

**CLOUDED CONSCIOUSNESS:
SAND AS A COMMUNICATION
INTERFACE BETWEEN
INTERACTIVE TECHNOLOGIES
AND THE SUBCONSCIOUS MIND
(PART I)**

SIMONA-DIANA CHIRU



Interactive Technologies for Performative and Media Arts MA,
I.L. Caragiale UNATC, Bucharest, Romania
diana.chiru@hotmail.com

Abstract: The present article¹ explores the connection between contemporary technological advancements (cloud systems) and Carl Jung's concept of the collective unconscious. With the rise of artificial intelligence (AI), there is a growing need to have a deeper understanding of cyberpsychology while also engaging in conversations around the ethics of technology and data ownership and privacy. Clouded Consciousness is an interactive art installation that uses sand as a communication interface between the subconscious mind and the cloud. Carl Jung's work is used to understand and classify data we leave behind in the digital realm, revealing subconscious behavior patterns. The intention is to invent a special kind of search engine, distinct from those exploiting personal data for targeted ads. Instead, it invites users to discover insights about their subconscious mind, fostering self-awareness and prompting reflection on the motivations behind their online searches. By writing in the sand snippets of information that are usually stored in the cloud, like online activity or internet searches, users can connect with their archetype and explore a personalized interplay of projected mandalas, generated by AI. This article employs a multidisciplinary approach and investigates how the digital era resonates with Jung's theories. The aim of the research is to uncover the potential for the digital landscape to evoke and amplify archetypal motifs, influencing individual and collective thought patterns.

Keywords: interactive technologies, AI, mandala, sand, C.G. Jung, subconscious mind, collective unconscious, communication interface, Clouded Consciousness, cloud, art installation.

How to cite: Chiru, S.-D. (2024) "Clouded Consciousness: Sand as a Communication Interface between Interactive Technologies and the Subconscious Mind", *Concept* 2(29), pp. 143-159. DOI: <https://doi.org/10.37130/f00xn458>

Introduction

Clouded Consciousness is an interactive art installation that aims to create an immersive and unforgettable sensory experience. This project uses sand as a communication medium to explore the realms of deep embedded data and information stored in the cloud by using different internet tools. By writing in the sand snippets of information that are usually stored in the cloud, like online activity or internet searches, users can connect with their archetype and explore a personalized interplay of projected mandalas, generated by AI. The choice for sand as a communication interface comes from the desire of creating a tangible and very physical component used for connecting to the ethereal yet intangible cloud, which can be viewed as a digital metaphysical representation of Jung's collective unconscious.

¹ Part II of the present study is going to be published in the next issue of our academic journal: *Concept* 1(30)/2025.

The introduction of this article analyzes cyberpsychology, a relatively new field of study that focuses on the mental health effects of using technology and draws a parallel between the “self” and the “digital self”, the mask that people wear in the digital realm. Delving further into the depths of the human psyche, the focus shifts towards archetypes, a concept related to Carl Jung’s collective unconscious, which can be explored through the symbolic language of mandalas – the latter being important tools for exploring the subconscious mind. The overlap of cyberpsychology and Jungian psychology sets the stage for a holistic exploration, acknowledging the symbiotic relationship between the technological and psychological realms.

Nonetheless, technology is built upon a framework that should be critically assessed by analyzing the issues of originality and ownership rights over data, especially in the context of artificial intelligence (AI) in art creation. This ethical discourse becomes a pivotal link between the psychological aspects previously mentioned and the potential of technology in art installations. The synthesis of cyberpsychology, Jungian psychology, and ethical reflections lays the groundwork for the final part of the article, which includes observations from the interaction between the audience and Clouded Consciousness. This analysis addresses the technological aspects, assessing the reliability and consistency of the algorithm in interpreting user inputs while also considering future investigations and questions to be explored.

1. Cyberpsychology in the era of Cloud computing and AI

This first section discusses the fast advancements of technology that have allowed people to slowly build and shift towards a digital persona. A digital persona (de Kerckhove & de Almeida, 2013, pp. 277-287) is the representation of an individual in the digital world: either on social media or other online platforms. It can include different types of information, such as their name, interests, profile picture, and various personal details. The individual creates and controls the digital persona, but it can also be shaped by others (via social media platforms) through their interactions and perceptions of the online self.

Examining the effects of visible traces (Baldauf, et al., 2017) (e.g., browsing history or likes/comments) on identity dynamics reveals social media’s active role in constructing this digital identity. These cues contribute to the reflexive process of recognizing and appropriating lived experiences within one’s digital persona, resulting in a dynamic interaction which prompts essential questions about the extension of self in the online realm. Previous research conducted by Betsy Sparrow, Jenny Liu, and Daniel M. Wegner (Sparrow, et al., 2011, pp. 776-778)

on transactive memory (Wegner, 1987, pp. 185-208) (a theory that focuses on how groups collectively remember and process information) has explored the complex interplay between offline and online identities. When users confront their digital footprint, a temporary state of reflexivity emerges, enabling actions that shape and direct the ongoing narrative of one's identity in the digital landscape.

This has paved the road to an emergent new field of study known as cyberpsychology, which aims to understand the impact of technology on human behavior and mental health (Kirwan, 2010, pp. 69-84).

What is the purpose of a digital persona?

The internet has made it possible for people to create and present a version of themselves to a global audience. The digital world offers the tools for a much more abrupt change, leading to curating an idealized self on social media (Marom, 2017). One of the purposes of the digital persona is to serve as a form of self-expression. The internet promises a platform for individuals to share their thoughts, opinions, and interests with a wide audience while also engaging and connecting with like-minded individuals.

From a socio-political point of view, in countries where free speech has serious consequences, the digital persona can serve as a tool for anonymity, which can be useful for people who want to express their opinions or values without fear of repercussions.

However, a counterargument highlights the potential drawbacks of social media platforms, despite their promises of freedom of expression and data/identity protection. Instances like the Cambridge Analytica (Richterich, 2018, pp. 528-543) scandals exemplify the misuse of these platforms in political conflicts. Serious ethical concerns arise, especially in the context of data ownership (Reyman, 2013, pp. 513-533).

For instance, while Facebook's data use policy claims user ownership of posted content, it also claims the right to collect and use a broad category of information categorized as data, which includes personal details (name, email address, birthday) as well as more comprehensive data like browsing activities, metadata, and information from advertising and business partners.

Upon requesting my personal data from both Facebook and Instagram, I was presented with a comprehensive collection of detailed history of my online activities, encompassing likes, comments, user interactions, messages, IP locations, personal interests, just to name a few. While the sheer volume of information allowed me to gain insights into the extent of data collected about me, I was not informed about the specific use of this data. The opacity surrounding how data is used raises concerns about transparency.

Who really owns the data? How can we ensure that the promises of freedom of expression and data protection translate into responsible and ethical practices? These questions reveal the need for a critical examination of data ownership and privacy practices within the framework that governs social media platforms.

We can argue that depending on the user's motivations and intentions, as well as the platform's design and policies, the digital persona can serve different purposes.

Even though a person and their digital persona can be two completely different entities, the primary focus of this article is to draw connections between the rapid technological advancements shaping the digital persona and the psychology behind human interactions in the digital landscapes. The goal is to harness the capabilities of AI to transform one's digital footprint into a powerful tool that reveals the motivations behind specific actions, going beyond the conventional use of personal data by technology for targeted advertising. Thus, the focus shifts towards leveraging these traces to foster a deeper understanding of individual behavior and choices.

This subject becomes even more relevant as new technologies emerge, and while the research on technology itself is important for future developments, a better understanding of the relationship between people and the said technology can lead not only to a more ethical technological progress but also to a more conscious way of interacting with it.

II. Carl Jung's collective unconscious

The exploration of cyberpsychology in the preceding section introduces the notion that our online presence, often portrayed through an idealized digital persona, serves as a curated extension of the self. This curated representation resembles Carl Jung's concept of archetypes, wherein certain universally recognized symbols and patterns emerge from the collective unconscious. Transitioning to the discussion on Jung and the collective unconscious, it becomes intriguing to consider the possibility that the archetypal structures he identified might extend into the digital world. The carefully constructed online identities, like archetypes, could be recurring patterns, transcending individual experiences. Furthermore, is it possible that the cloud might be a contemporary manifestation of Jung's collective unconscious, capturing the collective digital experience and expressions of the online community?

Part of Jung's contributions on the topic of the collective unconscious can be found in "The Archetypes and the Collective Unconscious", where he describes it as a part of the psyche which can be distinguished from the personal unconscious, lacking a dependence on personal experiences for its origin (Jung, 2014).

The main difference between the personal and the collective unconscious lies in the fact that while the personal unconscious is formed on parts that have been forgotten or repressed throughout time, the contents of the collective unconscious are not acquired individually but rather inherited across generations (Jung, 2014, pp. 42-53).

The argument that Jung presents in his book is that beyond our immediate personal consciousness, which is largely individual and consists for the most part of complexes, there exists a second psychic realm that is shared, universal, and impersonal among all individuals, made up of archetypes. In order to have a better understanding of the collective unconscious, it's valuable to have in mind Jung's perspective:

And the essential thing, psychologically, is that in dreams, fantasies, and other exceptional states of mind, the most far-fetched mythological motifs and symbols can appear autochthonously at any time, often, apparently, as the result of particular influences, traditions, and excitations working on the individual, but more often without any sign of them. These primordial images or archetypes, as I have called them, belong to the basic stock of the unconscious psyche and cannot be explained as personal acquisitions. Together they make up that psychic stratum which I have called the collective unconscious. (Jung, 2014, pp. 107-113)

II.1. Archetypes

As mentioned above, the archetypes exist within a realm that transcends the time constraint of a single human lifetime, evolving over an extended evolutionary period. Jung believed that archetypes introduce an unfamiliar mental existence (originating from a distant past) into our transient consciousness, encapsulating the mindset of our unidentified ancestors: their manner of thought, emotional experience, perception of life, deities, individuals, and the world itself. The presence of these archaic layers likely depicts humanity's belief in reincarnation and recollections of "past experiences" (Jung, n.d., pp. 358-381).

The human mind tends to symbolically express what it struggles to grasp intellectually (Meadow, 1992, pp. 187-195). The potential to formulate archetypal meanings exists in all humans prior to acquiring language. Archetypes function as templates for organizing recurring universal themes in human experiences, and even though the expression may vary across cultures and eras, it still reflects the fundamental human experience as its core.

For instance, the tension between one's desired self-image and contrary inner urges is a universal human encounter. Thus, two main archetypes can be distinguished: "the self" and "the shadow" (St. Hilaire, 2018).

The "self" stands as a central archetype, interconnected with all others. According to Jung, "the self" represents the convergence of both conscious and unconscious aspects. On the other hand, the shadow archetype is characterized as the obscure layer of an individual's personality, comprising all the unacceptable emotions, thoughts, reactions, desires, and notions that a person acknowledges but keeps confined within the unconscious. These elements are deliberately separated and distanced from one's self-identity. Jung interprets this as a defensive mechanism, enabling individuals to safeguard their consciousness or ego. Expanding on the theme, there are additional Jungian archetypes, such as "the anima" (deriving from the Latin form "soul", referring to the totality of the unconscious feminine psychological qualities that a man possesses), and "the animus" (deriving from the Latin form "spirit", referring to the unconscious masculine qualities that a woman has) (Hillman, 1985, pp. 17-19).

A central part of the process of choosing the archetypes, as well as the representation symbols featured in this article, especially those revolving around the feminine and masculine, was based on Susan Rowland's views in chapter 10, "Anima, Gender, Feminism", from the book *Teaching Jung*. Rowland, who previously held the position of reader in English and Jungian studies at the University of Greenwich, approaches Jung's theory with a feminist lens. Her examination unveils a range of ingrained gender stereotypes present in Jung's work. The anima and animus archetypes have often been critiqued for reflecting Jung's own debatable and individual perspectives on the cultural roles assigned to men and women.

Susan Rowland goes beyond critique, demonstrating how Jungian psychology can serve as an ally in the feminist movement against patriarchal dominance. She highlights the compatibility between Jung's call for increased mindfulness towards nature's wisdom, the profound rhythms of instinctual life, and his psychological assessments of contemporary societal challenges. This alignment resonates strongly with the fundamental principles and practices of feminist theory that have been central in the recent decades. Furthermore, she argues that the Jungian unconscious holds the potential to evoke potent feminine symbols and significance just as effectively as it can create masculine symbols: "A society may inherit patriarchal motifs, but the individual possesses archetypal androgyny. Individuation inevitably challenges patriarchy" (Rowland, 2011, pp. 169-182).

II.2. Mandala as a tool for mindfulness

The Red Book is a remarkable work in which Jung chronicled his active imagination fantasies and crafted his own depictions of archetypes, mythology, and mandalas. This process not only aided him in navigating a personal crisis but also served as a milestone for his groundbreaking theories on the unconscious, collective unconscious, anima, animus, and other concepts (Cutri, n.d.).

Jung characterizes mandalas as enchanting circles housing specific design patterns that he observed to possess a timeless and cross-cultural essence. These patterns manifest not only in the mandalas fashioned from Tibetan traditions or the sand paintings but also in the illustrations found in ancient, medieval, and Renaissance alchemical works (Okamuro & Okamura, 1997, pp. 125-134).

Emerging from Buddhist traditions as a tool for meditation, mandalas embody a form of sacred geometry symbolizing unity, completeness, and the individual. Mandala creation typically commences at a central point and evolves through concentric arrangements, comprising circles and layers that encapsulate diverse parts of the Tibetan Buddhist cosmos (Roquet & Sas, 2021).

C.G. Jung suggests that the appearance and content of mandalas in therapy may vary, depending on the stage of the therapeutic process. These mandalas correspond to specific psychological phases, which are associated with particular motifs. Psychotherapist Maralynn Hagood Slegelis notes that the process involves a reconfiguration of the individual's personality, essentially establishing a new center. The creation of the mandala is seen as a means to facilitate this integration, thus aiming to integrate the conscious and unconscious aspects of an individual (Slegelis, 1987, pp. 301-311).

Claudia Daudén Roquet and Corina Sas push forward the Jungian theory, introducing the Anima (Roquet & Sas, 2021) system, an interactive mindfulness-based technology aimed at enhancing mental well-being in individuals with a history of depression. Utilizing a brain-computer interface, the system enriches mandala coloring with a generative color palette linked to unfolding mindfulness states. The system uses two tablets and a non-intrusive mental activity headband. While wearing the electroencephalography headband, colors based on the current mental states are generated on the wooden palette and can be used to color the digital mandala.

Participants expressed that the generated colors revealed aspects of themselves that would be challenging to access through traditional analog practices. The study results indicated a positive impact on emotional well-being when coloring mandalas, as participants discovered more about their feelings by being mindful of their coloring approach.

III. AI Ethics

Given the circumstances and the technological development, especially in the Artificial Intelligence area, there are many questions to be asked as we witness the rise of AI. Important ethical questions were proposed even before the first AI system was built.

Isaac Asimov made an attempt to articulate the laws that intelligent robots should follow, comprising three fundamental principles (Asimov, 1950):

- (1) a robot may not injure a human being or, through inaction, allow a human being to come to harm;
- (2) a robot must obey the orders given it by human beings except where such orders would conflict with the First Law;
- (3) a robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Asimov later added another rule, known as the fourth or zeroth law: “a robot may not harm humanity, or, by inaction, allow humanity to come to harm.”

Fast forward a few decades, and intelligent robots have become highly prevalent in our daily lives. Although not exactly as Asimov envisioned, we are surrounded by intelligent machines: robotic vacuum cleaners, autonomous drones, industrial and medical robots, even self-driving cars, surveillance systems, and AI recruiting tools. These machines are able to independently operate and make decisions, all thanks to advancements in artificial intelligence.

We have to take note that AI systems are not developed in isolation but are intertwined with existing power dynamics (Siapera, 2022, pp. 55-65). Research exemplified by Ruha Benjamin revealed that AI applications can reinforce racial biases already present in society. For instance, predictive policing and recidivism algorithms, relying on historical and demographic data, encode systemic inequalities within the criminal justice system. (Ruha, 2019)

Automation is often sought after for its ability to deliver quicker results with fewer resources, making an AI recruitment tool an appealing prospect. Amazon managed to build a system that went through numerous job applications, pinpointing the top candidates. However, there was one issue: the system exhibited bias, teaching itself that male candidates were preferable (Martin, 2022). The bias stemmed from the fact that the computer models were trained by observing patterns in resumes submitted to the company over a 10-year period. Given the predominantly male nature of the tech industry, where most submissions came from men, the system learned to favor male candidates. This preference

was evident in the technology's inclination towards candidates who described themselves using language more commonly found on male engineers' resumes.

This brings us back to the crucial recognition that AI systems do not develop in isolation but are deeply entwined with existing power dynamics. These examples highlight the importance of understanding the impact of data used in AI training models, emphasizing the need for addressing biases and ethical considerations in the development and deployment of such technologies.

III.1. Data acquisition

The effectiveness of an algorithm relies heavily on the quality of the data it processes. Data often contains imperfections that enable algorithms to inherit biases from previous decision-makers. Alternatively, the data may mirror prevailing biases ingrained in society.

It is essential to acknowledge that unintended biases, as illustrated in the mentioned examples, can have significant and adverse impacts on people's lives (Barocas & Selbst, 2016, pp. 671-732).

However, this represents just one part of the equation. In the realm of big data, it is crucial to ensure, on one hand, that the data used is unbiased to prevent the perpetuation of racial, gender, or any form of discrimination. On the other hand, it is equally important to uphold data transparency. This involves obtaining consent for data usage, ensuring the original data owners agreed to its utilization, and maintaining a comprehensive history of the data used to train models. This traceability not only guarantees transparency but also facilitates a better understanding of the model's output.

Consider image generator models as an example. Models like Midjourney, DALL-E 3, or Stable Diffusion, trained on massive datasets, lack public records detailing the specific data used. Moreover, artists did not provide consent for their publicly available pictures to be part of the training data, which becomes a more significant issue when considering revenue generation through subscriptions. This situation infringes upon the rights of artists and underscores the importance of ethical data practices in the development of such models (Bendel, 2023).

III.2. The legitimacy of AI art

This brings us to the next question: Can AI-generated art be considered legitimate art?

To explore the nature of AI-enhanced creativity and investigate the possibility of human-algorithm collaborations in unlocking human creative potential, it is important to have a conversation with the parts involved, the artists

themselves, and ask what the implications of using and integrating this technology into their practice are.

But first and foremost, what is creativity? Is it something we're born with, or is it something we acquire through training like any other skill?

Generally speaking, creativity is defined as the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems, communicating with others, etc. In order to be creative, you need to be able to view things in new ways from a different perspective. It involves the process of thinking imaginatively and generating original concepts, connections, or interpretations that are not necessarily limited to a specific domain or field. Creativity is also about the synthesis of existing knowledge, experiences, and skills to produce something new, unique, and meaningful (Gaut, 2010, pp. 1034-1046).

Creativity is not confined to artistic endeavors but can be found in various aspects of human life, including science, technology, business, literature, and everyday problem-solving. It's a dynamic and iterative process that involves generating and refining ideas.

When exploring the use of AI technologies in art creation, we can also think about the Creative Style Questionnaire (CSQ) and its five creative types: creating and originating, challenging and risk-taking, adjusting and changing, communicating and selling, and executing and realizing. The CSQ provides a framework for understanding individual creative tendencies and styles across different domains (Kumar, et al., 1997, pp. 51-58).

My position is that the collaboration between human creativity and AI algorithms presents a unique opportunity to unlock novel artistic possibilities and expand the boundaries of artistic expression. In this context, the focus is not on the creativity of AI technology itself, as that is a separate topic concerning whether AI can possess creativity. Instead, we explore the utilization of AI as a tool or medium of expression for human creativity. The synergy between human creativity and AI algorithms presents an intriguing opportunity to push the boundaries of art. However, it is essential to consider the potential drawbacks and ethical implications associated with the use of AI in art creation. Questions arise regarding the originality and authorship of AI-generated artworks.

What is happening now is a gradual integration of Machine Learning (ML) capabilities into the toolkit of fine artists and new media artists. This integration brings changes in their creative process, such as new activities related to data creation, curation, and refinement. It also involves specific considerations in selecting, post-processing, and exhibiting ML-based artworks.

So perhaps, as time goes by and more and more artists integrate AI tools into their practice, there will be a shift into what we know as "creative styles", with

a new emerging type: selection creativity or fast prototyping creativity, a creative style derived from the extensive use of ML algorithms in terms of art creation (Atkinson & Barker, 2023, pp. 1054-1069).

In the art world, new media or technologies have historically followed a progressive wave of integration. Initially, they may appear to threaten established forms and artists themselves. For instance, photography was seen as the end of painting, video as the end of photography, and interactive art as the end of static artworks. However, human agency remains crucial to break the loop. Humans are still fundamentally needed to generate outputs that hold meaning for other humans. Therefore, what we observe is not pure automation but rather a state of complementarity, an ongoing conversation.

When considering human and machine creativity, artists emphasize a difference in scope. While ML models can produce surprising variations of existing images, the artist's irreplaceable role lies in providing these images with artistic context and intention. Exploring the significant intersection between artificial intelligence and art creation, it is important to also listen to the parties involved, meaning the artists themselves, who have provided some insights in the report titled *AI and the Arts: How Machine Learning is Changing Artistic Work* (Poin, et al., 2022).

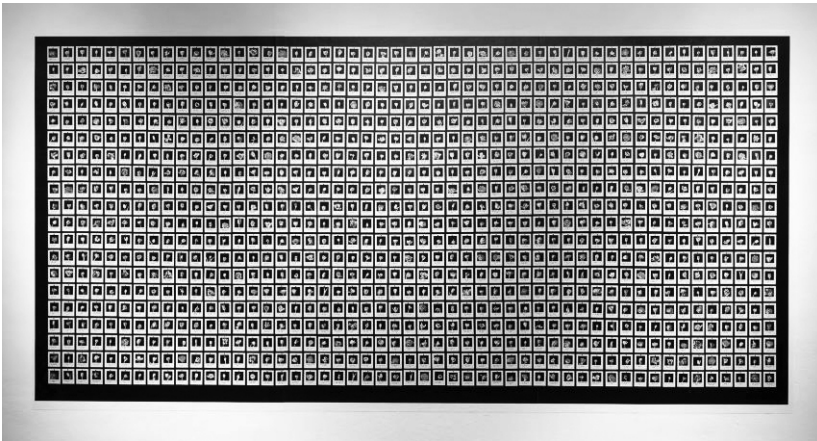
The artists' voices and insights captured in the report provide valuable perspectives on the integration of AI tools within the creative process. Their experiences highlight the dynamic interplay between human and AI creativity, emphasizing the need for ongoing dialogue, exploration, and understanding to harness the full potential of these technologies in the pursuit of artistic expression.

Anna Ridler, an artist and researcher, delves into systems of knowledge and the creation of technologies to enhance her understanding of the world. Her focus lies in exploring concepts related to the natural world. In her creative process, Ridler frequently engages with collections of information, especially datasets, to craft unique and unconventional narratives:

The thing that I find most difficult, and the thing that did change when I included machine learning in the process, is the fact that it's like feast and famine with the different parts of it. There's lots of analogue work, like photographing or drawing, and then lots of work coding. (Poin, et al., 2022)

Anna Ridler's installation is a compilation of thousands of hand-labeled tulip photographs used as datasets for her artworks *Mosaic Virus 2018* and *Mosaic Virus 2019*. By turning the dataset into an artwork, Ridler aims to

highlight the craftsmanship and human effort involved in machine learning, often concealed by algorithmic processes. This crafting process, though repetitive and time-consuming, reveals a skill in dataset creation. *Myriad (Tulips)*, covering over 50 square meters, offers a tangible sense of the dedication and resources invested in constructing a dataset, providing insights into this aspect of Ridler's artistic practice.



Photograph of *Myriad (Tulips)* by Ana Ridler, an installation of thousands of hand-labeled photographs of tulips; these photographs were later used as the dataset for *Mosaic Virus 2018* and *Mosaic Virus 2019*. By choosing to make the dataset an artwork, it draws attention to the skill, labor and time that goes into constructing it, whilst also helping to expose the human element in machine learning, usually hidden by algorithmic processes.

Photo source: <https://annaridler.com/myriad-tulips>

Sofia Crespo, an artist intrigued by biology-inspired technologies, centers her exploration on how organic life employs artificial mechanisms to imitate and evolve. This concept implies that technologies are inherently shaped by the organic life that birthed them, rather than being entirely separate entities. Crespo draws parallels between the techniques of AI image formation and the creative and cognitive expressions of humans in recognizing their world. The artist stated:

I feel like they are statistical methods, right? You can explore data, extract information from it, and I see it as automated creation, which is really interesting. It doesn't mean that I don't learn from it. I really learn a lot of things [...] What's the difference between doing a creative coding project and working within an artificially intelligent algorithm to generate art? Both involve me sitting on my machine trying to

understand something using code repositories. You're always stealing codes that somebody else wrote, remixing it, making it do something else. It's part of the practice. Why does one sound so charming, so mysterious, and the other so normal? (Poin, et al., 2022)

In the Critically Extant project, Sofia Crespo explores the limited knowledge of the natural world embedded in the data openly available in our digital lives. Employing AI algorithms trained on millions of open-source nature images and ten thousand species, Crespo generates visual representations of critically endangered species with minimal online presence, particularly on social media. Given the incomplete representation of known species in our available data, the animated specimens in this series may bear little or no resemblance to their intended depictions, underscoring the challenges in achieving balanced representation in digital spaces.

Photograph of *Critically Extant* by Sofia Crespo, a project exploring the limits of available data as a means of engaging with critically endangered species. By only using open, publicly available data, representations are generated that reflect upon how little (or much) they are present in our everyday, digital lives.

Photo source: <https://criticallyextant.com/>



Zygonychidium gracile
(Streamertail)
Kingdom: Animalia
Phylum: Arthropoda
Class: Insecta

Fimbristylis
Hirsutifolia
Kingdom: Plantae
Phylum: Tracheophytes
Class: Angiosperms

Fimbristylis
Hirsutifolia
Kingdom: Plantae
Phylum: Tracheophytes
Class: Angiosperms

While AI can generate aesthetically pleasing outputs, its ability to imprint soulfulness onto the artworks and evoke genuine emotional responses is still limited. The role of the human creator remains integral in contextualizing and understanding the present cultural moment, ensuring that art retains its ability to connect with audiences on a profound level.

Conclusions

In this part of the article, my research focuses on integrating a wide range of ideas, setting the stage for later developments. It delves into cyberpsychology, which examines the psychological impacts of technology use, particularly the relationship between the “self” and the “digital self” and how it’s connected to Jungian archetypes. The research also focuses on the use of mandalas as symbolic representations of the subconscious mind while also emphasizing the ethical concerns around AI in art creation, particularly regarding originality and ownership of data.

Although these theoretical frameworks are not yet obviously connected, the second part of this article links all these notions together through *Clouded Consciousness*: an art installation which uses sand as a communication interface between interactive technologies and the subconscious mind. The prototyping and development of this installation, along with an analysis of visitor interactions, are examined to assess how effectively the system interpretation is and how it ultimately reveals new insights into the symbiosis between human consciousness and digital experience.

References:

1. Asimov, I. (1950) *Run Around. I, Robot* (The Isaac Asimov Collection ed.), New York: Doubleday.
2. Hillman, J. (1985) *Anima: an Anatomy of a Personified Notion*, Dallas: Tex.: Spring Publications.
3. Jung, C. (2014) *Collected Works of C.G. Jung: The Significance of Constitution and Heredity in Psychology* (Volume 8: Structure & Dynamics of the Psyche), New York: Princeton University Press New.
4. Jung, C. G. (2014) *Collected Works of C.G. Jung* (Volume 9: The Archetypes and the Collective Unconscious), New York: Princeton University Press New.
5. Martin, K. (2022) *Ethics of Data and Analytics - Concepts and Cases*, New York: CRC Press Taylor & Francis Group.
6. Rowland, S. (2011) *Teaching Jung*, New York: Oxford University Press.
7. Ruha, B. (2019) *Race after technology: Abolitionist tools for the new Jim Code*, New Jersey: Polity.

Online references:

1. Atkinson, D.P. & Barker, D.R. (2023) “AI and the Social Construction of Creativity”, in *Convergence: The International Journal of Research into New Media Technologies*, Volume vol. 29/issue 4. [Online]. pp. 1054-1069. Available at: <https://doi.org/10.1177/13548565231187730> (Accessed at: 10 November 2023)
2. Baldauf, H., Develotte, C. & Ollagnier-Beldame, M. (2017) “The Effects of Social Media on the Dynamics of Identity: Discourse, Interaction and Digital Traces” in *Alsic - Apprentissage des Langues et Systèmes d’Information et de Communication*, Volume vol. 20. [Online]. Available at <https://journals.openedition.org/alsic/3004?lang=en> (Accessed at: 10 November 2023)

3. Barocas, S. & Selbst, A. D. (2016) "Big Data's Disparate Impact" in *California Law Review*, Volume vol. 104. [Online]. Available at: <http://dx.doi.org/10.2139/ssrn.2477899> (Accessed at: 10 November 2023)
4. Bendel, O. (2023) "Image Synthesis from an Ethical Perspective" in *AI e3 SOCIETY: Journal of Knowledge, Culture and Communication*. [Online]. Available at: <https://doi.org/10.1007/s00146-023-01780-4> (Accessed at: 10 November 2023)
5. Cutri, A., n.d. "Carl Jung's Red Book: Mandala as Transformative Integration of the Psyche". [Online]. Available at: [https://www.academia.edu/40481201/Carl_Jung_s_Red_Book_Mandala_as_Transformati ve_Integration_of_the_Psyche](https://www.academia.edu/40481201/Carl_Jung_s_Red_Book_Mandala_as_Transformati_ve_Integration_of_the_Psyche) (Accessed at: 10 November 2023)
6. de Kerckhove, D. & de Almeida, C. M. (2013) "What is a digital persona?" in *Technoetic Arts*, Volume vol. 11 / issue 3, pp. 277–287. [Online]. Available at https://doi.org/10.1386/tear.11.3.277_1 (Accessed at: 12 December 2023)
7. Gaut, B. (2010) "The Philosophy of Creativity" in *Philosophy Compass*, Volume vol. 5 / 12, pp. 1034–1046. [Online]. Available at <https://doi.org/10.1111/j.1747-9991.2010.00351.x> (Accessed at: 12 December 2023)
8. Jung, C. G., "Collected Works of C.G. Jung, Volume 8: The Structure and Dynamics of the Psyche" in *International Association of Analytical Psychology - IAAP*. [Online]. Available at <https://iaap.org/resources/academic-resources/collected-works-abstracts/volume-8-structure-dynamics-psyche/> (12 December 2023)
9. Kirwan, G. (2010) "Cyberpsychology: Emerging Research in Emerging Environments" in *Irish Journal of Psychology*, Volume vol. 31. [Online]. Available at https://www.researchgate.net/publication/318646245_Cyberpsychology_Emerging_Research_in_Emerging_Environments (Accessed at: 6 January 2024)
10. Kumar, V., Kemmler, D. & Riley, H. E. (1997) "The Creativity Styles Questionnaire–Revised" in *Creativity Research Journal*, Volume vol. 10 / issue 1. [Online]. Available at https://www.researchgate.net/publication/233070984_The_Creativity_Styles_Questionnaire--Revised (Accessed at 6 January 2024)
11. Marom, D. (2017) "Curating the self on social media and perceptions of authenticity : an exploratory study" in *Texas Scholar Works, The University of Texas at Austin*. [Online]. Available at <https://repositories.lib.utexas.edu/items/f57b850a-00c9-415f-9252-ead8f5be86c3> (Accessed at: 6 January 2024)
12. Meadow, M. J. (1992) "Archetypes and patriarchy: Eliade and Jung" in *Journal of Religion e3 Health*, Volume vol. 31 / issue 3, pp. 187-195. [Online]. Available at <https://link.springer.com/article/10.1007/BF00986271> (Accessed at: 8 January 2024)
13. Okamuro, M. & Okamura, M. (1997) "Quad and the Jungian Mandala" in *Samuel Beckett Today / Aujourd'hui*, Volume vol. 6. [Online]. Available at <https://www.jstor.org/stable/25781214> (Accessed at: 8 January 2024)
14. Poin, A., Eynon, R., Hjorth, I. & al., e. (2022) "AI and the Arts: How Machine Learning is Changing Artistic Work" in *UK: Report from the Creative Algorithmic Intelligence Research Project, University of Oxford*. [Online]. Available at <https://www.oii.ox.ac.uk/news-events/reports/ai-the-arts/> (Accessed at: 8 January 2024)
15. Reyman, J. (2013) "User Data on the Social Web: Authorship, Agency, and Appropriation" in *National Council of Teachers of English*, Volume vol. 75 / 5, pp. 513-533. [Online]. Available at https://www.researchgate.net/publication/286038778_User_data_on_the_social_Web_Authorship_agency_and_appropriation (Accessed at: 11 January 2024)
16. Richterich, A. (2018) "How Data-Driven Research Fuelled the Cambridge Analytica Controversy" in *PARTECIPAZIONE E CONFLITTO*, Volume vol. 11 / issue 2. [Online]. Available at <https://cris.maastrichtuniversity.nl/en/publications/how-data-driven-research-fuelled-the-cambridge-analytica-controve> (Accessed at: 11 January 2024)

17. Roquet, C. D. & Sas, C. (2021) "A Mindfulness-Based Brain-Computer Interface to Augment Mandala Coloring for Depression: Protocol for a Single-Case Experimental Design" in *JMIR Research Protocols*, Volume vol. 10 /issue 1. [Online]. Available at https://www.researchgate.net/publication/346814579_A_Mindfulness-Based_Brain-Computer_Interface_Augmenting_Mandala_Coloring_for_Depression_Protocol_for_a_Single-Case_Experimental_Design_Preprint (Accessed at: 11 January 2024)
18. Siapera, E. (2022) "AI Content Moderation, Racism and (de)Coloniality" in *International Journal of Bullying Prevention*, Volume vol. 4 /issue 1. [Online]. Available at https://www.researchgate.net/publication/354388348_AI_Content_Moderation_Racism_and_deColoniality (Accessed at: 11 January 2024)
19. Slegelis, M. H. (1987) "A study of Jung's Mandala and its relationship to art psychotherapy" in *The Arts in Psychotherapy*, Volume vol. 14 /issue 4. [Online]. Available at <https://www.sciencedirect.com/science/article/abs/pii/0197455687900189> (Accessed at: 11 January 2024)
20. Sparrow, B., Jenny Liu, J. & Wegner, D. M. (2011) "Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips" in *Science*, Volume vol. 333 /issue 6043. [Online]. Available at https://scholar.harvard.edu/files/dwegner/files/sparrow_et_al_2011.pdf (Accessed at: 12 January 2024)
21. St.Hilaire, C. (2018) "Jungian psychology in a demanding modern world" in *Environment and Social Psychology*, Volume vol. 3 /issue 2. [Online]. Available at https://www.researchgate.net/publication/327078408_Jungian_psychology_in_a_demanding_modern_world (Accessed at: 12 January 2024)
22. Wegner, D. M. (1987) "Transactive Memory: A Contemporary Analysis of the Group Mind, Theories of Group Behavior" in *Springer Series in Social Psychology*. [Online]. Available at <https://dtg.sites.fas.harvard.edu/DANWEGNER/pub/Wegner%20Transactive%20Memory.pdf> (Accessed at: 12 January 2024)

Art Installations:

1. Ridler, Ana (2018) 'Myriad (Tulips)' [Art Installation]. Available at <https://annaridler.com/myriad-tulips> (Accessed at: 12 January 2024)
2. Crespo, Sofia (2022) 'Critically Extant' [Online]. Available at <https://criticallyextant.com/> (Accessed at: 12 January 2024)

Simona-Diana Chiru holds a Master's degree in Interactive Technologies for Performative and Media Arts from the Faculty of Film at the I.L. Caragiale National University of Theatre and Film in Bucharest. As an artist, she is deeply engaged with the intersection of technology and the humanities, driven by a passion for discovering connections among programming, psychology, philosophy, neuroscience, and art. Her research focuses on exploring the possibilities of using the human body as a mindful interface for communication between people and machines.