

## FASHIONING EMOTIONAL HEALTH

This is the story of my Scentsory Design® research at Central Saint Martins College of Art & Design, where I work as a Senior Research Fellow in the School of Fashion & Textiles. I am regularly asked where I got the idea for my research, but rarely do I tell the truth because of the stigma I have experienced over the past two decades. Instead I say the idea came whilst volunteering as a 'buddy' for the Terrence Higgins Trust, offering emotional support for people living with HIV and AIDS – but that is only half of the story.

In 1991, I graduated with a degree in Fashion Communication from Central Saint Martins, which led to a career as a fashion stylist in the media (pop promos, editorial, TV). While I was a student I went to Japan looking for work and came back having met my future husband Marc Rolland, who was the menswear designer for Thierry Mugler ('sci-fi' creator of best-selling perfume ANGEL). He introduced me to the wonder of science fiction – and this is where my 'science fashion' story began.

A few years after graduating, I became very ill and was diagnosed with Bipolar II Disorder. I experienced deep depression, manic highs and chronic insomnia; it was a very chaotic and scary period and I was told "never tell anyone". The illness had a catastrophic effect on me as a stylist as I was suddenly incapable of communicating with anyone, particularly in the fashion industry - ironic really, given that fashion is a form of expression, a desire to interact and communicate. Marc encouraged me to look at science and think of fashion in a completely different light; more towards an emotional force for giving 'positive energy'. Inspired by a 1980s quote from Thierry Mugler on the future of fashion being "more about wellbeing and less about well-showing", I took this statement to heart, launched myself into the world of wellness and went and did a PhD at the Royal College of Art.

My goal was simple: to create a 'Smart Second Skin' that could be worn as a

protective layer to enhance my mood, offer emotional support and help me communicate better. Thanks to Professor John Miles at the Royal College of Art who supported my sensory research (and saved my life!) I invented futuristic 'wellness fabrics' based on our most evocative sense and primitive communication system – the olfactory sense.

Marc also has bipolar. As a successful designer in the fashion industry (Salvatore Ferragamo, Brunello Cucinelli), he has had a dramatic impact on my work over the past 20-odd years. It has not been easy; however the bonuses that my type of bipolar gives, such as the wider range of emotions and creativity, even the hypomania at times, outweigh the negative aspects (depression, pain, anger, rage, sadness, social anxiety, fatigue, low self-esteem) and it has all played a major part in my Smart Second Skin vision. With our experience as radical thinkers, sensitive designers and long-term users of health services, our ambition is to start a design-led 'Science Fashion Lab' in Cambridge linked to Haute Couture in Paris.

Fifteen years after completing my PhD and giving birth to our three beautiful children (Madeleine 15, Thaddeus 11 and Zéphyr 10), the demand to improve quality of life, coupled with the fast acceleration of technologies, has led to a growing trend of 'wellbeing' and personal health monitoring tools. During those fifteen years, I have worked on numerous wellness projects from my Smart Second Skin clothing, that emits scent by mimicking the neurobiological delivery system found under skin, to the eScent® personalised user-worn delivery device, capable of dispensing wellbeing scents in response to a stimulus. In 2000, I also worked for an MIT Media Lab start-up company promoting 'wearable technologies' inspired by *Star Trek* (think 'tricorder' and 'communicator').

Fashion will always have the glitzy 'well-showing' element, but it is rarely used as a platform for 'wellbeing', and this is where I am using my bipolar diagnosis to inform my research into this interface of creative design and scientific principles. However I am fully aware that I must tread carefully due to the

sensitivity of the condition.

I am now using my experience as a catalyst to find new ways to balance the physiological, psychological and emotional states through smell and intelligent monitoring technologies. I do this by seeking out leading experts in biotechnology, electronic engineering, psychology and design who share my vision and passion. One of my projects is on point-of-care diagnostics and mobile personal devices with Professor Chris Lowe, a leading science entrepreneurial academic at the University of Cambridge, where I also work as a Visiting Scholar in the Department of Chemical Engineering & Biotechnology. What drives me? My kids. With further research emerging of an increased risk of inheriting bipolar (50-75%) from two bipolar parents, I want to invent a simple but effective way to manage a better life by reducing stress and improving sleep, and therefore limit the risk of a potential acute bipolar episode.

I am pioneering a new discipline of electronic scent-emitting devices that could have a major impact on emotional wellbeing and the way we experience things in everyday life. Smell has the power to evoke emotion because olfactory substances impact directly with the limbic system in our brain. Nowadays, technology only reaches out to sight, sound and touch senses to enhance users' experiences; however, due to technological constraints, there has been limited use of scents to enhance a user's olfactory experience. I am attempting to change this through my research in the Textile Futures Research Centre at Central Saint Martins, and at the University of Cambridge.

Scentsory Design® is a 'science fashion' project that unites emerging technologies, Complementary and Alternative Medicine (CAM), wellbeing and 'emotional fashion' with the ancient art of perfumery and the therapeutic power of essential oils. CAM is used by two million adults as an over-the-counter alternative to stress-relief and sleep products. There is increasing evidence in the growing field of 'aromachology' (the study between scent and psychology founded by the Sense of Smell Institute in 1989) that

certain plant-based essential oils can reduce stress by influencing mood, physiology and behaviour<sup>1</sup>, emotional states and improve sleep. For example, it is widely known that citrus can alleviate stress and lavender can sedate<sup>2</sup>.



Using the science of aromachology as the anchor, this project stems from the realms of science fiction by projecting strange new connections between different disciplines in science, art and pop culture. It explores interactive fragrance technology (i.e. scent-on-demand) that goes beyond (passive) scratch and sniff, burning incense and (alcohol-based) perfume bottles. Often compared with the military police in *Star Trek: The Next Generation* who sniffed aromas from sensory emitters embedded in uniforms to change their state of mind, Scentsory Design® invents a new method to deliver scent from 'intelligent' mood-enhancing clothing. By creating an 'active' scent symphony that is tailored to fit your mood throughout the day, this is a new wearable concept in electronic perfumery that stimulates the sense of smell to trigger emotion. In a similar light to the 'scent organ' in Aldous Huxley's *Brave New World* novel, it works as an olfactory keyboard that stores your favourite wellness scents. It has the ability to choose from an entire palette of scents that changes over time, depending on how you are feeling.

Although still in the early stages of development, the technology offers a personalised olfactory bubble of wellness from a micro-device called eScent® - a kind of portable scent player or 'iPod' for scent. Further inspired by *UBIK*, a science fiction novel by Philip.K.Dick, which describes a 'reality/illusion' projection sprayed from a can to destabilise a nightmare, this intimate 'bubble' signifies a protective 'skin' or pendulum that balances wellbeing. Programmed and activated by the user alone, eScent® delivers a non-invasive 'wardrobe of fragrances', in a controllable manner depending on mood or time of day. If combined with biometric sensors that measure how you are feeling, clothes and jewellery could enhance mood by dispensing soothing scents to reduce stress and anger, boost energy and increase confidence levels. Similarly, relaxing scents could fight tiredness; analgesic scents could relieve pain, or improve memory.

We have long known that stress is the adverse reaction people have to excessive demands placed on them. With this in mind, I have recently completed a prestigious Knowledge Transfer Fellowship called *Smell The Colour Of The Rainbow* in the area of smell and scent to reduce stress and improve sleep, through a collaboration with Philips. Funded by the Arts & Humanities Research Council, over the course of eighteen months, I engaged in an active Knowledge Transfer program to explore opportunities resulting from my academic work on eScent® in areas of interest to Philips. I worked with Philips stress and sleep businesses (therapy/'mood'/SAD lighting) and AVENT (mother/child) on 'meaningful innovations' that demonstrated the benefits of scent-on-demand in 'emotional products'. The project greatly appealed to me, not only because of my erratic mood swings, but as a sufferer of post-natal depression and never being able to sleep the same way again after having children!

On a personal level, the fellowship really gave me the opportunity to embrace my bipolar diagnosis. I worked with some of the UK's leading smell experts from Cardiff University, along with joint expertise in

design, colour and technology. By introducing these elements into the world of health and wellbeing, I used mood-enhancement as the route. Evidence-based essential oils were validated by the latest aromachology research and correlated with colour, to create a personalised 'therapeutic rainbow' pendulum, across the range of de-stress > relief > calm > peaceful > relax > super-energise. Clinical evidence on the properties of lavender and sweet orange were critically reviewed and scientific data was extracted in support of the value of essential oils to alleviate stress and aid sleep. My team presented 'meaningful innovations' to a wider Philips audience to demonstrate a deep understanding of the therapeutic nature of the oils' physiological and psychological effects on the body in terms of sleep behaviour and the links between scent, colour and emotional state.

In November 2011, I presented eScent® as a new Wellness Recovery Action Plan (WRAP) strategy to improve wellbeing at the (Philips sponsored) Quantified Self Europe Conference. It was introduced as a means to complement 'self-tracking' patient-driven monitoring tools<sup>3</sup> pioneered by the Quantified Self (QS) movement originating from Silicon Valley in 2007. For example, people with bipolar disorder might find it useful to track sleep patterns or extreme mood swings, to reduce the risk of relapse by identifying early warning body signals (irregular sleep, physiological response of erratic behaviour etc), to sustain daily maintenance plans or to manage medication. By wearing a scent device in addition to QS self-monitoring tools, eScent® would release counteractive scents to relieve tension whenever stress levels exceed a certain threshold. I am not trying to replace mood stabilizers, nor antidepressants, but instead to design a new intimate active 'scent bubble' to complement orthodox treatments.

My next step is to introduce a new dimension to fashion by taking the colour/scent work from my fellowship and researching primary (bipolar) emotions which can be expressed at different intensities (depending on personal needs) and mixed with one another to create 'emotional fashion'. I am excited about the

future and the thrill of being able to move my research forward: to discover new connections and new ways of living which I am now commercialising as a (sc) entrepreneur through University spinout companies.

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Biography and links to her projects:

<http://www.arts.ac.uk/tfrg/node/10957>

An excellent *Cambridge Network* news article:

<http://tinyurl.com/8r3fmdd>

Jenny's Knowledge Transfer Fellowship project:

<http://j.mp/PY5rc3>

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- <sup>1</sup> Herz, R.S., (2009), 'Aromatherapy Facts and Fiction: A scientific analysis of olfactory effects on mood, physiology and behaviour' *International J of Neuroscience*, **119** :263–290
  - <sup>2</sup> Goel, N., Kim, H., Lao, R. (2005) 'An olfactory stimulus modifies night-time sleep in young men and women' *Chronobiology International*, **22**: 889-904
  - <sup>3</sup> Swan, M., (2009) 'Emerging patient driven healthcare models: an examination of health social networks, consumer personalized medicine and Quantified Self-Tracking' *Int J of Environment Research and Public Health*, **6**(2): 492-525