

Preface I

The growth of cells in the laboratory under highly defined culture conditions, combined with specific stains to demonstrate special features, allows many aspects of cell behaviour to be investigated. Such studies are widely used for biomedical research and in the fascinating world of tissue engineering. Tissue engineering combines fundamental knowledge about cell biology with sophisticated biomaterials to design and construct artificial tissues for clinical applications, often to replace defective parts of the body.

Various biocompatible materials are already used routinely in dental work, orthopaedic surgery and ophthalmology. Other biomaterials can be used as a temporary scaffold that can be happily repopulated by a specific cell type and this opens up many important and exciting possibilities e.g the successful replacement of all layers of the skin (epidermis and dermis) after severe burns, and the construction of artificial livers – both of these are on the verge of becoming realities.

Cell biologists traditionally use microscopes to view such cells and tissues and are fortunate to be exposed to the great beauty of this microscopic world. It is unusual for designers and artists to explore the juxtaposition of cell biology and biocompatible materials (as a prelude to tissue engineering) but this is precisely what Oron Catts and Ionat Zurr have done. They have used microscopy to observe layers of epithelial (skin) cells growing over sculpted shapes of glass and plastic. The eye of the artist then takes these many images and selects, composes and manipulates them to create marvellous new ‘works of art’. In order to undertake this enterprise it was necessary for the artists to acquire the laboratory skills of tissue culture and all aspects of microscopy and image manipulations. I was delighted when they visited me in the Department of Anatomy and Human Biology at the University of Western Australia in 1996 and we were able to facilitate this project. They have now become experts in all aspects of this work!

Our Department has had a long standing interest in the artistic dimensions of science and medicine, with several artists on the staff, support for exhibitions on the themes of “Art, Medicine and the Body” and “The Skin”, and a major exhibition of microscopic images from our researchers entitled “Art in Science” being staged at the Lawrence Wilson Gallery at the University of Western Australia from June-September this year: this also includes works by Oron and Ionat. The new Image Acquisition and Analysis Facility (funded by the Lotteries) within our Department provides state-of-the-art computers for manipulating digitised images, and this has been used to full advantage by the artists. Their skills and professionalism in this area have been a great bonus for us and it has been a real pleasure working with them. Their design talents and unique interpretation of these cultured cells have generated some extraordinary work for this exhibition. The products of this enjoyable collaboration are only starting to be realised. We hope that the forging of such links between biomedical Departments and artists will flourish and open up many new creative opportunities.

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