



The Arts & Genomics Centre

New Representational Spaces Programme

PhD-project: The history of interactions between art & genomics

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Research aims

In this PhD-project the historical development of the interactions between the visual arts and genomics will be described and analysed. The first aim of the project is to map the as yet fragmented history of the interactions of art and genomics. In existing literature these interactions are described as part of the broader historical development of interactions between art and (micro)biology and art and technology. The *second aim* is to develop a vocabulary, instruments and objectives with which the intersection of art and genomics can be better understood. Bio-genetic art will not be viewed as an illustration of new scientific insights. The focus of the project will be on the differences and commonalities in the practice of art and genomics, specifically the role of language, visuality, imagination, experiment and technology. Mapping this history will reveal not only when and where artists developed an interest in genomics research and genomics researchers an interest in art, but also the specific objectives, interests of and methods they used to bridge the gap between art and science.

General objectives Interactions between art and genomics are of recent date; they started surfacing in the early 1990s after the establishment of the Human Genome Project; but there are some notable forerunners in the 1960s, when reproduction and ecological issues emerged as prominent concerns (Kranz 1974, Nelkin and Lindee 1995, Bijvoet 1997, Wilson 2002). The project will focus on scientific and artistic developments that are of crucial interest for interactions between art and genomics. For instance, from the 1950s onwards, artists acquired a more socially integrated role, while the concepts of art as communication and art as part of a larger social system of meaning gained considerable ground (Kepes 1956, Burnham 1968, Bijvoet 1997). These changes allowed for increased interactions between art and science, notably in the areas of molecular biology, physics,

quantum mechanics, ecology, system-analysis and system theory, and information technology. (Bijvoet 1997, Bud 1993, Kevles and Geison 1995). A major shift took place in both art and genomics with the advent of information technology, involving new (digital) media (Fox Keller 1995, Haraway 1997, Hayles 1999). Parallel to the development of genomics as an independent transdisciplinary science, a biogenetic art tradition evolved from art that challenged its own autonomy and that was oriented towards these various scientific disciplines. Genomics and bio-genetic art share, so to speak, the same scientific backgrounds and boundary-crossing approach.

Approach and methodological aspects This project's focus on classifying, describing and analysing bio-genetic art has an empirical basis. It seeks to identify the role and function of the participants (artists, curators, scientists, technicians, medical engineers) in art/science interactions. The descriptions and analyses of works of art will be based on a distinction between 1. artists using new insights and new materials; 2. artists using scientific and/or technological means and methods; and 3. interdisciplinary collaborations in experimental and creative processes. Furthermore, the adopted approach will also rely on three *analytic points of reference* that played a major role in the histories of both art and genomics and that are therefore considered important for a better understanding of their interactions: The *first* point of reference is 'form'. The genesis of form (or natural structures) and the role and function of visual conventions have always been preoccupations of scientists and artists alike. It will be addressed as the problem of aesthetic form (Kepes 1956, Coen 1999). Of what use and significance is it for the interactions between art and genomics? What role does it play in the history of these interactions? The *second* point of reference involves 'culture' and conceptualisation. In genetic research, various concepts (Beurton et al. 2000) and rhetorics have been used (Fox Keller 1995, Kay 2000). This has turned the Gene into a powerful metaphor in many cultural settings (e.g. Levy 1996, Nelkin/Lindee 1995). Which concepts and rhetorics appear when, and how do they function in the art/genomics interaction? How do they prepare the ground for the integration of genomics knowledge in other cultural domains, such as art? As a *third* point of reference the increasing importance of 'new media' will be considered, especially from the moment of the fundamental shift that took place with the 'age of information' (Fox Keller 1995, Hayles 1999, Stocker/Schöpf 1999). How should we understand the interest in new (visualisation) technologies in both art and the life sciences during the second half of the twentieth century? With these new media, art and science tackle problems of 'floating data' and 'flickering signifiers': the material versus the immaterial, the visual versus the virtual, pattern versus randomness.

Research results The outcome of this project will consist of a comprehensive history of the interactions between and the intersections of art and genomics, as well as a vocabulary for describing and analysing the nature of these interactions and intersections. As such the project will provide theoretical and practical tools for *The Arts and Genomics Center* to stimulate and initiate new intersections between art and genomics.