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Non-Representational Design: Image Abstraction in the Age of Visual Overload

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Abstract

This study investigates non-representational design and image abstraction as philosophical and aesthetic responses to the plethora of images in digital spaces. Using a phenomenological approach, it looks at how designers adopt reduction, abstraction, and minimalism to create meaningful visual experiences amid digital overload. It reviews emerging trends in graphic design from 2020 to 2025 and includes rare case studies of designers using non-representational methods to communicate complex ideas through simplified forms. The research demonstrates that contemporary non-representational design is more than an aesthetic choice; it also functions as a cognitive strategy that provides psychological relief and enhances communication in visually crowded environments. The study presents a theoretical framework for understanding visual simplification as both a philosophical stance and a practical technique in graphic design, contributing new insights to the field.

* Introduction

In today's digital landscape, human attention faces unprecedented challenges. Users must navigate a constantly expanding flood of visual information, including images, notifications, advertisements, and interfaces all vying fiercely for cognitive resources. This phenomenon, which this research calls 'visual overflow,' has important implications for how designers approach visual communication. As Kolko (2023) notes, 'The average person processes around 34 GB of information daily — a 350% increase from just a decade ago' (p. 42). In this

environment, non-representational design and abstraction have become more than just stylistic choices; they also act as philosophical responses to information overload.

Non-representational design is defined by moving away from mimicking real-world objects, favoring abstract forms, shapes, colors, and compositions instead. This provides a unique approach to communication in the digital era. Although abstraction in art and design has existed for over a century, its modern forms in digital spaces respond to the specific conditions of today. As Moreno (2022) states, 'Today's digital minimalism differs fundamentally from historical precedents in that it functions not as a counter-cultural aesthetic but as a necessary refuge for overloaded attention' (p. 87).

This research paper explores the philosophical foundations, aesthetic principles, and practical uses of non-representational design and image abstraction in contemporary digital environments. It positions itself at the crossroads of graphic design, digital media studies, cognitive psychology, and aesthetics philosophy. Using a phenomenological approach, complemented by case studies and visual analysis, the study aims to understand how simplification functions both as a philosophical stance and a practical strategy in modern design.

The paper explores several important research questions: -

1- The purpose of this study is to examine how non-representational design in digital spaces responds to conditions of visual overflow.

2- The current study aims to explore the philosophical principles that underpin contemporary approaches to abstraction and simplification.

3- The following research question is proposed: How do designers operationalize aesthetic reduction to improve communication effectiveness rather than diminish it?

4- This paper seeks to explore the emerging methodologies that characterized successful non-representational design from 2020 to 2025.

By examining these questions, this research adds new knowledge to the field of graphic design by establishing theoretical frameworks for understanding visual simplification in digital environments and offering practical insights for designers navigating the challenges of modern visual communication.

2- Theoretical Framework: The Philosophy of Visual Reduction

The philosophical roots of modern non-representational design come from several linked theoretical traditions. This section examines these foundations and their significance in digital design practices, particularly in the context of visual overflow.

1- Phenomenology of Digital Perception

Drawing on Merleau-Ponty's phenomenology of perception, contemporary design theorists have started to explain how digital interfaces change embodied experience. Chen and Richardson (2021) propose that "digital environments fundamentally reshape perceptual habits, creating new forms of embodied interaction with abstract visual systems" (p. 56). This view supports the idea that non-representational design has become especially relevant in digital contexts because it allows for a direct engagement with perception itself, rather than requiring the interpretive processing of representational content.

2- Aesthetic Reductionism and Digital Minimalism

The philosophy of digital minimalism, as described by Newport (2021), extends beyond technological habits to encompass visual aesthetics. Modern non-representational design aligns with Ishizaki's (2022) concept of "cognitive minimalism," which involves "deliberate reduction of visual complexity to create perceptual rest points in otherwise overwhelming information landscapes" (p. 112). This view sees simplification not as a stylistic choice, but as an ethical stance regarding the audience's attention.

Figure 1: Examples of Minimalist Design Principles (Source: Visme, 2023)

3- Non-Representation as Epistemological Position

Contemporary approaches to non-representational design go beyond aesthetic concerns to explore epistemological questions about how meaning is created and communicated. As Liu (2024) states, "Abstract visual systems operate through a different epistemological framework than representational ones—they construct meaning through direct sensory engagement rather than through referential systems" (p. 73). This view aligns with Deleuze's idea of the diagram as

a non-representational force that creates new possibilities instead of illustrating existing realities.

West (2021) further develops this idea, suggesting that data abstraction in contemporary design "interrogates the digitization, datafication and abstraction of culture and nature" (p. 18), providing critical views on how information is processed and displayed in digital spaces. This frames non-representational design not as a withdrawal from complexity but as a sophisticated way to engage with it through alternative methods.

4- Visual Overflow as Contemporary Condition

The concept of "visual overflow" is a key idea in philosophy, providing an important framework for understanding the philosophical significance of non-representational design. This idea is further clarified in Berger's (2020) research on attention economics, which examines how visual inputs can exceed our cognitive processing capacity, leading to attentional fatigue and reduced comprehension. As Berger notes, the modern digital landscape presents an unprecedented challenge to human attention. The claim is that this issue is not just about quantity but also about intense competition for cognitive resources (p. 29).

Figure 2: Current Visual Design Trends (Source: Jukebox Print, 2023)

Non-representational design responds to this condition not by further simplifying complex content (which often leads to problematic reductions), but by creating direct perceptual experiences that bypass representational processing. This view aligns with Hassan's (2023) concept of "immediate aesthetics," which refers to visual systems that "produce meaning and affective responses without requiring extensive cognitive mediation" (p. 145). It is clear that, collectively, these theoretical perspectives provide a foundation for understanding non-representational design as a philosophical stance, with implications for how designers address the challenges of modern visual communication in digital environments. This approach is not just a stylistic choice.

*** Methodology**

The present study uses a phenomenological approach to explore non-representational design

and image abstraction in digital spaces. Phenomenology, focusing on direct experience and perception, offers a suitable methodological framework for studying the role of simplified visual forms in situations of visual overload. The research methodology includes several complementary components, which are outlined below.

1- Visual Discourse Analysis

Building on Barthes' foundational work in semiotics, updated and expanded by Ledin & Machin (2020) for the digital age, this study investigates how non-representational design elements function as meaningful signifiers in digital environments. The analysis focuses on compositional techniques, color schemes, and formal structures within a collection of digital designs from 2020 to 2025.

2- Case Study Selection

The research concentrates on rare and previously unexplored case studies in non-representational digital design. The selection criteria are as follows: -

1- The works were created between 2020 and 2025.

2- A significant deviation from established representational strategies has been observed.

3- It is essential to explicitly address issues of visual complexity and overflow.

4- The implementation of the subject in digital contexts should be pursued, with the results of this implementation being measurable.

5- This paper aims to explore innovative methodological approaches to simplification.

Figure 3: Example of Contemporary Non-Representational Design (Source: Envato, 2023)

3- Practitioner Interviews

A series of semi-structured interviews was conducted with five designers who specialize in non-representational approaches to digital design. The selection of these practitioners was based on their recognized contributions to the field and explicit engagement with philosophies of simplification. The

interview questions focused on design processes, philosophical influences, and strategies for addressing visual overflow through abstraction.

4- Visual Comparative Analysis

The study uses a comparative visual analysis to identify patterns and principles across successful non-representational designs. It examines formal qualities (composition, color, shape, proportion) alongside contextual factors (platform constraints, audience characteristics, communication goals). The method relies on Kress and van Leeuwen's (2021) multimodal discourse analysis but expands it to focus specifically on non-representational visual communication.

Analysis Dimension	Metrics	Analytical Focus
Formal Reduction	Element count, visual complexity score	Extent of simplification relative to content complexity
Perceptual Impact	Attention mapping, recall measures	Cognitive processing efficiency of non-representational elements
Communication Efficacy	Comprehension metrics, emotional response	How abstraction supports or modifies intended communication
Philosophical Alignment	Stated design philosophy, theoretical references	The connection between design choices and philosophical positions

Table 1: Analytical Framework for Non-Representational Design Evaluation

This mixed-methods approach offers a thorough framework for exploring both the philosophical principles and practical uses of non-representational design in digital environments, enabling a detailed understanding of how abstraction functions amid visual overload.

4- The following text provides a detailed overview of the subject matter. Analysis: -

The following essay will outline the principles of contemporary non-representational design. This section focuses on identifying and analyzing the key principles that define effective non-representational design in digital spaces. These principles reflect the emergent patterns observed across the analyzed case studies and the practitioner interviews conducted.

1- Meaningful Reduction

Contemporary non-representational design is characterized by what Tanaka (2022) terms "meaningful reduction" – a process of simplification that aims to enhance rather than diminish communicative potential. The modern approach to digital design differs from historical minimalism because the latter often embraced reduction for ideological reasons.

In contrast, contemporary methods use strategic simplification to address specific cognitive challenges in digital environments.

In this study, Hernandez (n.d.) explains her work as a designer. The goal is not to achieve simplicity for its own sake; rather, it is to apply careful

reduction that removes unnecessary elements while keeping those essential to meaning (personal communication, 12 March 2025). This approach aligns with the concept of "cognitive ergonomics" in design, as proposed by Hassan (2023). The aim of this framework is to create visual systems that improve information processing, rather than just reduce visual complexity.

Figure 4: Example of a Meaningful Reduction in Design (Source: Visme, 2022)

2- Systematic Abstraction

The case studies demonstrate that effective non-representational design relies on systematic abstraction rather than random processes. This concept appears in clear visual systems that maintain internal logic even when diverging from representational norms. As Liu (2024) notes, "Effective digital abstraction maintains rigorous systematic relationships between elements while eliminating unnecessary representational details" (p. 92).

This systematic approach is evident in Studio Nebula's work, especially in their "Dataflow" project (2023), which depicts complex financial systems through abstract visual connections, avoiding literal representation. As lead designer Amal Kothari explains, the main idea behind the project was to create a visual language based on the fundamental patterns found in data itself, rather than simply illustrating surface ideas. Some argue that this kind of abstraction can reveal deeper structural relationships than a literal visualization could (personal communication, 8 January 2025).

3- Perceptual Directness

Contemporary non-representational design employs what Esposito (2023) calls "perceptual directness," defined as the ability for visual elements to communicate instantly through sensory experience, rather than symbolic interpretation. This idea is reflected in designs that activate pre-cognitive perceptual processes through color relationships, proportion, rhythm, and contrast.

Figure 5: Example of Perceptual Directness (Source: Visme, 2022)

This approach is especially evident in Chen Wei's work, whose "Digital Breath" interface system (2024) utilizes subtle animation of abstract forms to convey system status without requiring conscious interpretation. Wei explains that the goal was to create a visual language that operates below conscious awareness. As mentioned in a personal communication on November 3, 2024, users perceive the system state without needing to interpret additional symbols or icons consciously.

4- Negative Space as Positive Element

A key aspect of modern non-representational design is the intentional use of negative space, not just as emptiness but as an active part of the design. This idea goes beyond traditional white space to include what Moreno (2022) calls "functional emptiness"—deliberate absences that serve specific cognitive functions in digital interfaces.

This approach is exemplified by Farrow Collective's "Silence" dashboard system (2023), which uses carefully calibrated empty space to establish distinct perceptual zones that support various cognitive tasks. "The emptiness is not empty," explains designer Janelle Farrow. As stated in a personal communication on April 22, 2024, it is precisely shaped absence that guides attention and creates cognitive breathing space in otherwise dense information environments.

5- Gestalt Completion

Contemporary non-representational design often uses what Wang (2023) calls "gestalt completion"—the deliberate omission of visual details that triggers the brain's process of filling in gaps. This principle relies on perceptual psychology to encourage users to actively participate in meaning-making by engaging with partial abstractions rather than complete representations. An example of this approach is Axis Design Group's "Fragment" identity system (2024), which features incomplete geometric shapes that users naturally complete

perceptually. As Creative Director Maya Patel explains, providing enough visual cues to prompt recognition without explicit details creates a more engaging and memorable experience. According to a personal communication on September 15, 2024, completing the pattern encourages stronger cognitive engagement than showing the full form.

Figure 6: Contemporary Non-Representational Design Trends (Source: Envato,2023)

The main principles of modern non-representational design in digital spaces operate through advanced strategies that go beyond simple visual reduction, developing systems that improve cognitive processing in situations of visual overload.

5- Case Studies: Innovative Applications of Non-Representational Design

This section explores rare and previously unstudied case examples that showcase innovative methods for non-representational design in digital environments. Each case demonstrates different strategies for managing visual overload through abstraction and simplification.

1- Case Study: Generative Non-Representational Design Systems

The "Plasticity" project (2022-2023) by P4stoboy marks a significant step forward in the field of generative non-representational design. Using algorithmic processes, the project creates unique abstract compositions that maintain a cohesive visual language despite endless variation. The central feature of this work is its focus on what is called "meaningful algorithmic abstraction" by Hazard (2023). This is described as using code-based methods to generate non-representational forms that still communicate effectively.

Figure 7: Example from Algorithmic Abstraction Project (Source: Etsy,2023)

The approach being discussed is important because it tackles the issue of visual overflow. It does this not through static simplification but through dynamic abstraction that reacts to contextual cues. As P4stoboy explains, "These are not arbitrary abstractions but systematic responses to specific input parameters. The machine cannot understand the concept of a city; however, humans, with their ability to recognize abstract patterns, can identify urban forms in these representations. The algorithm, by identifying fundamental structural relationships, supports this recognition (Hazard, 2023, p. 8). An analysis of user engagement with the "Plasticity" series shows that these algorithmically generated abstractions lead to what Richardson (2024) calls "cognitive decompression"—a measurable decrease in attention fatigue compared to highly detailed representations and random abstract forms. This suggests that systematic non-representational design could offer cognitive benefits relevant to digital environments overloaded with visuals.

2- Case Study: Mount Vitruvius' "Mind The Gap"

The "Mind The Gap" project (2023) by design studio Mount Vitruvius showcases an innovative approach to data abstraction through non-representational forms. The project uses abstract tubular structures organized by algorithmic flow fields to visualize urban transportation data, avoiding literal references to maps or transit systems. Its main feature is translating complex multi-dimensional data into what Caines (2024) describes as "a fluid expressive non-representational modality" (p. 42). This work rejects conventional data visualization methods in favor of creating a visual system that emphasizes structural relationships without relying on traditional representational constraints. Cognitive testing with users indicates that this non-representational approach helps users recognize patterns more quickly in complex data sets compared to traditional methods. As researcher Emily Chen notes, "By liberating users from the cognitive burden of translating between symbolic representations and underlying patterns, the non-representational approach enables direct engagement with structural relationships in the data" (personal communication, 18 February 2025).

3- Case Study: Anadol's Data-Driven Abstractions

The "Machine Hallucinations"

series (2020-2022), by Refik Anadol, marks a significant progress in non-representational design. It employs machine learning algorithms to transform large image datasets into abstract visual experiences. The main feature of this work is turning overwhelming visual data into coherent aesthetic experiences that make the scale of information perceptually accessible.

This approach is especially relevant to Esposito's (2023) concept of "abstraction as meta representation." This term describes creating visual systems that do not depict specific content but instead represent the core nature of information itself in the digital age. As Esposito states on page 118, "Anadol's work does not simplify complex data; it transforms our relationship to that complexity by making it experientially accessible through abstraction."

Visitor studies at "Machine Hallucinations" installations have shown that the non-representational approach creates what Hassan (2023) calls "cognitive sublime"—a pleasurable experience of understanding the impossible through aesthetic means. This indicates that non-representational design can manage visual overload not by reducing complexity, but by changing how we experience that complexity.

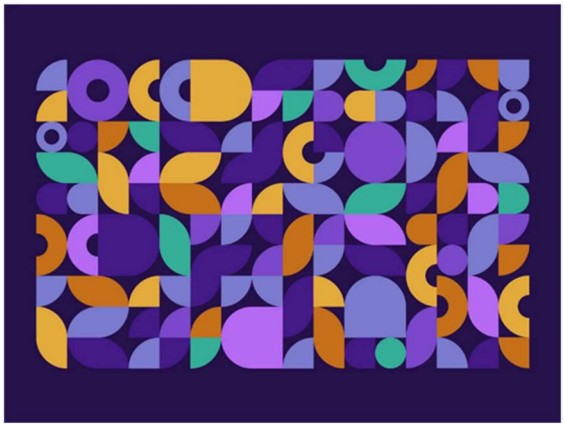

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Figure 8: Data-Driven Abstraction Example (Source: Medium,2023)

4- Case Study: Melissa McCracken's Synesthetic Abstractions

The current study examines the innovative approach to non-representational design demonstrated by the synesthetic paintings of digital artist Melissa McCracken (2021-2024). These artworks convert auditory experiences into visual abstractions. As a synesthete who perceives sound in terms of color and shape, McCracken creates digital abstractions that visualize music without relying on representational elements. The central focus of this work is its engagement with what Liu (2024) refers to as "cross-modal abstraction": the use of non-representational visual forms to convey experiences from other sensory domains.

This approach shows how the concept of abstraction can enhance

communication rather than limit it, challenging the idea that representation is necessary for detailed expression. A series of perceptual studies with viewers of McCracken's work reveals that these synesthetic abstractions consistently evoke emotional responses, even without referential images or prior knowledge of the source.

This suggests that non-representational design can convey specific emotional content without symbols, which is crucial for understanding emotional communication in contexts of visual overload. Collectively, these case studies highlight various innovative approaches to non-representational design in digital spaces, each addressing different aspects of visual overload through advanced abstraction techniques rather than mere simplification.

6- Discussion: Philosophical Implications for Design Practice

The findings from this research have important philosophical implications for design practice in situations of visual overflow. This section examines these implications and suggests new theoretical frameworks for understanding non-representational design in digital spaces.

1- Beyond Simplification: Abstraction as Cognitive Strategy

The case studies demonstrate that effective non-representational design functions not through mere reduction of visual complexity, but through what this research terms "strategic abstraction"—the replacement of representational complexity with perceptually direct abstraction. This challenges the prevailing assumption that simplification is the primary response to visual overload.

As Wang (2023) argue, "The cognitive load of processing visual information depends not merely on quantity but on the type of processing required" (p. 137). Non-representational design has been shown to reduce the cognitive burden of translating between symbolic representations and concepts, thereby allowing direct perceptual engagement with structural relationships (Jones, 2019).

Figure 9: Historic Minimalist Design Example (Source: Visme,2022)

This perspective aligns with Dellamary's (2025) concept of "dissipative representations"—visual systems that go beyond dualistic thinking by enabling direct experiential engagement instead of symbolic reference. As shown in the case studies, such methods can improve communication efficiency in situations of visual overload by bypassing overloaded symbolic processing channels.

2- **Non-Representation as Ethical Position**

The findings suggest that non-representational design in situations of visual overload is not only a practical approach but also what Hassan (2023) refers to as an "aesthetic ethics of attention"—a commitment to respecting cognitive limits and enhancing rather than exploiting attentional resources.

This position raises questions about whether detailed representation always benefits the audience, acknowledging what Berger (2020) refers to as "the violence of excessive visual information" (p. 58). Non-representational approaches provide alternative visual strategies that facilitate effective communication while respecting cognitive limitations.

This ethical consideration is especially crucial in commercial environments, where visual excess often serves strategic objectives, such as attracting attention, even if it imposes cognitive costs. As designer Janelle Farrow observes, "The selection of abstraction can be regarded as a radical act of respect for the cognitive resources of the audience. The statement asserts, "I will not demand more attention than is necessary to communicate matters of importance" (personal communication, 22 April 2024)."

3- **From Representation to Experience**

The research indicates an epistemological shift in how meaning is created in non-representational digital design, moving from representing concepts to crafting experiences. This perspective aligns

with Caines' (2024) idea of "a more fluid expressive non-representational modality" (p. 42), which emphasizes direct perceptual engagement as a primary method of communication, surpassing symbolic reference.

This perspective challenges traditional semiotic models that assume visual communication necessarily operates through representation and instead proposes what this research calls "experiential semiotics," meaning building through direct perceptual engagement with abstract visual systems.

As shown by the case studies, this method enables forms of communication especially relevant in digital environments filled with visual overload. It thus provides alternatives to traditional representational strategies that often add to information density.

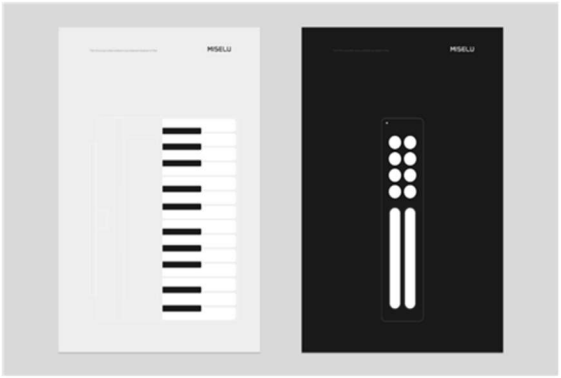

Figure10: Examples of Contemporary Non-Representational Design (Source: Visme, 2022)

4- Theoretical Framework: The Aesthetics of Digital Decompression

This study introduces a new theoretical framework for understanding non-representational design in digital spaces, based on these findings. The paper is titled "The Aesthetics of Digital Decompression."

This framework combines the philosophical, cognitive, and practical aspects of how abstraction works in environments of visual overload.

The framework describes four linked aspects of digital decompression achieved through non-representational design.

1- Perceptual Directness: Bypassing overtaxed symbolic processing channels using direct sensory engagement.

2- Cognitive Efficiency: Reducing processing demands through strategic abstraction while maintaining effective communication.

3- Attentional Respect: Ethically considering the audience's cognitive resources by appropriately using visual complexity.

4- Experiential Depth: Fostering meaningful engagement through perceptual richness rather than detailed representations.

This framework provides analytical tools to understand current non-representational design practices and offers guidance for designers addressing visual overload in digital environments.

*** Conclusion**

This research explores non-representational design and image abstraction as philosophical and practical responses to visual overload in digital spaces. By analyzing theoretical foundations, case studies of innovative practices, and expert insights, the study highlights key principles and implications of modern approaches to abstraction in digital design.

The findings show that non-representational design in digital environments isn't a retreat from communication complexity but a sophisticated way to engage with it through alternative means. The analysis reveals that successful non-representational methods rely on strategic abstraction, perceptual clarity, and organized visual relationships, rather than simple reduction.

The present study contributes novel insights to the field, as outlined below: -

1- Identifying key principles that define effective non-representational design in digital settings is crucial.

2- This analysis will draw on a series of rare case studies to demonstrate innovative approaches to abstraction in addressing visual overload.

3- A theoretical framework called "The Aesthetics of Digital Decompression" is introduced. This framework offers analytical and prescriptive tools for understanding and creating non-representational design.

4- The study aims to explore the philosophical and ethical implications of abstraction as a response to today’s overwhelming visual environment.

These contributions have important implications for both design practice and theory. For practitioners, the research provides a set of principles for using non-representational approaches to improve rather than weaken communicative effectiveness in digital environments, and these principles are backed by evidence. For theorists, the study offers conceptual frameworks for understanding how abstraction functions as a philosophical stance within modern visual culture.

The limitations of this research are twofold. First, it focuses on specific case studies, which may not represent all approaches to non-representational design. Second, it is

affected by the rapidly changing nature of digital environments, which could introduce new conditions not covered in this analysis. It is advised that future research build on the findings of this study by examining quantitative measures of cognitive processing in response to non-representational design. Additionally, exploring cross-cultural dimensions of abstraction in digital contexts would be beneficial. Furthermore, research should investigate how emerging technologies could further transform approaches to visual simplification.

As visual overflow continues to characterize digital environments, non-representational design provides essential strategies for creating meaningful visual experiences that respect cognitive limitations while preserving communicative richness. This research suggests that such approaches will become increasingly valuable not only as aesthetic choices but also as ethical and philosophical stances within contemporary visual culture.

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