

GENOMIC ART AND CULTURE

ANDRE BRODYK

Name: Andre Brodyk, Artist.
E-mail: andr@ozemail.com.au.
Web site: www.ozemail.com.au/~andr/.

Abstract: *This paper considers the value to art and culture of art based on a genomics metaphor as revealed through the work of Genetic Artists. Genetic Artists' interpretations and responses to genomic models, function as transformative mediums affecting the way art is made and thought about as well as transforming the way developments in genetics are understood and considered by society. Genomic Art empowers all members of contemporary culture to assume a transformative role and a creative prerogative, shaping contemporary ideas about what constitutes human relations to the world. It is more a matter of the cultural use derived from any genomic research than the scientific veracity of such research.*

This paper is presented from the perspective of an artist interested in the interpretive, metaphoric and transformative qualities of art practices informed by genomics and biotechnology. This paper considers the value to art and culture by contextualising art with genomic science. Art based on a genetics metaphor translates art in terms of the way art is made and thought about but also serves another creative function culturally, in terms of the way genomic developments are understood and considered by society, as a consequence of the transformative effects of such art. This in turn impacts on the development and direction of genomic research and biotechnology. This art is not merely illustrative of and therefore subordinate to genomic scientific inquiry. It is proposed that Genetic Art is a creative, metaphoric, fictional equivalent of genetic engineering processes, a transformative and shaping medium.

The work of several interdisciplinary USA artists, who adopt different approaches to such transformative processes, will be referenced to consider these interpretative metaphoric and transformative qualities. The main criteria for referencing these artists is

that their work processes are all based on a genetics model and their work deals with genetics based issues. I have labelled such artists as Genetic Artists and their work as Genomic Art. Genetic Artists' visual critical perspectives, which use a genetics metaphor, empower art to facilitate awareness and understanding of the reciprocal nature of the value to art science and all of culture, derived from such a relationship. As a consequence of Genetic Artists' interpretations and responses to genomic models, Genomic Art functions as a transformative medium through which transformative revisions and expanded notions of human relationships to nature and the world can occur. It is specifically via these (genomic), art based processes and Genetic Artists' responses to issues raised by genomic research and biotechnology, that such art attains its unique transformative qualities. Such issues include the commodification of biotechnology, eugenics, interspecies trait transference and communication, and the convergence of computer technology with microbiology.

An outmoded, socially based idea, which currently forms the philosophical basis of the notion of what it is to be human and what constitutes humans as a discrete species, is being undermined by at least two new aspects of biotechnology. Firstly, recent data shows small degrees of genome composition divergence between species such as human and chimpanzee, (1.3%) and other organisms i.e. fruit flies which have approximately 13,000 genes, the nematode worm which has 18,000 genes compared to human 30,000 + genes, of which some 200 are known to be derived from bacteria. Secondly, because of this close proximity of one species to another, the fact of recombinant DNA technologies provides another cognitive and ideological reassessment of species taxonomies by enabling inter species genetic trait transfers both on a somatic cell level as well as at the germ line levels. These biotechnological transformations enabled by the developments in microbiology "are being accompanied by an equally significant philosophical transformation", according to Jeremy Rifkin in his book *The Biotech Century: Harnessing the Gene and Remaking the World*. Rifkin maintains that "society is reshaping its view of existence to accommodate the new organisational relationships" with all other species. The new societal philosophical perspectives can be seen as part of a developing new consciousness identifiable under the rubric of 'algeny' a term coined by Nobel Laureate biologist at Rockefeller University, Joshua Lederberg.

Artists' responses and relationships to nature have changed over time as a result of developments in scientific research. This has enabled art to maintain and perform a changing and relevant sociological role and therefore be of immense value not only to culture but in general but also to science. In the light of the new biotechnological developments, societies' concepts of nature and the view of existence are being changed through Genomic Art, to accommodate new organisational relationships with all other species. For example, Genomic Art critiques of recombinant DNA technologies provide cognitive and ethical/ ideological reassessments of species taxonomies, which enable inter species genetic trait transfers. In view of their profound nature, such transformative notions, therefore cannot and do not exist in isolation in scientific discovery, nor in any other one discipline for that matter. This is essential in order to prevent idiosyncratic interpretations and assumptions from occurring as a result of input from only one (any

one) sector of society. It is this cultural intervention and philosophical contextualisation value reconfigured by Genomic Art, which affords geneticists revisualizations which are non myopic.

In order for artists to be of value, to be equipped, to understand and interpret such knowledge which is being advanced by new biotechnological research, contemporary Genetic Artists interface with science processes, by using models such as recombinant technologies to inform their own work practices. These have become both the new art models as well as the new artistic tools to make art. Contemporary Genetic Artists, whose work processes deal with biotechnological issues, are cognisant of the wider philosophical implications of the changing cultural circumstances unfolding. In this contemporary context, creativity, the essence of artistic endeavour is now forming part of the prerogative of all members of contemporary culture. Society overall, not only geneticists and artists, but all human beings can assume a transformative role bought about by Genomic Art and based on Genetic Artists' responses to developments in biotechnology and genomics. In so doing, Genomic Art is shaping contemporary ideas about what actually constitutes art as well as what constitutes human relations to the world. Genetic Artists utilise the creative capacity of their art as a transformative process in making creative connections and eliciting such connections in the mind of the viewer.

In empowering all members of culture to assume a creative prerogative. Genomic Art serves as both a critique of aspects of genomics and biotechnology as well as the ways in which art can be made when based on a genomics metaphor. I have developed FOUR categories of Genetic Artist, however this paper will only focus on artists from category b. and one from category d. below.

These categories are media and process based descriptors:

- a. Artists who work in a virtual sense. Christa Sommerer (Austrian)
- b. Artists who work in a physical sense. Gene Genies © (American)
- c. Artists whose work involves biotechnology and/ or actual life forms. Natalie Jeremijenko (American/Australian)
- d. Artists who merge living organisms with digital technology & computers. Eduardo Kac (American)

(Eduardo Kac uses other criteria to describe his own art, which he refers to as "Transgenic Art").

A recent example of international tendencies in Genetic Art was held in New York last year at the "Exit Art" Gallery with a comprehensive contemporary survey exhibition entitled "Paradise Now", curated by New York based Marvin Heiferman and Carole Kismaric. This exhibition featured the work of 39 international artists, working across a diverse range of media, a number of whom are presented in this paper.

Exhibitions such as this have demonstrated that genomic research implications and potential applications of biomedicine and biotechnology have inevitably become ensconced within mainstream cultural discourses. The art based cultural application described in this paper, proposes that Genomic Art acts as a cultural metaphor for

transformative processes of knowledge. Such a perspective reinforces the proposition that the biological function of genomics has been usurped, in favour of the sociological function of genomics.

The work of these artists is neither a comprehensive representation of the many issues and implications of genomic research nor a representation of the multifarious ways in which art can be made based on a genetics model. In presenting the work of these artists I do not offer a critique of their work nor do I offer a critique of genetic engineering or biotechnology. Instead I have focused on the intersections of contemporary art and genomic science and technology, to reveal a reciprocal relationship, which exists in the form of value to art, culture and genomic science. This paper offers a critical perspective of the role of contemporary art in culture, based on a genomics metaphor as revealed through the work of Genetic Artists. Through Genomic Art one becomes aware of the idea that it is more a matter of the cultural use derived from any genomic research than the scientific veracity of such research.