

Micro‘be’ Fermented Fashion

The E-vellum series

Donna Franklin^a & Gary Cass^b.

^aSchool of Communications and Contemporary Arts, Edith Cowan University

^bFaculty of Natural and Agricultural Science, the University of Western Australia
(gcass@cyllene.uwa.edu.au)

Evolution is the future. The future is an advancing pathway... And it is time to travel this evolutionary highway. Fashion based on a perpetual quest for change – is cyclic in nature (Liposvetsky, G., 2006). Micro‘be’ fermented fashion’s newest series, E-vellum attempts to evolve, not revolve! This project explores to use of living microbes to ferment material that challenges pre-existing relationships between body – garment – environment.

Historically, vellum in the form of animal hide or paper was a means of passing on knowledge through writing and illustration; now the garment becomes a source of information to communicate meaning. Fashion beyond its economic drive can reflect the social, cultural and political circumstances in a capitalistic society. The wearer’s identity is shaped through the products they consume. To skin or be skinned is to remove/add the outer layer that creates differences. This work explores the Beauty of the Grotesque, through the negation of a space where science meets art & fashion.

Artist, Donna Franklin and scientist, Gary Cass examines ideas of skinning, decay and re-healing in the E-vellum works (Figure 1 - 3). The work critiques the aesthetics and fetish aspects of fashion and our on-going relationship with the consumption and manipulation of living entities for production of goods. The fabric’s organic, raw and visceral qualities are presented within the familiar systems and symbols of fashion.

The works aims to draw attention to the ethics of textile production (environmental, working conditions, over-indulgence. . .) and change the current disassociation from the natural world. By going beyond this present day anti-bacterial sterile world we have created, and infiltrate the potential new future life-world of the everyday. This new future will engage with the possible integration of the monstrous; which may be visually and fragrantly aesthetically hideous to one; but yet attractive to another.

Will microbes become fashion’s future soft machine bio-synthesizers?

The Micro‘be’ material, initially fermented from red wine, has now been produced from white wine, beer and Guinness. At an early stage of development it smells like stale, “morning after the night before” and feels like sludge when wet, but the cotton-like cellulose dress fits snugly as a second skin. It is very delicate, comprising micro-fibrils of cellulose. The unique bacterial fermented garments, made from your favourite alcoholic beverage, could mark the start of fabrics fermented by living microbes. Inspiration for the cellulose garments came when Cass noticed a

skin-like layer covering a vat of wine, at his friends winery located in Western Australia, which had been contaminated with bacteria and gone 'off'.

The bacteria that caused the spoilage were a colony of *Acetobacter*, transforming the wine into vinegar; therefore *Acetobacter* are a winemaker's worst nightmare. But what's bad for one industry is advantageous for another; in this instance, the textile industry. The by-product of the *Acetobacter* activity is the formation of cellulose, chemically similar to cotton. Cotton has been trademarked as cellulose derived from plants (*Gossypium* sp.). This microbial material is not new, it has been called the 'vinegar mother' and originates from the ancient European; a few millenniums ago they believed that it was the skin of mother that 'gives birth' to the vinegar once it was placed in the wine.

Non-hazardous and non-pathogenic bacteria, *Acetobacter* are rod shaped bacteria, 1-4µm (micron) in size. They are aerobic (requiring oxygen) and can be found to be motile or non-motile. *Acetobacter* are distinguished by their ability to convert ethanol (wine) to acetic acid (vinegar). Another feature of *Acetobacter* is the synthesis of large quantities of micro fibrils of pure cellulose. An explanation for the synthesis of this cellulose is to keep the bacteria close to the surface. Deacon, 1996 terms the material a biofilm; a type of cellulitic raft that floats the bacteria close to the surface of the liquid where the most oxygen is found. From an ecological view point, the *Acetobacter* has *evolved* to deal with the high alcohol and acidic environments of decaying plant material left behind by yeasts and other micro flora (VanDemark & Batzing, 1987).

The use of wine intensifies the abject qualities of the fleshy material, being tied to the act of swallowing and consumption. Viewers may be repelled by the apparent merger of interior/exterior, human/animal, food/flesh but whether intrigued or disgusted, the confronting physicality of the work ensures that viewers can not remain disengaged (Figure 3). Lia McKnight curator of "Skin to Skin" Exhibition 2008.

This new fabric woven by the bacterial soft machines will confront the viewers' sensory perceptions; sight, smell and touch. As unusual obsessions and foreign organisms are producing new fabrics, will the consumer find themselves totally repulsed? By covering the body with microbial bio-products, it will bring us closer to these organisms and remove any of the narcissistic notions of us and them!

No longer will the harvesting of once living by-products (such as fur) and production of goods from the death of living organisms be isolated and hidden from the consumer's eye. They will now have to negotiate with the reality of engaging with the rawness of the material and its process, in turn drawing attention to mortality. As discussed by the curator of "Skin to Skin", Mcknight:

The materiality of the work also denies the way in which new technology (and specifically that which relates to the body) is quickly assimilated into the everyday and becomes unnoticed. Presented within familiar contexts of fashion, the sensual material draws together both elements of beauty and the grotesque and we are reminded that contrary to the fashion image in which the

subject is permanently suspended in time and unaffected by environmental conditions, a reality of physical beauty is its inevitable decay. (Exhibition Catalogue 2008)

“Microbes à la mode”

Web:

<http://www.bioalloy.org/projects/micro-be.html>

References:

Deacon, J. (1996). New Scientist, 31 August, p32.

McKnight, L. (2008). Skin to Skin: A Dialogue between art and fashion. [Exhibition Catalogue]. 2 February – 30 March 2008. Fremantle Arts Centre.

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Figure 1. “Metamorphoses” Adding the material while wet to the body.

Photo: Bewley Shaylor



Figure 2. “Decay” Visual effects created by mixing different coloured material.

Photo: Bewley Shaylor



Figure 3. "Alterations" dress made from red wine.

Photo: Ray Scott