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Procedural graphics as a representation of subjective images of the world

Abstract

The dissertation, entitled *Procedural graphics as a representation of subjective images of the world* is based on five elements – five themes that naturally provided its shape and direction when it was created.

The first theme addressed is figurative generative art. Most generative art is either abstract or strives for a simplified and synthetic form – this is a result of the tools used as well as a certain convention. The questions, that I asked, were: Is it possible to create generative compositions that will not indicate how they were created? Is it possible to form a creator of digital art whose works are indistinguishable from those created using traditional techniques? Or vice versa: How can generative techniques enrich traditional methods?

The second topic is variability in printmaking. When print is made from a traditional matrix, some small and random changes occur between individual prints. This uniqueness as well as the creative potential of how ink is applied, and the excess is removed, a different colour is laid in locally, or multiple modular matrices are used, led me to consider their impact, not only on the formal but also on the meaningful layer of the artwork. Questions arose: how to introduce variability into digital works with successive prints? How many changes, e.g. compositional, can be introduced so that the work continues to be 'the same work'? What is the relationship of such print to the matrix and other works? Can this variability be used in a meaningful way?

The third topic is the generative or procedural creative process itself. It concerns both the technological side of the activities and the change of approach to the creative process. I wondered: how do I choose and prepare the environment for the creation of the work? How much autonomy am I prepared to give up to the creative mechanism? How will the outcome be affected by shifting the focus from creating the work to designing the process of making it? How do I design complex generative structures to keep their potential within a certain framework? How can I use coincidence in the creation of works?

The fourth topic is imitation – looking for and creating visual layer for the form of works. I asked: Does digital art have a visual layer? What is the relationship of the tools used to the appearance of the graphic works? Is it necessary to imitate non-digital forms in digital art? Is it possible to create a generative equivalent of specific workshop techniques?



The fifth and final topic of the dissertation is the thematic space that forms the basis for the previously mentioned issues, connecting them and allowing personal content to be introduced into the works. The previously defined topics are mainly concerned with the way the prints are created and their form, and during this part, I connect the works with the reality that surrounds us, or more precisely with the way we perceive reality. I touch upon the subject of creating subjective images of the world, which are influenced by emotions, experiences and perceptual limitations.

The issues presented are explored in a theoretical work consisting of six chapters and documentation of the artistic part.

The introduction outlines the wider context for the subject undertaken and presents the main ideas of the dissertation. The first section of the chapter entitled *Graphics and Procedurality* includes a reflection of the nature of printmaking and the matrix. The concept of *meta-matrix* is introduced and its specificity and significance in the created series of works is explained. The second part of the chapter is devoted to the issue of procedurality. Using the creation of procedural textures as an example, it presents the main advantages of this approach, cites examples of its use as well as explains its importance in the construction of a meta-matrix structure. The third chapter – *Representations* – sets the phenomenon of variability in cultural and historical context, referring to the new media. Moreover, it explains the transition from consistency to variability and explains the importance of using the term *population* instead of *edition* in polish descriptions of artworks. The next chapter – *Accidentally* – presents the significance of coincidence as an essential element of the creative process, shows how randomisation is introduced into the structure of the meta-matrices and briefly characterises functions used in the process of randomization. The section *Visual layer and the lack of it* explains the concept of the visual layer, used in the dissertation, with an emphasis on its digital form. Moreover, the chapter touches upon the problem of imitation in art and printmaking. The fifth chapter, entitled *Grain*, explains the creation of the grain used in the series, discusses raster processing in the Blender software and its technical issues involved, and presents the inspiration as well as the sources of this process. The final chapter of the main theoretical part – *Subjective images* – describes the concept of the content of the presented series, addresses the problem of the subjectivity of perceiving the world, and proposes guidelines for the independent interpretation of the series of works. The documentation of artistic work showcases four viewpoints of prints created with meta-matrices and photographs of the interactive installation.

The artistic part contains six artworks that, due to the character and idea of work, cannot be represented in their entirety. What is presented is a selection of prints – a possibility space. The works are printed with pigment ink on graphic paper. The series consists of the prints: *Introspection*, *Correlation*, *Schrödinger's Letters*, *Tesseract H.C.*, *Raiment* and *Who*. An additional element of the set is the work *States* – interactive installation – which demonstrates the potential of meta-matrix and allows the viewer to participate in the process of creating the graphics.

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