

Interpretation of Humanistic Connotation of Digital Media Visual Expression from the Perspective of Design Aesthetics

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Abstract: Today, visual meaning is created, communicated and received predominantly through visual expression in digital media: interface design, motion graphics, data visualisation and algorithmically generated images. This paper argues that the humanistic connotation of digital media visual expression is not completely understood by formality aesthetics or technical functionality, but needs a design aesthetics context that combines the Bauhaus heritage of form-function unity, Barthes' semiological interpretation of visual meaning, and Manovich's cultural logic of new media. Three dimensions of humanistic connotation are identified and analysed: the cultural memory dimension, where digital visual forms encode and transmit collective identity and historical consciousness; the empathic dimension, where human-centred interface and interaction design builds affective relationships between users and digital environments; and the critical dimension, where design aesthetics enables the identification and resistance of algorithmic visual homogenisation as a threat to cultural diversity and humanistic plurality. The article also contends that the spread of AI-generated images and platform-driven design uniformity provide a structural challenge to the humanistic roots of digital visual culture. It finishes with a framework for a humanistic design practice that prioritises cultural specificity, embodied aesthetics and ethical visual communication as essential design values.

Keywords: Design aesthetics, digital media, visual expression, humanistic connotation, visual semiotics, Bauhaus, Manovich, algorithmic aesthetics, cultural memory, human-centred design.

1. Introduction

1.1. Research Background and the Humanistic Stakes of Digital Visual Culture

The ubiquity of visual expression in digital media in contemporary life – from social media interfaces to immersive data visualisations, from algorithmically curated image feeds to AI-generated graphic content – has made questions of visual meaning, aesthetic value and humanistic significance more urgent than ever before in the history of design. Design aesthetics is the theoretical discipline that deals with the relationship between formal visual properties and the meanings, values and experiences that they engender. It offers a productive analytical framework for the exploration of the humanistic dimensions of digital media visual expression that technical or commercial design discourse routinely sidelines. The shift from analogue to digital image-making has transformed the fundamental ontology of the visual sign: digital images are, in Manovich's terms, flexible, modular and software-driven, rather than fixed and material, with consequences for humanistic meaning that cannot be adequately theorised.

The humanistic significance of visual expression – that it may encode cultural memory, build identity, generate empathic connection, and sustain critical consciousness – is not ancillary to the design but its ultimate objective. This was the Bauhaus's formulation of the merging of art and technology for human life. Form follows function – not in the reductionist sense of mere utility, but in the wide sense that designed forms should incorporate and facilitate the whole of the human experience. The digital transformation of visual media creates new conditions under which this purpose needs to be re-examined and re-articulated, as algorithmic systems increasingly mediate the production, distribution and

reception of visual content in ways that may systematically diminish the humanistic register of visual expression.

1.2. Research Questions

The study poses three research questions. RQ1: What theoretical frameworks are most productive for analysing the humanistic connotation of digital media visual expression, and what are its constituting dimensions? RQ2: Through what main processes does algorithmic and platform-driven digital visual creation put the humanistic bases of visual culture at risk, and what design aesthetics concepts help to illuminate these risks? RQ3: What is the pragmatic framework for humanistic digital design practice that arises from the theoretical and critical analysis?

2. Theoretical Framework

2.1. Design Aesthetics from Bauhaus to the Digital Interface

The aesthetic programme of the Bauhaus school – synthesising fine art, craft and industrial production under the principle of the mutual constitution (rather than opposition) of formal excellence and functional purpose – set the foundational vocabulary of modern design aesthetics, and continues to exert formative influence on digital interface design [1]. The Bauhaus principle that the visual form should express the structural logic of its material and process – translated into digital design as the principle that the interface form should express the structural logic of interaction and information architecture – is directly instantiated in the flat design and material design systems that currently dominate digital interface aesthetics. The New European Bauhaus is an initiative launched by the European Commission in 2021, based on the Bauhaus legacy, which extends this aesthetic

program to the context of digital and sustainable design. It explicitly positions aesthetic quality, sustainability and inclusivity as an integrated triad of design values whose combination defines a humanistically adequate design practice [2]. In the change from Bauhaus modernism to digital design aesthetics there are both continuities – the commitment to formal rigour, functional integrity and universal communicability – and discontinuities: the variability, interactivity and algorithmic generation of digital media introduce aesthetic dimensions that the original Bauhaus programme could not anticipate and that require theoretical extension.

2.2. Barthes' Semiology and the Layered Meaning of Visual Signs

We employ the semiology of the visual image of Roland Barthes in *Mythologies* and *Image-Music-Text* as an analytical framework to decompose the layers of meaning through which digital visual indicators operate [3]. Barthes' distinction between the denotative level of visual meaning (the literal, perceptual substance of the image) and the connotative level (the cultural, historical and ideological associations that the image mobilises) is easily applicable to visual expression in digital media. The denotative layer is frequently highly standardised through platform rules and computational efficiency, whereas the connotative layer bears the humanistic weight of cultural identity and historical reference. His conception of myth, whereby culturally specific meanings are naturalised as universal and self-evident truths through the operation of connotation, pinpoints the ideological mechanism by which the algorithmic standardisation of visual codes can serve to repress cultural diversity and critical consciousness by presenting specific aesthetic conventions as objectively correct. Barthes' method provides a critical vocabulary for the aesthetics of design, allowing it to escape the formalist investigation of digital visual expression and enter into an ideological critique of the power relations implicit in visual convention.

2.3. Manovich's Cultural Logic of New Media

The most systematic theoretical account of the structural principles that distinguish the visual expression of digital media from its analogue predecessors, and whose cultural-aesthetic implications constitute the theoretical context for understanding humanistic connotation in the digital visual domain, is Manovich's *The Language of New Media* [4]. Manovich identifies five structural properties of modern media with aesthetic implications: numerical representation, modularity, automation, variety, and transcoding. Variability is the idea that any new media object can have potentially limitless algorithmically-generated variations. This idea runs counter to the classic aesthetic notion of the visual work as a single self-consciously produced object. The challenge is whether algorithmically changing visual expressions may retain humanistic meanings that rely on intentional form-making. Transcoding, the idea that new media items are at once cultural and computational layer, each affecting the other, offers a theoretical basis for understanding how computational logic impacts aesthetic norm. New media's database logic, claims Manovich, is the arrangement of cultural experience as a set of things without the necessary narrative or aesthetic hierarchy, supplanting the narrative logic that has historically organised humanistic meaning-making.

3. Dimensions of Humanistic Connotation in Digital Visual Expression

3.1. Cultural Memory and Identity in Digital Visual Form

One of the most important humanistic registers of design aesthetics is the cultural memory dimension of visual expression in digital media, that is, the potential of visual forms to encode, transmit and activate collective historical awareness and cultural identity. The study of the spectral afterlife of analogue aesthetics in digital visual media [5] demonstrates how the purposeful reappropriation of film grain, VHS distortion and photographic artefacts in digital media can be interpreted as an affective archive of cultural memory, where analogue visual markers are used as a mode of resistance to digital hyperreality and a strategy for identity continuity across the analogue-digital divide. This occurrence – the haunting of digital visual expression by analogue aesthetic memory – indicates that digital visual forms are not culturally neutral, but hold complex historical sediments whose humanistic connotations are subject to the study of design aesthetics. The semiology of visual cultural memory, based on Barthes' framework of connotation, describes how particular colour palettes, typographic conventions, compositional gestures and iconographic elements operate as cultural memory triggers in digital media, encoding particular national, ethnic, generational and subcultural identity positions within the denotatively neutral formal vocabulary of digital interface design [3].

3.2. Empathic Aesthetics and Human-Centred Interface Design

A second significant area of humanistic meaning is the empathic dimension of digital visual expression, or its potential to build affective relationships between users and digital environments that recognise, respond to, and sustain the full spectrum of human emotional experience. The humanistic commitment of design aesthetics is operationalised at the level of practice in human-centred design (HCD), the design approach that privileges human wants, capacities and experiences as the major determinants of design decisions [6]. The aesthetic dimensions of HCD encompass what could be termed 'empathic aesthetics': the design of visual environments that express care, recognition and respect for the humanity of the user – through visual choices that acknowledge emotional vulnerability, celebrate cultural diversity and resist the reductive instrumentalisation of human attention that characterises algorithmically optimised engagement design. Research on design thinking in physical and virtual environments confirms that the shift to digital spaces does not reduce the need for aesthetic richness and human connection for the participants but reconfigures the material conditions through which these needs are met – with direct implications for the way designers must conceptualise the humanistic function of digital visual expression [7].

3.3. Visual Semiotics and the Construction of Meaning in Digital Interfaces

The semiological dimension of digital visual expression – the systematic functioning of visual signs to produce meaning within the shared cultural conventions of contemporary

digital culture – offers the bridging analytical link between formal design aesthetics and humanistic connotations. Research on visual language codes and cultural meaning in digital media indicates that digital visual communication operates through a layered semiotic structure in which typographic choices, colour systems, compositional conventions and iconographic vocabularies operate simultaneously as denotative information carriers and as connotative cultural position-markers. The connotative layer carries the major humanistic burden of identity expression, value communication and cultural affiliation [8]. The data visualisation heritage of digital design is an extremely interesting case of humanistic visual semiotics. The visual representation of quantitative data inherently incorporates aesthetic decisions (e.g. colour, scale, geometry, narrative sequencing) that convey particular epistemic and ethical beliefs about the importance of what is being represented. Data visualisation is consequently a place of humanistic meaning-making, whose design aesthetics deserves specific critical attention.

4. The Algorithmic Challenge to Humanistic Visual Culture

4.1. Visual Homogenisation and the Suppression of Cultural Diversity

The most significant contemporary danger to the humanistic roots of digital visual culture is the structural tendency of platform-driven and algorithmically mediated digital visual creation towards aesthetic homogenisation. This paper, which examines online design platforms and stylistic homogenisation, documents how database-driven design tools, with pre-optimised templates, algorithmically suggested colour schemes and AI-generated visual material, produce converging aesthetic results across apparently diverse creators and cultural contexts, suppressing the formal variety which is the visual prerequisite for cultural variety [10]. Research on algorithmic bias shows that generative AI and platform optimisation approaches often replicate existing visual conventions – high contrast, face-centred, Western-centric styles – producing a feedback loop that slowly narrows the visual field of digital culture [11]. This can be identified, in Barthesian terms, as the production of a new digital mythology: the naturalisation of algorithmically optimal visual styles as objectively beautiful, erasing the cultural specificity and historical particularity that constitute the humanistic depth of visual expression.

4.2. AI-Generated Imagery and the Crisis of Intentional Form

The emergence of AI-generated visual material from large-scale generative models such as Midjourney, DALL-E and Stable Diffusion poses a structural challenge to the humanistic conception of visual expression as deliberate form-giving, a conception that design aesthetics has yet to theorise properly. A qualitative analysis of AI-generated portrait imagery across leading generative models finds that while superficially diverse, the outputs systematically reproduce idealised facial proportions, smooth skin textures, symmetrical compositions, and Western-centric cultural representations, producing what the study terms “synthetic originality” – the statistical simulation of aesthetic variety without the cultural specificity, intentional meaning, or humanistic agency that differentiates genuine visual

expression from optimised image production [12]. This is a direct instantiation of Manovich’s concept of transcoding at the level of cultural politics in which the statistical optimisation of the computational layer prevails over the humanistic diversity of the cultural layer in order to produce outputs formally competent but humanistically impoverished. The challenge of design aesthetics is to produce protocols for AI-assisted visual design that tap into the power of generative systems while maintaining intentional, culturally distinct and humanistically committed expression.

5. Discussion: Toward a Framework for Humanistic Digital Design Practice

We summarise a coherent framework for humanistic digital design practice for each area of research based on the three theoretical frameworks described in Section 2. 4.1. Answer to RQ1: The humanistic dimension of visual expression in digital media has three dimensions that are analytically separable but practically interdependent, namely the dimension of cultural memory, the empathic dimension, and the critical semiotic dimension, and all of them require a clear theoretical grounding and practical design consideration. The germinal design principle is the synthesis of form and function as given by the Bauhaus legacy; Barthes’ semiology supplies the analytical tools to dissect and judge the connotative layers of visual meaning; and Manovich’s new media theory defines the structural conditions – variability, modularity, transcoding – that mark out the humanistic challenges of digital visual design from those of analogue visual culture [1][3][4].

In answer to RQ2: algorithmic visual homogenisation and AI image standardisation function by suppressing the two structural conditions of humanistic visual expression, namely cultural variation and conscious form-giving. We include the myth mechanism of Barthes and the logic of the database of Manovich. Both techniques are analytically transparent and practically resistible, and we contribute to design aesthetics.

RQ3: a framework for humanistic digital design practice should foreground cultural specificity in visual decision-making, not algorithmic optimality; embodied aesthetics, not attention-grabbing engagement-maximising; and ethical visual communication, not ideological naturalisation of form. The framework means that design aesthetics is not a luxury veneer atop functional digital design, but its very deepest functional base.

6. Conclusion

In this paper we have argued that the humanistic connotation of digital media visual expression consists of the interplay of cultural memory encoding, empathic human-centred aesthetics and critical visual semiotics – dimensions that design aesthetics, rooted in the Bauhaus tradition, Barthesian semiology and Manovich’s new media theory, is uniquely placed to analyse and sustain. The structural tendency of algorithmic and platform-based visual production towards aesthetic homogenisation and the silencing of cultural specificity constitutes the principal threat to this humanistic basis. Visual outputs of AI image generation systems that replicate prevalent aesthetic norms and marginalise cultural diversity concretely exemplify this. The pragmatic response required of design aesthetics-and of designers working in digital media-is a humanistic design

practice that employs formal rigour, cultural specificity, embodied empathy and ideological critical awareness as the constitutive values of visual expression adequate to the humanistic demands of the digital age.

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