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Harmony

The definition of Harmony in the Oxford English Dictionary (*Harmony* | *Encyclopedia.com*, 2023) is the "quality of forming a pleasing and consistent whole", although the word *"harmony is an etymological concept derived from Greek mythology. It refers to the arrangement of elements that form a consistent and orderly whole and is derived from the classical Greek 'harmonia' (meaning a joint between the planks)."* In art and design, harmony is often used to describe the way that different elements of a piece work together to create a cohesive and visually appealing whole eg. in a painting, harmony might refer to the way that assorted colours, shapes, and lines work together to create a balanced composition. Harmony is considered a process, not only the mixing of different elements but the balancing of them into an organic whole (4th Century BC Ying/Yan concept). Therefore, the word harmony can be described as a unity of agreeable items. Using a combination of both Eastern and Western perspectives (Di Fabio & Tsuda, 2018) enlarges this perspective to include psychological harmony and looks to the relationship between oneself, others and nature whilst considering temporal and spatial perspectives. This new area of research is looking to geographical sustainability by using harmonious approaches. One definition of *"Harmony brings together a composition with similar units. If your composition were using wavy lines and organic shapes, you would stay with those types of lines and not put in just one geometric shape"* (*Unity, Harmony, and Variety - Principles of Art*, 2018.). Meaning that if you are using organic forms which are naturally curved then the incorporation of geometric lines in the piece would be disharmonious.

The concept of order and logic in harmony is not new and has been explored by various scholars and artists. In her book, *Thinking in Systems*, Donella Meadows explains first-

order and second-order systems, which can be applied to the concept of harmony in art and design (Meadows, 2008). A first-order system is linear and predictable, whereas a second-order system is complex and unpredictable. When designing, it is easy to fall into the trap of creating a first-order system, where everything is predictable and follows a set pattern. To achieve harmony in design, we must also consider the second-order system, where elements are interdependent and interact in complex ways. An example of a first order system can be seen by looking at pieces of glass from one perspective where it represents a linear structure with shadows that form in specific predictable patterns. The use of light in Niyoko-Ikuta's Swing 43 sculpture (see figure 1) is an excellent example of the interdependent relationship between elements in a second-order system where the glass elements interact with the viewers perspective to alter the perception of the sculpture where the shadows can be seen from other angles creating a totally different experience of the sculpture. The sculpture's hand-cut collection of cross-sectional plate glass is designed to capture complex light reflection and refraction as it passes through her creation. As Lockheart and Melles (Lockheart & Melles, 2010) point out, critical realism¹ acknowledges the complex interplay between material objects, social practices, and cultural values. In the Swing 43, the interplay between light, glass, and the viewer's perspective creates a unique experience for each viewer.

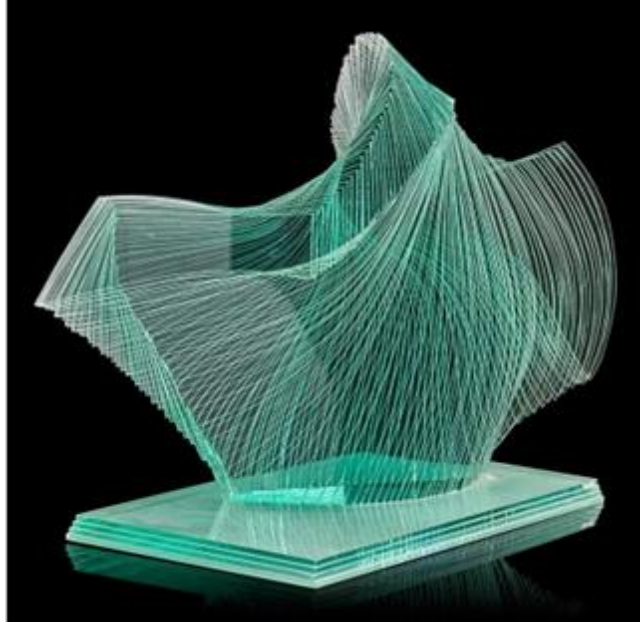


Figure 1: Niyoko Ikuta (Niyoko Ikuta | Swing 43, Japan (1991) | Artsy, n.d.)

Niyoko-Ikuta's *Swing 43* is a prime example of how an artist can use the concept of harmony to create an intricate and mesmerizing piece of artwork. The interplay between light, form, and material is expertly balanced, resulting in a dynamic sculpture that is both striking and harmonious. The artist's careful consideration of the relationship between the artwork and its environment highlights the importance of a critical realist approach in creating harmony and balance in art and design. The way that light interacts with the sculpture's surface plays a significant role in its overall aesthetic. The organic flow of hand-cut glass plates creates a mesmerizing and captivating form as the light passes through the glass plates, it creates varying degrees of light and shade. Therefore, each viewer whilst seeing the same object, will have different experiences, as the light will not strike the glass in the same way for two people, taking into consideration the time of day, their height, or the way they perceive the sculpture. This interplay between light and the

sculpture creates a dynamic harmony that evolves with the changing environment, allowing viewers to experience the artwork in unique and personal ways.

The concept of harmony is essential to art and design, as it allows for the unity and balance of different elements to create a cohesive and aesthetically pleasing whole. Harmony describes a togetherness, a building of styles, materials and creativity that once created pleases the eye. Therefore, it would contain flowing lines and smooth edges. The end product should flow like water and dance in rhythmic movements. There should not be any jagged disproportionate edges but rather a calm line for the eye to follow from one end to another, capturing light from many angles and depending on the viewer's position it can change dramatically altering the fluidity of the sculpture.

On breaking down the various components of harmony, it becomes obvious that there can be a systematic approach similar to that of Donella Meadows' explanation using first and second-order systems. The brain searches for order and logic in things and finding harmony in designs and creations is no different. This order must be in a flowing movement for me to find harmony in my creations. In conclusion, achieving harmony in art and design requires a systematic approach that considers both first order and second-order systems and by understanding the interdependent relationship between elements and the role of critical realism in the design process. Harmony also requires balance, symmetry, form, and proportion.

Semiotics

Semiotics, also known as semiology, is the study of signals and how they are used. One of its pioneers, the Swiss linguist Ferdinand de Saussure, defined it as the study of "*the life of signs within society*." Although the English philosopher John Locke used the term in this sense in the 17th century, the concept of semiotics as an interdisciplinary field of study emerged only in the late 19th and early 20th centuries with the independent work of Saussure and the American philosopher Charles Sanders Peirce. Peirce's main work was founded on pragmatism and logic. He defined a sign as "*something that stands to somebody for something*," (Pierce, 2014) and one of his major contributions to semiotics was classifying signs into three categories: (1) an icon, which resembles its referent (such as a road sign for falling rocks); (2) an index, which is associated with its referent (such as smoke is a sign of fire); and (3) a symbol, which is only related to its referent by convention (as with words or traffic signals). Peirce also proved that a sign can never have a definitive meaning since the meaning must be qualified all the time. In art and design, semiotics is the study of hidden or un-noticed signs and symbols in or on an artefact and, if perceived, its interpretation.

It can also be used to analyse the way that visual elements communicate meaning. For example, a particular colour might be used to symbolize a particular emotion or idea which is perceived rather than seen. The Gestalt theory holds that the human brain will attempt to simplify and organise complex images or designs with many elements by subconsciously arranging the parts into an organised system that creates a whole, rather than just a series of disparate elements. Our brains are designed to recognise structure and patterns in order for us to better understand the environment in which we live. This

can be a useful tool in design to incorporate hidden meanings or messages The WWF logo (see figure 2) is a good example where the brain fills in the contours around the blank spaces creating the illusion of the outline of a panda (Chang & Nesbitt, 2006).



Figure 2: WWF Logo

In figure 3, Hailey Paige's "The Story of Expansion" (*The Story of Expansion – PAIGE BRADLEY*, n.d.) is where she uses a shattered sculpture to convey breaking out of our shells. However, the semiotics are that a woman is sitting in a meditative state and realises her full potential beyond her physical exterior.



Figure 3: The Story of Expansion, Hailey Paige (*The Story of Expansion* – PAIGE BRADLEY, n.d.)

The sculpture "Expansion" by Hailey Paige is a powerful and evocative work of art that speaks to the human experience of breaking free from our limitations and realizing our full potential. As an artist, I believe that this sculpture represents a profound and universal message that resonates with people from all walks of life and shows how easily semiotics can be incorporated subtly into artwork, passing on its message only to those who choose to see. What I see is that the shattered form of the sculpture symbolizes the breaking of boundaries and limitations that we impose on ourselves. The shattered pieces, now freed from their confinement, represent the potential for growth and change that lies within us all. The figure sitting in a meditative state represents the process of self-reflection and contemplation that is necessary for personal growth and transformation. The sculpture's message is reminiscent of the ideas of Friedrich Nietzsche, who believed that we must break free from the constraints of societal norms and expectations to reach our true potential. In his work, Nietzsche argued that we must "*transcend our limitations and become "Übermensch," or superhuman, by embracing our unique individuality and living*

authentically". (Übermensch Explained: The Meaning of Nietzsche's 'Superman' | Philosophy Break, n.d.)

The sculpture "Expansion" captures this spirit of self-discovery and transformation by encouraging the viewer to contemplate their own limitations and potential for growth. It represents a call to action, urging us to break free from our self-imposed constraints and embrace our true selves. As an artist, "Expansion" is a profound and inspiring work of art that speaks to the human experience of growth and transformation. It serves as a reminder that we must break free from our limitations to realize our full potential and live authentically.

Artificial Intelligence

AI and machine learning ("AI") is computer systems that can perform tasks that usually require human intelligence. The role of critical realism in art and design should also be considered: critical realism, as defined by Lockheart and Melles (Lockheart & Melles, 2010), is *"a way of seeing that acknowledges the complex interplay between material objects, social practices, and cultural values."* By adopting a critical realist approach, we can acknowledge the importance of material objects in the design process, while also recognizing the social and cultural factors that influence how those objects are created, consumed, and interpreted. In the context of AI and the Fourth Industrial Revolution, critical realism offers a way to balance the potential benefits of AI with the need to preserve the human touch in art and design. By recognizing the importance of human creativity and interpretation in the design process, we can use AI to enhance and augment our work, rather than replacing it entirely. While AI can undoubtedly enhance and

augment the work of artists and designers, it also challenges traditional notions of authenticity and originality. As noted by Elgammal (Elgammal, 2018) the use of AI in creative processes blurs the lines between human and machine authorship, raising questions about intellectual property and the value of art. This is an important consideration for artists and designers as they navigate the use of AI in their work and seek to protect their creative output as can currently be seen with Getty Images taking Stability AI to court for apparently using their images, without their permission, to train their AI to generate artwork (Getty Images (US), Inc. v. Stability AI, Inc., 2023).

Critical realism emphasizes the importance of human agency in shaping the world around us, while also acknowledging the role of external structures and forces in shaping our experiences. By adopting a critical realist approach to the integration of AI in art and design, we can ensure that the human touch remains at the heart of the creative process, even as we embrace new technologies and techniques. To ensure that the integration of AI in art and design remains a positive force for innovation and creativity, we must be mindful of these potential challenges and implications, and work to develop frameworks and structures that promote transparency, accountability, and human agency in the creative process. Additionally, critical realism encourages us to consider the wider social and cultural implications of the integration of AI in art and design. We must ensure that the use of AI in these fields does not perpetuate or amplify existing inequalities or reinforce dominant cultural narratives. As such, artists and designers must be mindful of the data sets and algorithms used in AI systems, as these can reflect and reinforce biases and power dynamics. AI has the potential to revolutionize crafting methods by providing designers with tools that can create, modify, and refine designs quickly and efficiently.

For example, AI could be used to generate countless iterations of a design, allowing designers to explore different possibilities and refine their work. As an artist myself, I believe that the integration of AI into art and design has the potential to revolutionize the way we think about creativity and innovation. In figure 4, Sougwen Chung (Sougwen Chung – Artist Profile (Photos, Videos, Exhibitions) - AIArtists.Org, n.d.) works with AI to create art and is a fascinating exploration of the potential of technology to enhance and transform the creative process.

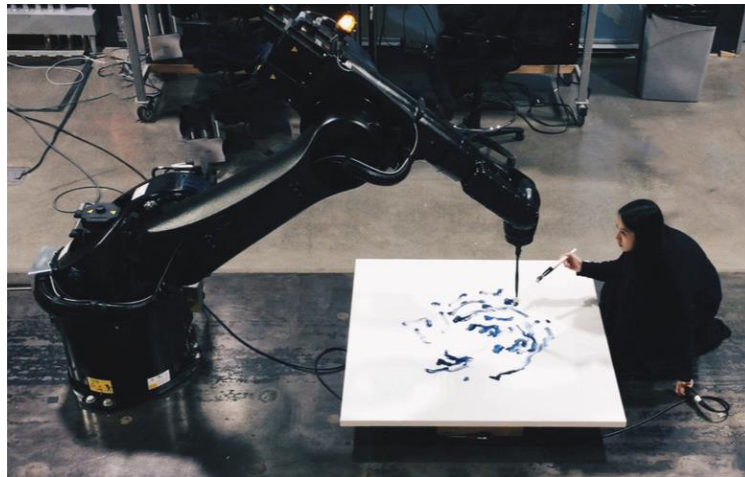


Figure 4: AI and crafters (Sougwen Chung – Artist Profile (Photos, Videos, Exhibitions) — AIArtists.Org, n.d.)

Chung's work with AI involves using machine learning algorithms to generate complex and intricate patterns, which are then incorporated into her artwork. The resulting pieces are visually stunning and represent a unique combination of human creativity and technological innovation. From an emotional and conceptual standpoint, Chung's work with AI represents a fusion of the organic and the technological. By using algorithms to create patterns and shapes, she is tapping into the inherent beauty of mathematical forms and patterns, while at the same time exploring the ways in which these forms can be used to create something new and unique. At a deeper level, Chung's work with AI speaks to

the ongoing evolution of human creativity and the role of technology in shaping the artistic landscape. By exploring the possibilities of AI and machine learning in art and design, she is pushing the boundaries of what is possible and opening new avenues for artistic expression and exploration. This approach to art creation has clear parallels to the work of Skinner and Holland (Skinner & Holland, 1993) when they pioneered the field of behaviourism and studied how environmental factors can influence behaviour. Like Skinner, Chung is interested in exploring the relationship between human creativity and the external environment, in this case, the algorithms and processes used in AI.

Conclusion

The intersection of harmony, semiotics, and AI in art and design offers exciting possibilities for the future of craft. However, we must be mindful of the potential challenges and implications of this integration and adopt a critical realist approach to ensure that the human touch remains at the heart of the design process. As Berger (1972) reminds us in *Ways of Seeing*, *"the relation between what we see and what we know is never settled"*, (Berger, 1972) and it is up to us as artists and designers to continue exploring this relationship and pushing the boundaries of craft. As such, it is important that we approach the intersection of harmony, semiotics, and AI in art and design with a critical realist approach that recognizes the importance of human agency and creativity. By doing so, we can leverage the potential benefits of AI while preserving the unique creativity and interpretation that make art and design so valuable. As we continue to explore this intersection, it is up to us as artists and designers to push the boundaries of craft and explore new avenues of creative expression, while also ensuring that the human touch remains at the heart of the design process.

Proposed question for Independent Project “Can AI redefine how craft designers conceptualise ideas in the future?”.

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