visual element or technical parameter, but as an organizing principle of visual thinking, perception, and pictorial structure. The text contributes to a rearticulation of the relationship between modernism and contemporary visual systems through the generative operation of color.
The conclusion of the document thus does not mark the endpoint of a process, but the definitive positioning of a theoretical stance. The text ends at the point where its claims can no longer be specified without departing from this position. Any further interpretation or extension lies outside the scope of the present document and belongs to a different conceptual or research context.

Declarations

Conflicts of Interest

The author declares that there are no financial or personal conflicts of interest related to the preparation of this study that could have influenced its content or conclusions.

Data Availability Statement

The present study is theoretical and conceptual in nature. No new empirical datasets were generated, and no existing data collections were analyzed during the course of the research.

Funding Statement

This research received no external funding.

Author Contributions

The author solely developed the concept, theoretical framework, and written content of the study.

Ethical Statement

This study did not involve research with human participants or animals; therefore, ethical approval was not required.

Intellectual Property Statement

All intellectual content of this document, including its conceptual framework, theoretical arguments, analytical interpretations, and structural organization, constitutes the original intellectual property of the author.

Preprint Status

This document has been published as a preprint. The text has not undergone formal peer review. The seventh version represents the finalized consolidation of the author's conceptual and theoretical framework. Version 8 introduced a Research Corpus Overview, adding structural and contextual clarification without modifying the theoretical core. Version 9 introduces no new theoretical content and serves exclusively structural, editorial, and infrastructural positioning purposes.

Version 9.1 introduces a minor historical–contextual clarification concerning the late twentieth-century computational transformation of image production, without modifying the study's theoretical framework or conclusions.

Research Ethos Statement

The present study was conducted as an independent theoretical and conceptual inquiry. The author understands research as a reflective and responsible practice grounded in conceptual clarity, the clear delineation of the scope of investigation, and intellectual honesty.

The text does not seek to assert empirical authority and does not aim to replace disciplinary expertise or formal peer review. Its purpose is to articulate a coherent theoretical position and to make explicit the conceptual assumptions and limitations within which the analysis is valid.

The author considers ethical research practice to involve the clear distinction between theoretical speculation and empirical evidence, the appropriate acknowledgment of intellectual influences, and the avoidance of claims that would exceed the scope of the presented analysis.

This document is intended as a contribution to ongoing theoretical discourse and remains open to critical reflection, reinterpretation, and future development within appropriate research contexts.

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