GLOBAL FASHION 2018

Studying the materiality of human skin to rethink footwear design

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Abstract

Can shifting the focus of bio-inspired design, towards anatomies of the human body, have sustainable benefits in the evolution of materials and design for fashion?

OurOwnsKIN (www.ourownskin.co.uk) is a project which explores referencing human foot skin to rethink how we design for future manufactured 3D printed and grown shoes.

Historically, footwear design construction has evolved from the manipulation of the material leather, which is the skin of another animal. Manufacturing machines have evolved to automise how we hand manipulate leather materials to make shoes. As new materials such as polymers have been introduced, past construction techniques have continued to influence design innovation.

However, we are now into new territories, where 3D print can construct features so fine the line between materials structure and design construction begin to blur.

OurOwnsKIN investigates if it is now useful to rethink our initial reference points when designing footwear. Bio-inspired design typically references non-human organisms as inspiration, which further reinforces a division between man and nature.

By placing humans within the category of bio inspired design we are integrating ourselves into nature - An approach proposed by Timothy Morton in his text Dark Ecology, 2016.

OurOwnsKIN poses the question 'If we designed footwear for the first time today, using all of the materials and technologies available, whose skin would we reference as a starting point, as a system from which to develop design?'

The paper will suggest sustainable benefits to this approach, to include:

- Opportunities for growing material into design structures,
- Reduction of waste, weight, componentry and need for glues,

- Holistic design thinking to create a systems approach for footwear structures,
- Emotional connections to products which have been evolved from our own bodies

Keywords: bio-inspired design, human anatomy, additive manufacturing, material innovation, footwear design

ISBN: 978-989-54263-0-0