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## THE GENERATIVE PRINCIPLE IN DIGITAL MEDIA

From early algorithmic art to current media developments

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A Project for Students of the Joint Master Program Digital Media  
University & University of the Arts, Bremen

Winter Term 2014/15, with a Preparatory Seminar during Summer Term 2014

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*To organize academic studies in the form of project work was the fundamental principle of the University of Bremen when it opened in 1971/72. By the time, projects were organized in groups of about ten to twenty students and two or three teaching personnel. Projects lasted for four semesters. More than forty years ago now, they constituted a daring reform, and were heavily attacked by the German university establishment.*

*Much has changed since then. In our Master program of Digital Media, the project is offered as the only study work for third semester. This allows students to fully concentrate for six months on one and the same topic and engage in its intricacies and complexities to the greatest extent. My formula on the organizational level is*

*„Sharing a perspective for individual quality media design“.*

*The relation between individual and team work will be dealt with most flexibly according to needs of topics and preferences of students.*

*The specific topic, i.e. The Generative Principle in Digital Media is broad and general enough to allow for a great variety of individual approaches, goals, and topical orientations, but at the same time bundle work such that participants may experience synergetic effects that only teams are capable of producing.*

*The generative principle was first formulated in 1965 in the context of early computer art. It has gained great popularity during the last ten or twelve years, and now appears as a major aspect of interactive systems.*

*The preparatory seminar is open to all students, but required for those who intend to choose project The Generative Principle in Digital Media for their project work in winter 2014/15. The following paragraphs describe general aspects of the proposal.*

### Goals

All participants should keep in mind the following general and overarching goals even though individual participants will concentrate on subsets of them. Individual participants will favor different selections from these goals. This is welcome.

- Gain a good understanding of generative design and art, of parametric systems, and of the reduction of everyday to algorithmic processes.
- Gain experience in doing generative work: its power, its boundaries, its prospects.
- Develop a thorough understanding of the origins of Digital Media.
- Gain expertise and good judgement in interactivity and design for interaction.
- Securely judge speculative concepts for their algorithmic realizability.
- Know differences and commonalities of algorithmic design and aesthetic judgement.
- Learn to see chances and dangers of the *algorithmic revolution*, the basis of digital media.

## Context specifics

Dr. Susan Grabowski and Frieder Nake are currently engaged in a research project funded by the Volkswagen Stiftung (until August 2016). Its topic is „The algorithmic dimension in the (visual) arts“. We are cooperating in this project with Kunsthalle Bremen and researchers in London and Zagreb. This research project is, of course, independent of the study project. It should, however, constitute a motivating background. – We maintain and improve the compArt database Digital Art (daDA). The project compArt (Center of Excellence Digital Art) is our long-term endeavor. During the time of the study project, we will prepare a retrospective exhibition at Kunsthalle Bremen celebrating fifty years of the first exhibitions of computer art (which took place in 1965).

Specific work in this direction may be taken up by participants of the project. But the generative principle in digital media is more general than its applications in art even though it can be argued that digital art was the origin of digital media.

Decades of work in computer graphics (its mathematical branch), programming (in general), and art, semiotics, and aesthetics qualify us for true so-called interdisciplinary work (we prefer calling it „transdisciplinary“).

During the duration of the study project, we will invite international experts of the field for brief stays in Bremen. We will visit media, art, and design museums and institutions in Germany, and local exhibitions.

## Results

Study projects of the Bremen style are dynamic processes. They allow for greatest autonomy of participants to follow their preferences, find personal style, and generate outstanding results. Specific results of the project will emerge as we embark on the project. They cannot be defined ahead of time. But here are some examples that could be discussed and taken up by individuals or small subgroups:

- Specific contributions to the compArt database daDA, e.g. high quality essays on the generative principle in music, graphics, dance, etc..
- Contributions to retrospective exhibitions (in Bremen and Stuttgart)
- Contributions of the generative principle to Hochschultage 2015.
- Quality papers and essays, submissions to appropriate conferences and journals (on topics chosen by students).
- Contributions to festivals in 2015 should be a challenge (Osnabrück, Berlin, Linz).
- Needed as a general goal: final report on the project, assembled from individual contributions.

Above all, results will be your personal learning processes: your skills, your knowledge, your capabilities.

*The study project will be challenging and demanding;  
it will take up topics and aspects yet unknown to you;  
and it will be joyful and rewarding to you as an individual and member of a group.*