® VOGUE

DEC

NIGHTTIME LOOKS:
SPARKLING SHOES,
THE PARTY COAT &
SEQUINED EVERYTHING

BACKSTAGE AT COUTURE
WITH *MR ARMANI*

MICHELLE OBAMA *ON
FINDING STRENGTH*
IN STANDING OUT

ELIZABETH DEBICKI
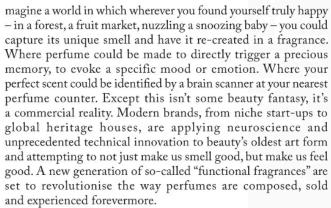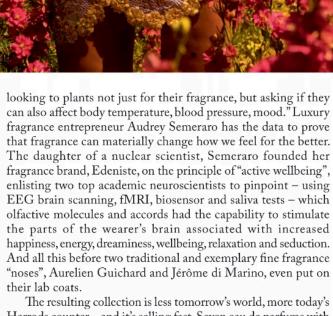*The Crown's dazzling new Diana*

*FASHION
& TV*

The SCIENCE of scent

What does the FUTURE *of* FRAGRANCE *look like? It's as much about* INNOVATION *as it is* INSTINCT*, discovers* SALI HUGHES

I magine a world in which wherever you found yourself truly happy – in a forest, a fruit market, nuzzling a snoozing baby – you could capture its unique smell and have it re-created in a fragrance. Where perfume could be made to directly trigger a precious memory, to evoke a specific mood or emotion. Where your perfect scent could be identified by a brain scanner at your nearest perfume counter. Except this isn't some beauty fantasy, it's a commercial reality. Modern brands, from niche start-ups to global heritage houses, are applying neuroscience and unprecedented technical innovation to beauty's oldest art form and attempting to not just make us smell good, but make us feel good. A new generation of so-called "functional fragrances" are set to revolutionise the way perfumes are composed, sold and experienced forevermore.

Fiona Harkin, foresight editor at world-renowned trend forecasting agency The Future Laboratory, tells me, "Functional fragrances are a growing development, based on the idea that perfume can have psychological and physical effects. Brands are looking to plants not just for their fragrance, but asking if they can also affect body temperature, blood pressure, mood." Luxury fragrance entrepreneur Audrey Semeraro has the data to prove that fragrance can materially change how we feel for the better. The daughter of a nuclear scientist, Semeraro founded her fragrance brand, Edeniste, on the principle of "active wellbeing", enlisting two top academic neuroscientists to pinpoint – using EEG brain scanning, fMRI, biosensor and saliva tests – which olfactive molecules and accords had the capability to stimulate the parts of the wearer's brain associated with increased happiness, energy, dreaminess, wellbeing, relaxation and seduction. And all this before two traditional and exemplary fine fragrance "noses", Aurelien Guichard and Jérôme di Marino, even put on their lab coats.

The resulting collection is less tomorrow's world, more today's Harrods counter – and it's selling fast. Seven eau de parfums with a patented mood-stabilising accord, designed to be layered with any of six "Lifeboost Active Essences", each contain molecules

scientifically proven to stimulate areas of the brain associated with relaxation, energy and more. The Nue Co is another brand that also uses research into the connection between cognitive function and sense of smell in its very popular Functional Fragrance, promising to "instantly impact the wearer's emotional state and soothe the mind", with green cardamom, bergamot and coriander. It's clearly having some effect. Retailers can't keep it in stock.

While Edeniste phase one is only recently launched, Semeraro is already working on more moods and greater emotions. She says, "Everything related to love is difficult from a scientific point of view, because there are so many different kinds – familial, romantic, platonic, maternal – and all occupy another zone in the brain and that cannot yet be defined." Nonetheless, she believes Edeniste has cracked it, bottled it and will launch soon. Hang on to your heart rate.

Givaudan, the world's largest creator of fragrance, has an entire department devoted to futuristic technology, headed up by computer scientist Geovana Rey, who also uses vast amounts of neuroscientific data to allow brands to understand what consumers want, then offers them state-of-the-art tools to allow perfumers to deliver it. "The data makes sense of abstract concepts," says Rey. "Let's say a client wants to develop a fragrance with the emotional resonance of rain. What used to happen is a perfumer would say, 'OK, this is how I think rain smells…' And their definition may chime with his or her own culture or climate, but it may not resonate with a consumer in São Paulo. Now we have so many scientific studies on brain functionality and olfactive response, as well as feedback on colours, moods and emotions such as happiness, from people all over the world, that our artificial intelligence can identify global commonalities and suggest which ingredients and notes the perfumer could use to make their dream into a real fragrance with wider appeal." And if consumers associated a colour, emotion or mood with an environment – perhaps a linen cupboard with calm and wellbeing – then Givaudan uses its Scent Trek technology to capture any aroma globally and break it down, molecule by molecule, providing perfumers with an exact roadmap on how to re-create it. Think of it as Shazam for smells, only better.

The tech also allows our appetite for the playful and whimsical to be sated. For example, for a recent candle collaboration, Jo Malone London were able to install technology in the kitchen of Michelin-starred chef Jean François Piège, designed to grab every molecule of the moment fragrant steamed rice reaches its peak fluffiness, becoming beautifully aromatic, comforting and ambrosial. "The possibilities are limitless," says Celine Roux, vice president global fragrance development at Jo Malone London. "We can use notes that didn't exist in perfumery before – fruits, plants, whole forests. Any smell can now be re-created to evoke any mood."

While neuroscience and tech have so far been deployed mostly in the creative process, they are beginning to appear front of house too. In June 2022, L'Oréal unveiled YSL Beauty's Scent-Sation at a Paris tech conference, created in partnership with a neurotech company called Emotiv. It is an in-store experience that uses a headset to track the emotional responses of customers to different scent families and individual notes, then uses an algorithm to recommend specific YSL fragrances most likely to please. The exploratory process is fun, attentive and interesting, if not foolproof. Past preferences aren't always an indicator of future infatuations. For instance, I broadly dislike floral fragrances and yet the love of my life is Chanel No5 – an aldehydic floral. If we as perfume consumers restrict ourselves to an olfactory "type", are we not only denying ourselves surprises, but also risking familiarity breeding contempt?

"The possibilities are LIMITLESS. We can use notes that didn't EXIST before. Any SMELL can now be re-created to evoke any MOOD"

"I hate to believe that people would fit in a box or that you can explain someone's sensibility with computer programmes," says Olivier Polge, master perfumer at Chanel – among the few major fragrance houses to create its portfolio fully in-house. "There has to be a place for fantasies." While Polge enthusiastically embraces state-of-the-art technologies, such as drones to analyse the efficiency of ingredient crop farming, the manufacturing process and other operational issues, he mostly draws the line at creation by algorithmic second-guessing. He creates fragrances he believes will be loved based almost solely on instinct and experience. "The whole thing about creation of perfume is to be subjective. It's all about style, impression and feelings." He says, "You know, if you have to create 10 perfumes within the same month, you might need some help from computers, but if you take your time over creation, this is what brings the poetry, the feelings."

Celebrated British perfumer Lyn Harris, of Perfumer H, is more sceptical still. Like Polge, she applauds hi-tech intervention in more sustainable and selective raw-ingredient harvesting, but shuts it firmly outside of her creation lab – a very beautiful but startlingly traditional-looking apothecary-style bench room, lined with hundreds of ingredient oil bottles. Harris tells me, "Computers don't have style, taste, flair." She continues, "Perfumery is an art and art cannot be replaced by an algorithm without losing its soul."

At Givaudan, Rey has shown countless reluctant and downright cynical perfumers her technology, and seen many a devout convert. "These sorts of innovations are never about replacing perfumers with data. They're about empowering them with tools to do things more efficiently, quickly and confidently – the vision is always theirs." Besides, she believes that functional perfume is an unstoppable force. Both she and Semeraro believe that future functional fragrances will be able to not only lift our moods but could also improve our health. Skin-nourishing fragrances that can be worn by chemotherapy patients without irritation, molecules that can access forgotten moments and feelings in people with Alzheimer's, fragrances that can raise our body temperature, reduce cortisol levels and more – all are being explored as the technology advances at pace.

But when it comes to spraying our pulse points, Rey believes we'd be wrong to worry about losing the magic to machines. "The data and technology is effectively a robot. It doesn't have emotions, a spirit or a soul. It doesn't replace the magic. It allows human perfumers to make the magic happen, to be able to make their fantasy a reality. In the end, making perfume is like falling in love. There are some things you just can't calculate."