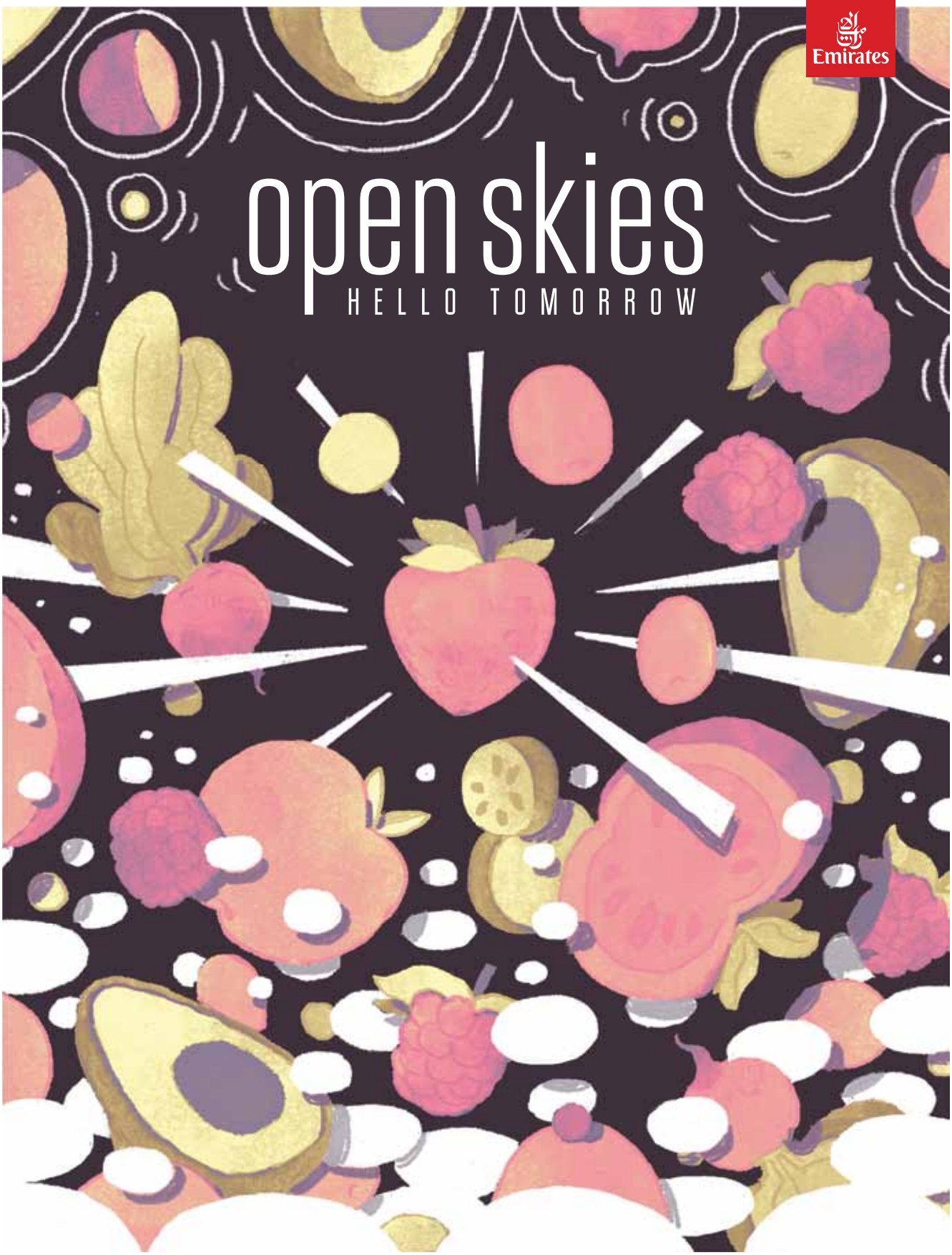
Emirates

open skies

HELLO TOMORROW



THE FOOD MYTH

BRAIN

FOOD

WHAT IF WE TOLD YOU THAT THE FLAVOUR OF YOUR FOOD HAD MORE TO DO WITH YOUR SENSE OF SMELL THAN WHAT WAS GOING ON IN YOUR MOUTH? WHAT IF WE SAID THAT, IN THE FUTURE, EATING OUT WOULD BE A FULLY IMMERSIVE EXPERIENCE INVOLVING FOOD THAT HAS NEVER TASTED SO GOOD? THE FUTURE IS HERE AND IT HAS A GRIP ON YOUR SENSES

WORDS: MARK JOHANSON ILLUSTRATIONS: KYLE SMART

Try a quick experiment the next time a member of cabin crew drops by with food or drink. It's nothing too demanding. Just take a bite or sip, think about how it tastes, then plug in your headphones and tune in to one of the classical or jazz music stations.

What sort of sounds do you hear? Is it an upbeat and higher-pitched song with, say, a twinkling piano or chimes? If so, you may find that your food or drink tastes slightly sweeter than before. But maybe it's a slower and lower-pitched song you're listening to, like brassy jazz or bass-heavy blues. These sounds might bring out the bitter and umami tastes.

Researchers call this subtle change in flavour perception "sonic seasoning," and it's an important element within the emerging field of research known as neurogastronomy.

"Neurogastronomy is the name given to studies that look at the brain on flavour – namely which bits of our brains light up when we're tasting something," explains Oxford professor Charles Spence, author of The Perfect Meal. "The hope is that, by understanding the brain mechanisms underpinning how we experience flavours, we can better design foods and beverages."

Spence is kind of like the Yoda of neurogastronomy. His Crossmodal Research Laboratory is full of gizmos like aroma machines and taste pumps, and he dishes out new studies at a dizzying rate that highlight the ways in which "off plate" elements impact our perceptions of flavour.

Up until recently food was discussed almost exclusively in terms of taste. But according to Spence, eating is actually one of the most multisensory experiences we all have on a daily basis. Food isn't just something we taste; it's something we touch, see, hear, and, above all else, smell. In fact, research shows that smell may account for as much as 80 to 90 per cent of what we perceive as flavour. Anyone who's ever had a cold and couldn't stomach the taste of their food already knows this, though they might not have realised it at the time.

What it is that Spence is trying to discover is how various stimuli play a role in our dining experience. And his lab is kind of like a kitchen for mad scientists.

"Imagine somebody comes in to the lab," he says, describing a typical day at the office. "It's a dark, silent room, maybe in a soundproof booth, and they have a couple of tubes just underneath their nostrils and a couple of tubes lying on top of their tongue. We can deliver specific smells and specific tastes at the same time, or different times, or matching combinations of smell and taste like sweetness on the tongue and strawberry to the nose, or mismatching


FOOD IS ALMOST EXCLUSIVELY DISCUSSED IN TERMS OF TASTE, BUT EATING IS ONE OF THE MOST MULTISENSORY EXPERIENCES WE HAVE

combinations like the smell of chicken stock and a sweet taste."

Spence gets his subjects to respond and differentiate what they're perceiving: How intense is it? How much do they like it? What shape are they thinking of at any given moment? If he plays music, can he enhance the experience of taste?

It all might sound a bit crazy, but new insights into our multisensory perception of flavour have already had wide-sweeping impacts on the products we consume. Have you noticed that several of your favourite chocolate bars recently hit the shelves with a "new shape"? That's because a study sponsored by Nestlé found that curves – as opposed to straight lines – enhance in-mouth perceptions of melting. Nestlé boils it down to something called "mouth geometry": A curved shape is simply a better fit for your oral cavity.

Other companies, like Unilever, are experimenting with reducing the sodium content of their food products while still maintaining the same salty taste by adding high levels of savoury aromas. Using 60 test subjects and two samples of beef bouillon, researchers found that a combination of potassium-based salt replacers and savoury aromas could compensate for a 30 per cent reduction of sodium without any noticeable change in the flavour profile.

Companies have also begun enhancing their products by offering sensory apps. Take Häagen-Dazs, for example. It recently released a 'Concerto App' that lets consumers scan a QR code on each ice cream carton to enjoy a private, two-minute concerto. The brand believes this virtual-reality showcase – a fiddler literally pops up from the carton top when viewed through your phone – will give the ice cream enough time to temper so that it's at an ideal consistency when eaten. Rival Ben & Jerry's, meanwhile, is rumoured to be developing a soundtrack to pair with its flavours.

Perhaps the most exiting practical application of this research in neurogastronomy (and the closely related field of gastrophysics) is how new ideas are filtering down into restaurant kitchens around the globe.

"There are many chefs who can look at the science and turn it into wonderful, creative, talked about, stimulating experiences," Spence said. "They will take an idea, put it on the menu, try it out, and you have the perfect environment to bring something away from the lab. You have real diners paying real money for real experiences."

Spence believes there's a new generation of chefs right now who, for the first time in history, are "thinking about the minds of their diners and not just about the sourcing, preparation and presentation of the food on the plate".

One of his early collaborators was chef Heston Blumenthal, whose three Michelin-starred restaurant, The Fat Duck, is located in the British village of Bray. Exploring natural affinities between taste and sound, the pair discovered in 2007 that diners perceive seafood as stronger and saltier when accompanied with the sounds of the ocean – even if those seagull squawks and pounding waves emanated from a speaker. A dish resulting from the collaboration, called Sound Of The Sea, has became one of Blumenthal's signature items: A sculptural plate of seafood, seaweed and panko "sand" that comes with an iPod tucked into a conch shell.

"Now more than ever the line between food and science is being blurred," Blumenthal explains. "Our senses are so entangled and intertwined that the possibilities of what we can create are endless… I think we almost need to go back to the basics, examining how our primal senses react to the world around us to harness this in our enjoyment of food."

Sound Of The Sea was developed in the early days of multisensory dining, a movement that has since ballooned in size and scope, birthing new restaurants akin to culinary funhouses. International food and restaurant consultants Baum + Whiteman called multisensory dining one of the 11 hottest food and beverage trends for 2015, and new offerings include Ultraviolet In Shanghai or Sublimotion In Ibiza. Both invite diners to eat multicourse meals in a highly stylised environment where lights, sounds, temperatures and aromas are

FANTASY FOOD

Five of the world's best multisensory eating experiences

ULTRAVIOLET

Ultraviolet is Shanghai's most mysterious restaurant (it has no postal address) and the culmination of 15 years of meticulous planning from French chef Paul Pairet. Diners meet at an agreed spot and are ushered to a table in a bare-bones room nearby with no décor whatsoever. As the 20-course meal begins, however, they find themselves completely bombarded with stimulation, from 360-degree wall projections to scent diffusers and mood lighting. The immersive dining experience is choreographed in a way that's said to enhance the flavour perceptions of each dish.

uvbypp.cc

TICKETS BAR

The name is like a cruel joke because tickets to Barcelona's famed Tickets Bar are few and far between. But those who do secure a spot (generally two months in advance) can expect everything from exploding olives to edible trees made of cotton candy in this eclectic tapas bar from Ferran Adrià, of El Bulli fame, and his brother, Albert. Tickets draws equal inspiration from the theatre and the circus, with dishes that dabble in sensory-altering magic of the mind.

ticketsbar.es

THE FAT DUCK

Heston Blumenthal was at the forefront of neurogastronomy before the science even had a name, and his iconic restaurant, The Fat Duck, will return to the British village of Bray later this year after a six-month stint at Melbourne's Crown Towers hotel. Expect concoctions like a cup with equal

portions of hot and iced tea that don't blend or Blumenthal's signature Sound Of The Sea, which comes with an iPod tucked into a conch shell to enhance the salinity of the seafood it's paired with.

thefatduck.co.uk

ALINEA

Chef Grant Achatz has brought the culinary carnival to Chicago with his inventive and wildly acclaimed restaurant Alinea. From surprising scents to culinary pyrotechnics and mood-altering lights, dining at Alinea is nothing short of an adventure for the five senses. One of the most theatrical dishes has to be the Green Apple Balloon. This edible inflatable is made from apple taffy that's been puffed up with helium and attached to an "apple leather" string. Guests pop the balloon to enjoy flavours lighter than air.

alinearestaurant.com

SUBLIMOTION

Travel around the world, from the Spanish island of Ibiza to the bottom of the ocean and the depths of outer space, on this 20-course culinary journey from Michelin-stared chef Paco Roncero. Just 12 diners at a time are allowed into Sublimotion's high-tech room (which is encased in ever-shifting screens) to witness the happy marriage of visual arts, haut cuisine and virtual reality courtesy of the latest wearable technology from Samsung. Various stimuli are meant to trick the mind and enhance all five senses for a greater appreciation of the multisensory perceptions of taste.

sublimotionibiza.com

RESEARCH SHOWS THAT SMELL MAY ACCOUNT FOR AS MUCH AS 80 TO 90 PER CENT OF WHAT WE PERCEIVE AS FLAVOUR

ever-shifting and meticulously controlled to tease out certain flavours.

Other restaurants have used the research in neurogastronomy in subtler ways, crafting soundscapes with synesthetic matches between taste and music or using science to discover the most appealing ways of plating a dish. The latter is the subject of an exhibit at the London Science Museum, where Spence teamed up with several up-and-coming chefs to see if the way they intuitively plate their dishes matches up with how everyday museum-goers would want them.

One interesting find: Most people abhor asymmetrical plating, a current trend where chefs put all of the ingredients on one side of the pate and leave the rest of the surface blank.

Spence hopes that the best of what works at the lab, the public experiments and these exclusive restaurants will birth new ideas in the near future, like multisensory cinemas or restaurants where portable devices aren't a nuisance, but rather wholly integrated into the dining experience through apps or iPad "lightplates" (already available at Schauenstein Schloss in Switzerland). "No matter how great the food is," he explains, "people will appreciate it that much more if everything else around is optimised."

The food-fixated brainiac also hopes new insights into our multisensory perception of flavour will percolate down to everywhere from hospital dining rooms to airline cabins, where pressure and engine noise can dull the senses.

Just imagine if on your next flight you had a curated soundtrack to add some sonic seasoning to your meal, or an aroma stick to bring out the sweet and salty elements, which are most affected by altitude. This, Spence believes, is the future of dining, where taste is only the beginning and flavour is a multisensory mind game.

NOW DO THIS AT HOME

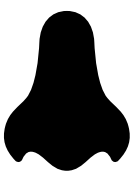
How to enhance your eating experience

PLAY WITH LIGHT

Purchase a multicoloured LED light (with remote control), plug it in above your dinner table, and experiment with how different settings affect the flavours of your food. According to Spence, red lighting can bring out fruitiness or sweetness, while a green light can bring out sour and fresh notes. Trying to loose weight? Recent research from the University Of Arkansas shows that a blue light may trick you into eating less.

PLAY WITH SHAPE

Shape is one of the most overlooked elements of flavour, but it can be particularly important when it comes to preparing desserts. The Crossmodal Research Laboratory found that sweetness is matched with roundness, bitterness is matched with angularity, and sour tastes tend to be angular and asymmetrical.

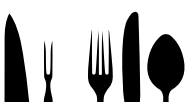


PLAY WITH SMELL

The majority of what we think of as taste actually comes from our nose. One easy way to enhance the smell of a dish at home is to prepare it right at the table. You could, for example, cook fish or meat in a smoker bag and slice that bag open right in front of your family or friends so the aromas stay at the table. You can also play with the cutlery by wrapping various herbs around the handle of a fork and seeing how those smells affect the taste of the food.

PLAY WITH PLATES

At your next dinner party try serving the same dessert to your guests on vastly different plates. Experiments conducted at El Bulli's test kitchen in Spain found that diners perceived strawberry mousse served on a white plate as sweeter than the same dessert served on a black plate. Subsequent research found that round plates accentuate sweetness, while heavier plates enhance perceptions of flavour.



PLAY WITH CUTLERY

Speaking of heavy plates – heavy cutlery can also enhance diners' perceptions of flavour. A team from Spence's Crossmodal Research Laboratory conducted a large-scale dining experiment at a Scottish restaurant earlier this year and found that diners who ate with heavy cutlery were willing to pay 15 per cent more for their food than those who ate with the restaurant's normal, lighter utensils.