The Value of Digital Design Ethics in Maintaining Semiotic Visual Message Authority of Signs in an AI Landscape

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Abstract. Design encompasses every system from reading to the internet, from wayfinding to a plan or a drawing, to the look and function of a building, a garden, or a citrus squeezer, all processes require a design system to be explicitly defined. The concept of design thinking has formed naturally alongside many complex practices and systems and the rise in digital platforms has expedited the dissemination of design practice. In these rapidly changing times, the inclusion of modern artistic design thinking and practice needs transparent codification for the expert and the layperson.

This study aims to shine light on the global disparity between the design practice of digital novice designers and message disseminators and their professional designer counterparts. The value of a universal digital design ethic to maintain semiotic visual message authority (the prescription of authenticity of the message and meaning by the originating author) has been investigated previously but not in the context of the digital space, including future AI developments, and has not been fully elucidated, or fully supported, and has never been more necessary.

Data was gathered through an observation of perception of digital visual artefacts incorporating a generative AI portrait gallery, reminiscent of National Portrait Gallery portraits and photographic series, where demographic identities were left unassigned, participants were invited to answer a series of questions alluding to semiotic visual message authority. Findings display the ad hoc nature of human perception as it relates to AI portrait recognition to date.

1. Introduction

The rate of emergence and update of new design tools enables an increasing potential for misinformation via ineffective or inappropriate design using professional tools with no pre-design skills needed. The impact of this on design semiotics has globally affected the creation of visually compelling content, and message validity and meaning are no longer as concrete as they were pre-digital. Now the non-linguistic visual signs in art and design are becoming more chaotic and more sporadic, with the everyday incremental pressure of digital advancements.

An example of current misinformation is the confusing use of a deepfake parody campaign video of Kamala Harris, shared by Elon Musk that went viral through his 192 million followers (Fig. 1). The video author remains unknown, but was originally posted by an X account linked to the conservative podcaster Chris Kohls and labelled a "parody2 (*France 24*[1]). In addition to the range of deepfakes and AI generated public content, new AI programmes, such as Grok (Grok is a generative AI developed by X) are escalating the problem of misinformation and the definition of clarity in digital spaces (Hirschfeld 2024). These emerging issues require new thinking in terms of ethics and visual digital literacy.

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[1] Musk faces criticism over deepfake Kamala Harris video, *France 24*. Available at: www.france24.com/en/live-news/20240729-musk-faces-criticism-over-deepfake-kamala-harris-video Accessed: 13 September 2024.
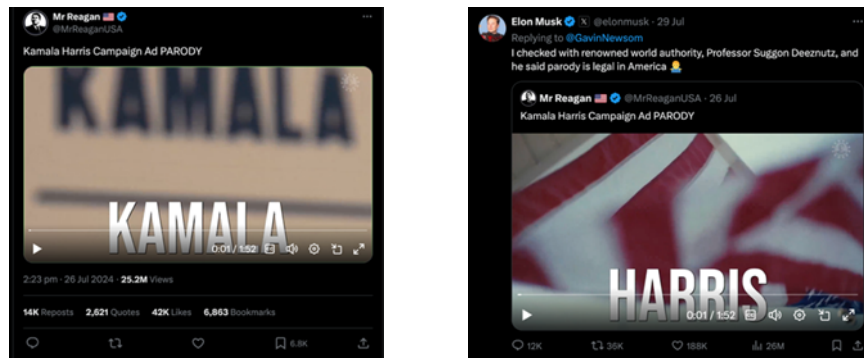
Fig. 1 – Parody political campaign video posted on X, unknown.

In the digital space anyone can acquire and apply digital tool skills and immediately upload content for public viewing across social platforms, but an academic degree is not required to use them and as a result there are no guidelines or sensitivities for what constitutes good citizenship online. This has heightened the rise in the influence of fakery, the potential for dilution of the message and the slow erosion of ethical standards. Participatory culture on digital social platforms, combined with human-machine language are gradually leading us towards streams of 'simulacra'(Baudrillard 1981), copies or representations of objects, that either do not possess an original or place hold and replace the original, thus questioning the notion of reality itself.

Fairness, accuracy, respect, transparency, cultural sensitivity, and social responsibility are the foundations of a civilised society. These behaviours form the basis of design ethics and when applied to the design of products, services and information sharing produce design-thinking messages and artefacts aligned to a culture's values and sensibilities. In the landscape of the eternal '*Digital Now*', here first described as beginning in the era of the early 21st century, timeframes are reduced, and expectations are sped up, leading to a constant deluge of digital outputs (Toffler 1970). These outputs have moved away from material understanding and connection, in preference for digital transmissions at such a prolific rate, that we have begun to move away from the important criteria of what it means to be human. As Maria Ressa highlighted,

> We are standing on the rubble of the world that was, and we must have the foresight and courage to imagine what might happen if we don't act now, and instead, create the world as it should be – more compassionate, more equal, more sustainable (Nobel Peace Prize laureate Maria Ressa 2021).

Professional codes of conduct, such as privacy policies, GDPR, ombudsman, etc. provide benefits to the public, as they build confidence and trustworthiness in products, services, companies and governments. We are placing more trust in digital platforms to provide their codes of conduct and while discussions are taking place to consider general standards, there is no parity or specific criteria outlined for all major search engines and administration processes still move at a glacial pace compared to new digital platforms.

Design agency is a key tool to the perception, construction and transformation of messages and storytelling and up until the 1980s design practice was fundamental to maintaining the semiotic visual message authority (the prescription of authenticity of the message and meaning by the originating author) of signs. In the new landscape of artificial intelligence (AI), elements of design have been engulfed by new digital platforms and services that provide the public with templated options for design output across social media.

The landscape of the *Digital Now* and AI is extensive, with different technologies operating internally and different possible effects in the fields of culture, for example, automated template-based design tools, bias in AI-generated designs and a degree of loss of human creativity and originality. Through the increasing use of social media and AI there is growing evidence of countrywide examples of the relaxing of necessary formalities that apply to specific traditions, culture and language.

Whilst these digital design tools appear to offer a plethora of choices of typography, colour, layout, image and other options, they also restrict the user through limited choice and input. Supplying the public with pre-designed, templated options in a digital environment that shows no sign of slowing down is slowly

eroding individual creativity and critical enquiry of content output and meaning. For example, to remain current and visible to audiences, social media influencers must post up to two reels a day of well-edited, targeted content and the speed of this relay is increasing and becoming even more reliant on further templated content.

The combination of a lack of digital platform standards, an increase in digital output requirements and an increase in the manufacture of templated content (Fig. 2) has diminished semiotic visual message authority.
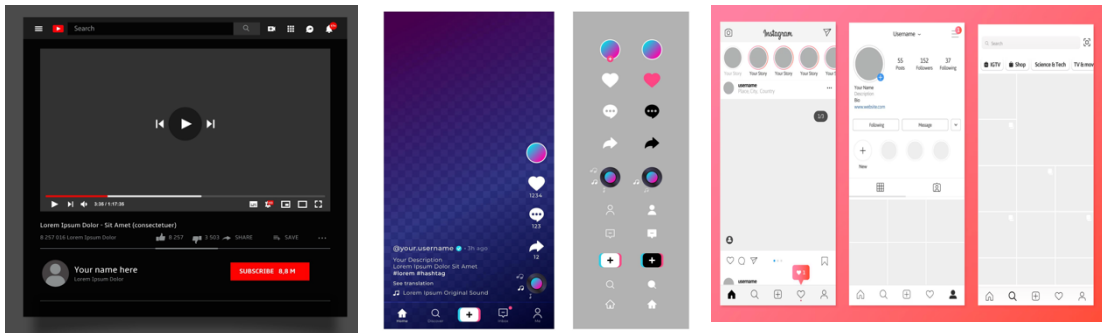

Fig. 2 – Examples of social media templates, source Freepik.

There are clearly inherent tensions and challenges in the digital space, with increasing pressure from AI. The ethical dimensions of design that balance forces of design outputs apply a socially aware agenda that can be applied effectively to begin to address some of these issues.

The emergence of AI is turning the digital space into a free-for-all of endless unmanaged content being released on multiple emerging platforms. Whilst standards have been employed on different platforms, each of these standards pertains to the organisation's needs and requirements and does not necessarily consider the broader context of issues that may arise from a lack of global standards within their frameworks. Cambridge professor of global politics and society, Graham Denyer Willis expresses succinctly the need for protection due to disparity between digital capitalism and digital user,

> Given its many historical peculiarities, the dominance of platform capitalism in today's global economy demands a political economy explanation. By attending to how they have managed to grow so large in the absence of a clearly defined system of protection that matches their trans-jurisdictional influence and scope, and new concentrations of wealth, this system of trust-making and protection is historically distinctive and structurally constitutive (Denyer Willis 2023).

This acknowledgement supports the need for academic fields of research to inquire further into platform standards that span trans-jurisdictional spaces. An additional layer of complexity has emerged where digital design tools are freely available to novice users, in combination with platform restrictive templates that present their content with a limited structure. These two factors are present without adequate or the meaningful standards that were seen in old publishing houses and printers. For designers to maintain semiotic visual message authority, the American Institute of Graphic Artists (AIGA) has a standard of professional practice[2], which incorporates many elements, of note to this paper is the Designer's responsibility to the public, as outlined (Fig. 3).

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[2] AIGA, 2024, *AIGA standards of professional practice*, Available at: https://www.aiga.org/resources/aiga-standards-of-professional-practice. Accessed: 13 September 2024.

The Designer's Responsibility to the Public

6.1 A professional designer shall avoid projects that will result in harm to the public.

6.2 A professional designer shall communicate the truth in all situations and at all times; his or her work shall not make false claims nor knowingly misinform. A professional designer shall represent messages in a clear manner in all forms of communication design and avoid false, misleading and deceptive promotion.

6.3 A professional designer shall respect the dignity of all audiences and shall value individual differences even as they avoid depicting or stereotyping people or groups of people in a negative or dehumanizing way. A professional designer shall strive to be sensitive to cultural values and beliefs and engages in fair and balanced communication design that fosters and encourages mutual understanding.

Fig. 3 – AIGA Professional Practice Standards.

This research links the importance of visual design in combination with semiotics and philosophy (de Saussure, Baskin 1959, Joseph 2016) in leading the steps to the guardianship of semiotic visual message authority in the digital space.

Research methodology uses contextual, visual and multimodal semiotics (Barthes 1964, Apel 2000, Bolter 2000) to discover the impact of AI transmission, through cultural value creation and digital visual message meaning, on the perceptive processes of the participant. Concepts are explored through a comparative study of generated content presented to novice and professional digital designers, content that sits within the four spaces of social meaning according to Pierluigi Basso Fossali (Fig 4) as discussed in terms of generative AI by D'Armenio, Deliège and Dondero (2024).
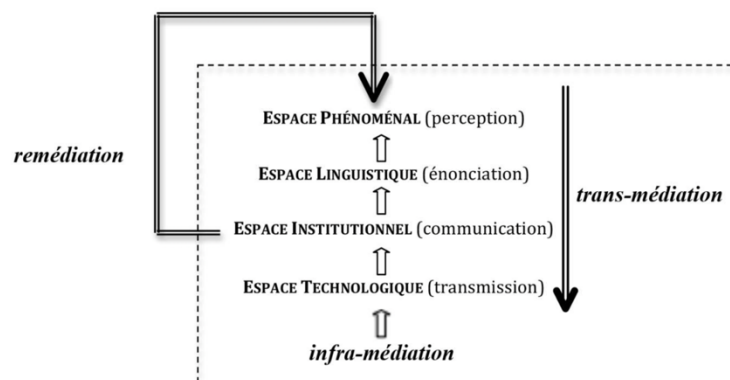

Fig. 4 – Levels of mediation spaces in the social production of meaning. (Saint-Gerand 2018, p. 424).

Research aims include how the use of AI influences participant perception, and how AI can influence ethical considerations (Apel 2000). Specifically, it studies participants' perception and decision processes in the context of interactions with curated digital visual communication messages, by examining participants' responses as knowledge, interpretations, opinions and emotions, consideration was also given to semiotic ground dominance (Sonesson 1992, 1994, Zlatev, Sonesson, Jordan 2023). This study proposes a variation on a Lotman/Uexküll-informed semiotic approach (Uexküll 1982, Lotman 1990, Arkhipova, Viidalepp 2023), with application specifically related to the complexity of collecting human perception data.

Karl-Otto Apel is ethically relevant to the code of conduct for designers as he considered globalization and the need for universal ethics (Apel 2000, 2007). Traditionally, designer's design for their immediate

culture, for a global shared design practice in the digital space, a co-created ethical standard is a possible solution for maintaining digital semiotic visual message authority. The digital global community is currently at an impasse, where changes to digital semiotic visual message authority and credibility are becoming irreversible, where the solution is a second wave of globalization where universal ethics are adopted, as described in 2000, by Apel:

> The globalization process characterized so far, I would emphasize, is irreversible. It is typically one of those developments of human history that have taken place ahead of our reflection and morally responsible control. But this means, I suggest, that the process characterized so far should only be considered a phenomenon of first-order globalization. It is a challenge to the philosophical reflection and thereby to a mobilization of moral responsibility for the establishment of a novel order of human interaction that could be called second-order globalization. Only such an effort, I suggest, can cope with the problematic aspects of first-order globalization. This suggestion may, in the present article, serve as an account of the need for a universal ethics in our time (Apel 2000, p. 138).

The American Innovation Design Engineering Organisation, IDEO, has been leading the way for human-centred design. Through their work they have upheld ethical standards to ensure that AI is in service to human creativity and mitigates bias. Key examples of this can be seen in the health equity collective supported by the Robert Wood Johnson Foundation, a project which focusses on advancing health equity through the acquisition of multidisciplinary teams to create new standards for healthcare (IDEO 2020[3]) IDEO and the Healthworx Studio which addresses healthcare problems to increase transparency and patient engagement through the combination of teamwork with ChatGPT (IDEO 2023[4]). These examples demonstrate the integration of AI through innovative, human-centred application. The requirement for AI regulation is a worldwide topic that is being discussed by the supranational political and economic union and worldwide law firms, for example, DLA piper advises on the current legal standpoint re AI use in Italy, stating that all AI works must identifiable,

> In line with the AI Act, authors (or economic rights holders, if different from the authors) must use machine readable watermarks on video content or audio indications within audio content if it has been generated, modified, or altered by AI systems. This requirement aims to disclose when data, facts, and information presented as real are AI-generated.
> The Italian Government, through the Italian draft AI law, has also attempted to modify Italian copyright law by adding a specific reference to the need of a human contribution in the creation of copyright protected works. Human contribution shall be, at minimum, creative, relevant and provable. Failure to sufficiently establish these qualities will mean that the work cannot be protected under Italian copyright law. This approach is in line with the view taken by EU and US courts, where courts draw the line between what is protected and not. Companies will therefore be required to carefully document their creative in order to establish that sufficient human contribution has been included to afford copyright protection (Coraggio 2024).

Associate Professor at the School of Art & Design, UNSW Sydney, Oliver Bown describes the issues of fair use for artists,

> Existing "fair use" clauses in many countries, notably the US, permit some uses of copyrighted material for training algorithms, but this permission is not clear cut. Such exceptions predate the current reality of Generative AI's capability, which brings them into conflict with artists' rights. When artists' creative work is being used to train AI systems that then compete with them in the same creative marketplace, a strong argument can be made that this cannot constitute "fair" use (Bown 2024).

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[3] IDEO 2020 Health Equity Collective: A New Era for American Wellness… | IDEO.org. Available at: www.ideo.org/project/health-equity-collective Accessed: 13 September 2024.
[4] IDEO 2023 We Tried to Build a Health Venture With ChatGPT. Available at: www.ideo.com/journal/we-tried-to-build-a-health-venture-with-chatgpt Accessed: 13 September 2024.

Specific relevance to this study, the EU has laid out a *Framework for Trustworthy AI*[5] that includes respect for human autonomy, transparency, diversity, non-discrimination and fairness, accountability, etc. (Fig. 5).
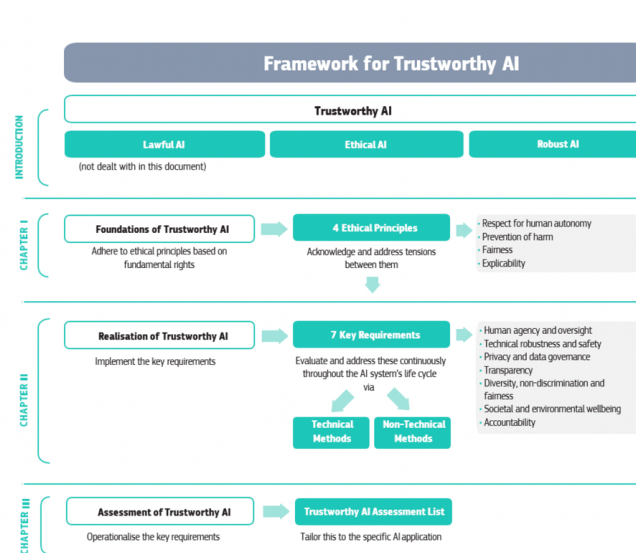

Fig. 5 – EU Framework for Trustworthy AI, (EU commission, 2019).

Graphic designers have been considering the effects of their practice since the 1950s and began drawing up a collective manifesto between influential designers of the time. With each new wave of development in society designers have questioned their practice for service and product delivery and their impact on society. The latest iteration of the manifesto is the "*First Things First 2014*", a project lead by Cole Peters. This manifesto also addresses the current digital situation that is currently without universal ethics. As Peters outlines in the 2014 manifesto,

> Instead, we are calling for a refocusing of priorities, in favour of more lasting, democratic forms of communication. A mind shifts away from profit-over-people business models and the placing of corporations before individuals, toward the exploration and production of humble, meaningful work, and beneficial cultural impact[6].

The significance of the '*First Things First 2014*' manifesto in the design sphere has been covered in Eye, Design Week, Creative Bloq, FastCo. Exist, the International Council of Design, Occupy.com, Attending.io, and Monográfica. However, it needs to be further shared across disciplines for a true global co-creation to achieve a common ethics standard. AI has increased the requirement for new ethical considerations due to algorithmic bias (Heikkilä 2023) and the potential of oppression by algorithms (Noble 2018).

In this study the inclusion of Algirdas Greimas' Semiotic Square (Fig. 6.) can be considered in terms of human and AI, non-human and non-AI, where co-enunciation exists between human and AI, as previously articulated by several authors (Floch 2001, Fontanille 2017, Zantides 2019, Leone 2022; Arkhipova, Viidalepp 2023, Osmany 2023, D'Armenio, Deliège, Dondero, 2024, Morra, Santangelo, Basci, Piano, Garcea, Fabrizio Lamberti *et al.* 2024). The construction of the sequential images in this research illustrates humans who do not exist with elements of cultural references that are not aligned to specific cultures, in effect unassigned. The typographic themes employed by this work combined a sans serif font with roman numerals for the titles.

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[5] EU commission, 2019, *Ethics guidelines for trustworthy AI. Shaping Europe's digital future*. Available at: https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai Accessed: 13 September 2024.
[6] First Things First 2014, 2024, Available at: https://firstthingsfirst2014.net/ Accessed: 17 March 2024.
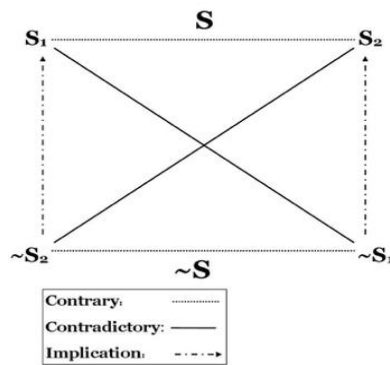
Fig. 6 – Semiotic Square (Greimas 1966).

When considering the rate of design output on social media is increasing and AI processes are becoming more immersive, the findings of this study suggest that principles applied to data visualisation and analytical design should also be included in the new rules for application of universal ethics. A combination of the French theorist, Jacques Bertin's 1967, taxonomy for visualisation book, *Sémiologie graphique* (Bertin 1967) (Fig. 7) and Edward Tufte's book *Beautiful Design*, which describes six principles of analytical design (Tufte 2006) (Fig. 8) give insight into, and some control of, symbol systems for making meaning. The practice of putting words, images and grids together follows design rules, which follow design principles complying with the three areas of semiotics, cognitive, social and cultural, and visual (human perception and understanding).
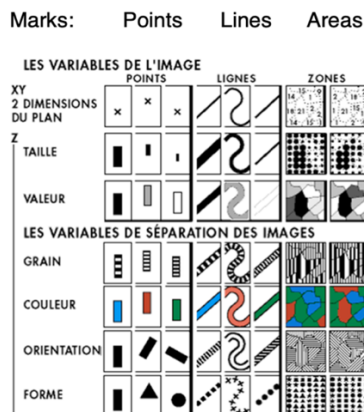

1. Show comparisons, contrasts, differences
2. Show causality, mechanism, systematic structure, explanation
3. Multivariate analysis (show more than one or two variables)
4. Integration of evidence (words, numbers, images, diagrams etc.)
5. Documentation (all evidence must be thoroughly described)
6. Content counts most of all (quality, relevance, integrity)

Fig.7 – A taxonomy for visualisation, (Bertin 1967) '*Semiologie Graphique*' - seven key variables of dimension, size, value, texture, colour, placement and form.

Fig. 8 – The six principles of analytical design (Tufte 2006).

By including Bertin's seven variables and Tufte's six principles (Fig. 8) in design thinking practice, it allows designers to fully consider the ethics of good equity for an inclusive and diverse design messaging campaign. With these principles of design thinking and the inclusion of the semiotic square, a design and analysis framework for fast social media content outputs becomes available, which allows designers to critically evaluate complex relationships between binary terms and modify the nuances within messages and visual content. This framework encourages designers to delve beyond surface meanings, examining how oppositional and complementary concepts interact to shape perceptions and interpretations. By mapping out semantic relationships, designers can ensure that the prolific outputs on digital content are not only engaging but also thoughtful and inclusive, reflecting a deeper understanding of the diverse audience's interpretations and ethical implications. This critical reflection on the sequencing and succession of semantic values is vital in a world of digital semiotic beings.

Without knowledge and understanding of design rules practised through examples iterated through using design principles, it is easy to make mistakes that can have a catastrophic effect on decisions and on the public. As Michael Bierut noted, in relation to the 2000 Presidential election in Florida. "The design of the notorious Palm Beach County "butterfly ballot" in the 2000 Presidential election is certainly one of them. But I would say most of the time this is less about a conscious attempt to manipulate an outcome, and more about pure ineptitude." (Anderson 2013). The example of which can be seen in the print butterfly ballot layout (Fig. 9) a) appears ordered before it was put into practice, however, b) visibly displays the hole punch areas where many residents of Palm Beach were upset as they thought they had voted for Al Gore but may have ended up voting for Pat Buchanan instead (Smith 2018).
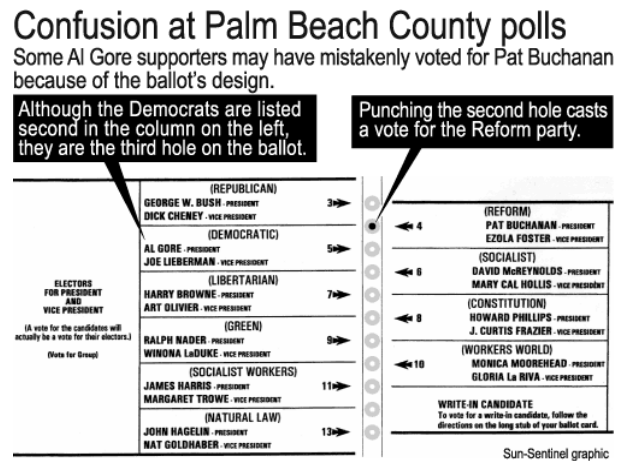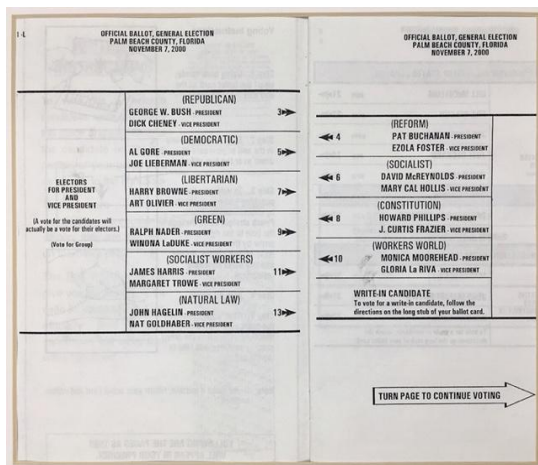

Fig. 9 – a) 2000 Palm Beach County Ballot, (Smith 2018); b) 2000 Palm Beach County Ballot, (Smith 2018).

This example highlights how even the smallest degree of change to a format can have an immense effect on public choices and truly cloud message instructions and meaning, resulting in different outcomes. In a world that has moved to many novice design creators and one which is increasingly being moved forwards by AI tools and processes, this level of error is increasing.

Social platforms (X, YouTube, Instagram, TikTok, Facebook) rely, in significant part, on the relay of memetic messages, images with or without text that emphasize or redefine the direction of communication, visual or otherwise. These relationships carry value in positive and negative communication, where delivering misunderstanding and adding to conflict can be the sole aim of the message. Many alliances and friendships, healthy or otherwise can become established through common interpretation of semiotic messages, and this is where the ethics of graphic design bring a heightened and essential responsibility.

Not even graphic designers are immune from the susceptibility of deep fakes, good design can be applied to all things, and the trustworthiness of image information in the *Digital Now* is a rapidly diminishing attribute. Trust in a product or service has been generated because people know the origin of the quality of manufacturing, or the source of the service. The details of components, ingredients, and the company, that created the product, or the service members and histories of the employees have always been visible, but that is changing with the immersion of AI. In the early days of advertising, products were not so easily consumed, and people were not so easily swayed to buy them, interest had to be harnessed by attempting new methods of communication through print and TV adverts. During this dawn of the merger between graphic design and advertising, companies generated and adapted methods iteratively until they found methods that worked. Graphic design studios, publishers and printers appeared everywhere and worked together with products and services to create messages around their products. This composite collective of creators, advertisers, publishers and producers created the platform for household brands to emerge. Since this time, consumers globally have relied on some form of accessibility or criteria of availability of product origin, company and who was responsible for the saleability of that product.

Technology is always developing, and as it reaches an exponential growth pivot the impact on every facet of our communication and interaction is affected. Generative AI like Midjourney and Dall-E allow users to create artificial images drawn from large datasets, sourced across the internet. There are limited restrictions within the software, but they primarily afford the user the tools to create any image that they want. Since their emergence, many fake images have appeared on social streams, but perhaps one of the most iconic and misleading was created by an anonymous designer at the time, Pablo Xavier, who created and posted an image of the 86-year-old sitting pontiff Pope Francis wearing a puffer jacket (Fig. 10). Many people were, and are still, fooled by this image, assuming that it is not at all impossible for the Pope to go out dressed in a large white puffer jacket.

Fig. 10 – Pope Francis wearing a puffer jacket, CBS News.

In an article on CBS News, Simon Ellery highlighted "CBS News' "Sunday Morning" reporting that Microsoft's chief scientific officer Eric Horvitz, the co-creator of the spam email filter, was among those trying to crack the conundrum, predicting that if technology isn't developed to enable people to easily detect fakes within a decade or so "most of what people will be seeing, or quite a lot of it, will be synthetic. We won't be able to tell the difference" (Ellery 2023). It is of paramount importance that tools are created to enable us to tell the difference between different types of new visual digital artificial content to preserve the pillars of justice for all in any given situation.

When visual iconography is created with themes that are not extreme and fall into 'quirky territory', both professional and the novice designer may perceive the quirkiness over proper consideration and interrogation of details and take the content as a literal visual of the real thing. This degree of masking is leading us into uncharted territories of cognitive, social and cultural and visual semiotics.

The inability to discern the difference between real and fabricated visual content has profound implications on individuals' personal rhythms and how they navigate digital social spaces. In this context, the concept of *idiorrhythm*, in tandem with Barthes' notion of 'proper social distance,' becomes crucial. To maintain a healthy idiorrhythm, all digital users must consistently reflect on the social and ethical implications of their own semiotic responses to the questions, "Who am I?" and "Who am I in relation to others?". This reflection is essential in a digital age marked by the proliferation of digital alter-egos and the representation of many more individualized behaviours online than in the physical world. The blurring line between the real and the virtual is not just a technological issue but a deeply ethical one. If a real human can no longer distinguish another real human in digital spaces, the erosion of trust and authenticity poses serious concerns across generations and cultures. The digital self increasingly diverges from the real self, creating fragmented identities that affect not only personal autonomy but the broader collective social fabric. This shift necessitates a constant re-evaluation of how we, as digital inhabitants, interact with each other, recognizing that our digital actions and representations carry real-world consequences.

Maintaining an idiorrhythm in such a landscape requires not only personal vigilance but an awareness of the collective rhythms of the online world, ensuring that the human element remains at the forefront of these interactions, safeguarding both individual and communal well-being. Pascal Michon discusses Barthes idiorrhythmic communities eloquently in ethical and political terms that remain equally applicable for the 21st Century,

These idiorrhythmic communities and their historical fate constituted for Barthes subjects that greatly concerned our ethical and political reflection at least for two reasons.

On the one hand, they constituted social groups that were entirely dedicated to strengthening the individuation of their members, that is, groups in which both the singular and the collective dimensions of individuation were produced harmoniously, reason for which Barthes termed them, with a calculated oxymoron, "collective-individualistic structures". The idiorrhythmic practices, he noticed, made it possible to find the right balance between life for oneself and life for the others. They created an "median zone," which Barthes praised as "utopian, Edenic, idyllic," that lay between two forms of life both deemed "excessive": complete withdrawal from society or compulsory interaction (Michon 2019).

The *Digital Now* offers the same duality of forms, the same necessity for balance of life for oneself and life for others, where we can perceive our digital selves as "collective individualistic digital structure" This sense of global digital socialism is also observed by Michon who highlights Kate Briggs translation of Barthes: "…a fantasy of a life, a regime, a lifestyle, diaitia, diet. Neither dual nor plural (collective). Something like solitude with regular interruptions: the paradox, the contradiction, the aporia of bringing distances together—the utopia of a socialism of distance." (Barthes 2002, p. 6).

Transitionally, in the current *Digital Now*, an example of a collective individualistic digital structure is being applied in scenarios like the social platforms of influencers like Lil Miquela Sousa (Fig. 11 and Fig. 12).

Fig. 11 − Miquela (@lilmiquela) Instagram photos and videos 2020.

The influencer is a half Portuguese, half Spanish character sans corporeal, has 2.7M followers on Instagram and was created by Trevor McFedries and Sara DeCou using CGI tools. Lil Miquela offers brands and corporations access to make posts and messages, featuring perfect fake images of young people that speak to large young audiences at a button click.

Fig. 12 − Miquela (@lilmiquela) Instagram photos and videos 2020.

To date Lil Miquela has partnered with Samsung, Prada, Calvin Klein with Bella Hadid, etc. The partnership with Bella Hadid created controversy regarding the sexualized content, reported to the Advertising Standards Authority (ASA) for baiting audiences. The psychologist Dr Linda Papadopoulos, an ambassador for Internet Matters, stated, "This potentially allows companies to easily manipulate young people by using live data to create the most influential series of images." (Booth and correspondent, 2019), much like classical conditioning that came before, young people can be behaviourally influenced to perform in a certain way, which is particularly alarming in presentist culture. Had principles of the design manifesto (Garland 2021) been incorporated into this campaign from the start, the dangers of including flammable sexualized content would have been significantly reduced.
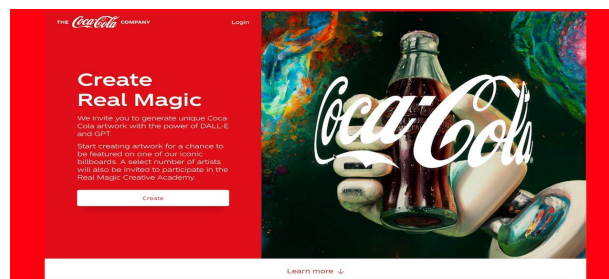

Fig. 13 – Coca Cola website (*Coca-Cola® Create Real Magic* 2023).

An example of a method of getting in front of the negative effects of deep fakes was seen in March 2023 when Coca-Cola promoted a creative task campaign called "*Create Real Magic*", an opportunity inviting digital artists to access an AI space (Dall-E and GPT) created by Coca-Cola containing a selection of Coca-Cola copywritten logos and artwork (Fig. 13). Coca-Cola aimed to utilise AI beyond marketing to include external input, the externally generated images were displayed at Piccadilly Circus and Times Square in the UK. This was a guided manipulation of seemingly fake artworks that Coca-Cola itself governed to promote interactivity and external free brand publicity. As the task was time-dependent, the group formed and dissolved on the behest of the company, and this can be viewed as a perfect example of how an in-house design team identified and harnessed a pool of potential fakes, in the same way that fashion houses promote fake branded fashion and re-purposed the wealth of inputs to channel an ad for museums.

These recent design transformations have helped to establish more inclusive social groups on the internet around AI, and this can be seen in an AI advert, *Coca-Cola® Masterpiece*, produced by Coca-Cola last year (Fig. 14). The advert is a mixture of live action shots, digital effects and stable diffusion AI. This heralds the start of using completely AI derived visuals drawn from the algorithmic manipulation of large datasets.

Fig.14 – Images from AI advert (*Coca-Cola® Masterpiece*, 2023).

The combination of these design transformations and the output of prolific novice designers led to the development of this research, which focuses on the comprehension of AI portraits from the perspectives of professional and novice designers. Semiotic considerations for these groups were meaning, message, identity, culture and opinion.

2. Methodology

The process of creating a dataset of digital visual design messages began with selecting themes and prompts to curate a series of 13 images (Fig. 15). This was done via Midjourney and Illustrator, as co-design between AI and designer.

20 participants (gender parity across both groups) were invited individually to comment on a series of AI-generated images on digital design boards regarding the associated text and the meaning in the images. Enquires were directed towards how textual and visual messages affected the series. And participants were each asked which images they considered most compelling and why? Questions were left deliberately open and vague, and without inference to evoke more direct responses.

The AI portraits in this research were generated using simple generic keywords with no additional modifications to create the global subject group, around the phrases western, tribal, colours, gender, camera and design influence variations. The visuals were not based on vocational or demographic-specific criteria. The images were placed within grids to allow for a series title and an image title using Helvetica font and Roman numerals. Image titles combined multiple semiotic system, visual depiction, symbolic elements, and gestures. For example, each "Generative Being" represents a combination of visual elements that imply the signification of identity, technology, and evolution, similarly with the titles, "Ready for Life," "First Breath," and "Forging the Future.". The images and format were chosen to echo old portraits as displayed in photographic series of National Portrait Gallery, where demographic identities were left unassigned, participants were invited to answer a series of questions alluding to semiotic visual message authority to elicit input from professional and novice designers regarding the message, meaning, identity, culture and opinion of the participants.

This case study forms part of a larger body of work including additional case studies related to framing, communication channels and message meaning.
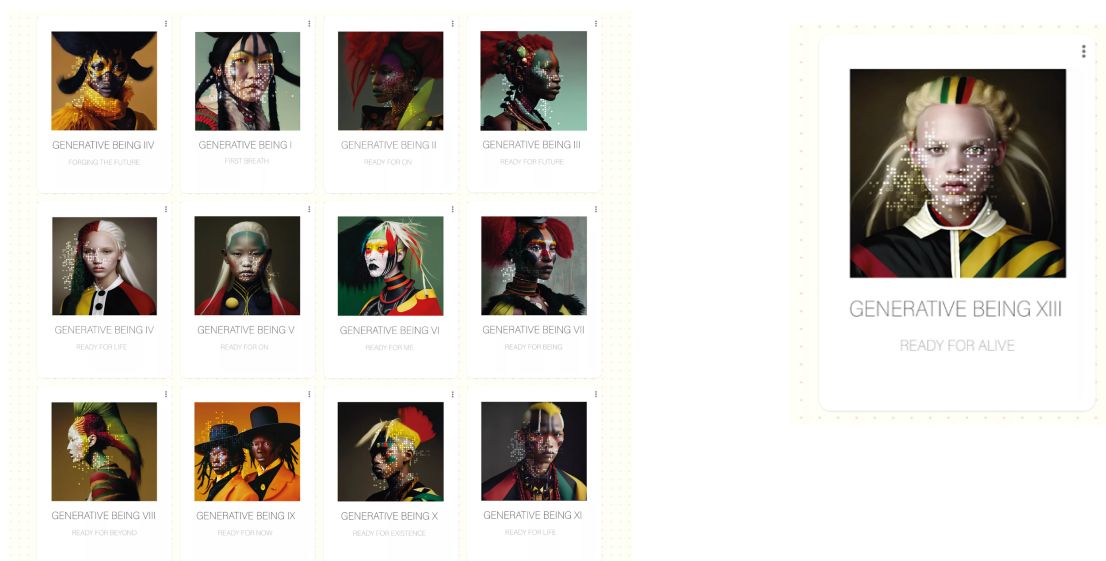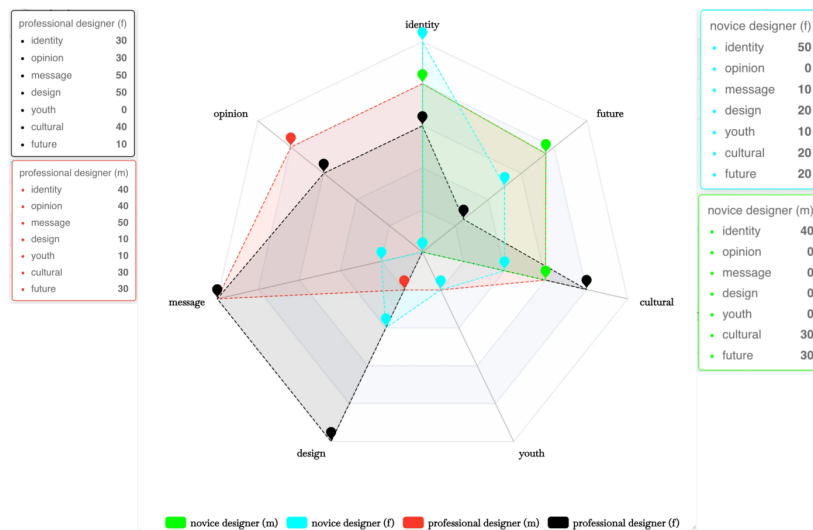

Fig.15 – AI portrait series.

3. Results

Fig.16 – Professional and novice design participant responses.

Professional design participant responses were 100% directly concerned about the message, with 60% considering design and 70% having strong design opinions. The themes of youth, future, identity and culture were chosen in professional design participant responses, where interpretation was between 10% and 70% (Fig. 16).

Novice design participant responses were not directly concerned about the message, with only 10% of the cohort making comments about the message, and 20% considering the design and none eliciting an opinion on the overall design. Themes of youth, culture, future and identity were chosen in novice design participant responses, where interpretation was between 10% and 90% (Fig. 16).

Only 10% of professional and novice designers considered the image set to be reflective of young people. Both genders emphasised identity in novice designers, where professional designers focussed on message. Interestingly, the greatest difference between gender responses was seen in design, with 40% less men considering design in the professional cohort compared to no consideration of design by men in the novice cohort (Fig. 16).

Based on vocational background, it is reasonable to assume that experts in the field of design would linger on specific elements of an image, notable, layout, cropping and framing, typography, colour, form, angle, style, variation of details, theme inspiration, possible AI prompts, and this was observed as a difference between professional and novice designers. What was surprising, was that many of the assumed behaviours occluded usual design critique. This may have occurred for many reasons outside the scope of this study. To give an idea of the attention to detail displayed by the participants in both groups, no comments were made to draw attention to the only two images in the set to have an orange background, and those two characters portrayed are also dressed in orange, where all the other images are made up of variations of RGY. The set was also predominantly female (only two males in thirteen images), and no one commented on the gender variations. There was also no comment on the erroneous numeral on the first image (Generative Being IIV).

Both novice and professional cohorts shared a communicative gap in cultural freeness when describing the semiotic ground of iconicity, indexicality, and symbolicity of the visual content of the images.

These findings display the ad hoc nature of human perception as it relates to AI portrait recognition to date. While there are many associated environmental factors at play in any observation tasks, even with a professional background, rules and ethics are not consistently applied in everyday practice, which in these times informs all digital visual communication design.

Comparatively, when AI was prompted to deliver a response to the dataset, a more thorough response was elicited that delivered more precise design and semiotic considerations (data from separate study).

4. Discussion

The semiotic analysis of novice and professional responses highlights a critical ethical concern: the ability to distinguish real from fake AI is not just a technological issue but a semiotic and interpretive challenge as demonstrated by the results of this study. Novices, who engage more superficially with the images, are at a higher risk of being deceived by AI-generated content, while professionals show a deeper understanding of the complex semiotic systems at play. A further complication outlined in this paper, is the apparent oversight (in this cohort) of the syntagmatic relationship, the consideration of how signs are organized together (Zlatev, Sonesson, Jordan 2023). The ethical implications are clear: as AI-generated content becomes more sophisticated, individuals must develop the semiotic literacy needed to critically interpret these representations both for visual and textual design messages.

The outcomes of this study clearly demonstrate the need to establish rules for the application of universal digital design ethics that standardise variations in human computer interactions of all digital visual designers (Barthes 2002). All digital visual messages have the potential to implicate AI. The world is collectively moving through veils of AI with no recognisable digital cultural classification system. The material, tangible and palpable qualities of symbols are degrading in the digital space. Without correct relationships between signs and meanings, the direction of messages map to unknown areas. Humanity requires a structured framework of semiotic, symbolic representation through AI with specific ethical considerations as standard (Greimas 1966, Sonesson 1994, Leone 2022, Zlatev, Sonesson, Jordan 2023, D'Armenio, Deliège, Dondero 2024, Morra *et al.* 2024). Through the findings of this research a combination of the vital methods of semiotic analysis from the semiotic square, content that sits within the four social levels of meaning, semiotic grounding and the semiotics of machinic co-enunciation are essential components of ethical considerations.

This study highlights concerns related to perception and design ethics that recognise the value of digital design ethics in maintaining digital semiotic visual message authority of signs in an AI landscape, supporting the philosophies of the designers responsibility to the public (AIGA), the Design Manifesto (*First Things First 2014*, 2024), global ethics as highlighted by (Apel 2000, 2007), and the EU AI framework (EU commission 2019) to redefine the roles of graphic design and digital visual communication for digital novice and professional designers using AI.

For the widest consumption of digital design ethics, the inclusion of Bertin and Tufte's rules and principles of design (Bertin 1967, Tufte 2006), where blanket acknowledgement by all digital designers includes education and incorporation of the taxonomy for visualisation and analytical principles applies for all digital design images. Failing to do so could lead to a world where AI manipulates identity, agency, and emotion in ways that blur the lines between real and artificial, with significant consequences for trust, authenticity, and autonomy in the digital age.

As use of AI is moving from gradual to full immersion new issues are arising, for example, talented creatives are now being asked to prove what creative tools they used to make their work as they are being accused of using AI. In a recent article in Creative Bloq a Blender artist was asked to prove their work was not AI (Foley 2024). Additionally, the pace of IT and computer graphics is now demanding the use of AI, as Nvidia CEO Jensen Huang stated at a recent Goldman Sachs Communacopia & Technology Conference,

> We can't do computer graphics anymore without artificial intelligence. We compute one pixel, we infer the other 32. I mean, it's incredible. And so we hallucinate, if you will, the other 32, and it looks temporally stable, it looks photorealistic, and the image quality is incredible, the performance is incredible (Edser 2024).

The non-linear and unprecedented impact of AI is hard to track and its dominance in digital visual spaces is leading to tangential changes that are accelerating past human cognitive ability.

While there are many routes to achieving a universal ethical standard for the digital space, it is incumbent on designers to achieve the values they wish to apply for a common ethic in maintaining semiotic visual message authority of signs for the future of an empathic shared global AI digital space, with naturally evolving semiotic advances.

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