Survival, Love and Food: Cracking the "Perfume Code"

A new program pairs flavorists and perfumers to take fragrances beyond "just odor"

"It's almost like a heartbeat," says Firmenich fine fragrance perfumer Honorine Blanc, discussing the effects of adding subliminal food notes to fragrances. The Swiss company believes it has created a system—the FiFi-nominated Smell the Taste[a]—that harnesses the craftsmanship of flavorists and the more abstract art of perfumers to create polysensorial scents that go beyond conventional food notes: the juiciness and crunch of apples, the bubbles in champagne.

The head of the program, Syed Shamil (director of innovation marketing, fine fragrance), is a PhD whose background is in the flavor side of the business. Fragrance houses have long been employing food notes in fragrances. So how is this program different? "Many times, when the fragrance description talks about a food note, it's not using a flavor," says Shamil. "It's an abstract interpretation of a food note. Our work includes a real flavor that has been adapted for perfumery use." Because of the collaboration with flavorists, he says, these scents incorporate all dimensions of flavor: taste, smell and texture.

Dr. Syed Shamil, Firmenich's director of innovation marketing, fine fragrance, refers to flavors in fragrances as "instinctual triggers of success."

Origins of Smell the Taste

The fragrance industry has struggled in recent years, suffering from an excess of launches (~600 per year), lack of consumer motivation and blurring of product categories. In response, Firmenich sought a new way to inspire creativity, to "create products that touch the consumer instinctually and intimately." Debra Butler, vice president of creative marketing, worked closely with the well-known anthropologist/psychologist turned marketing guru Clotaire Rapaille[b] (Archetype Discovery Worldwide) to uncover the unconscious mind and, as Shamil puts it, "reveal the hidden instinctual and emotional drivers of fragrance attitudes."

How do humans appreciate fragrances? Working with Rapaille, the team used archetype discovery methodology to dig beneath rational and logical layers of human thinking, which they felt didn't represent true drivers of human behavior. The goal: find the "most primitive and compelling behaviors related to perfume."

Rapaille posits three separate "brains" within the human mind, known as the "triune brain theory," first advanced by neurologist Paul MacLean.[c] According to this theory each brain has a unique function and need:

- ***The reptilian brain:*** This is the center of instinct and survival. It is related to breathing, the heartbeat, sex, violence, reproduction, etc., and dictates behavior. It is the oldest and smallest segment of the brain, though (in concert with the limbic brain) one of the most powerful. This is the brain that triune theorists say humans are born with. "It's really the reptilian and limbic [segments] that are making the decisions," says Shamil.
- ***The limbic brain:*** This brain has been built on top of the reptilian brain through evolution. The limbic brain is the center of emotions and memory, the part of the brain most often discussed in theories of fragrance's power. This part of the human brain is said to develop during early childhood, birth to age five.
- ***The cortex:*** For perfumers, this is perhaps the least significant brain. This is the topmost layer of the human brain, which (according to the triune theory) is in place by age seven. The cortex is the home of logic, rationale, reasoning, and thinking—the intelligent part of the brain. Through what Shamil describes as "backwards rationalization," humans tend to believe the logical cortex is the most important and influential segment of the mind. It is, after all, that which keeps human animal instincts at bay. (This ability can be "put to rest" in situations in which a person is intoxicated.)

Whatever people may wish to think, Shamil says, "When the reptilian is up against the cortex in a direct conflict, the reptilian always wins."

To illustrate, Shamil cites an experiment: subjects were shown a packet of sugar that was then poured into two bowls in full view of the participants. One bowl was subsequently labeled "sugar" and the other "arsenic." The audience was then asked to sweeten its coffee using sugar from either of the two bowls. Every subject chose to use sugar from the bowl labeled as such. Despite that the audience had seen the same sugar emptied into both bowls, Shamil says, "No one touched the bowl labeled arsenic because arsenic equals poison equals death."

[a]Smell the Taste is a trademark of Firmenich.

[b]Rapaille is perhaps best known as an instrumental figure on the team behind the development of Chrysler's PT Cruiser.

[c]Read Rapaille's own take on the triune theory here: *www.saleslab.info/documents/article/SalesLab_Article3brainsC.pdf*

He continues, "When you're designing a product, you need to incorporate all three brains into the design. You need to have a reptilian component, a limbic component and—at least in the communications strategy[d]—the cortex. You need to have a reptilian hot button that, when pressed, brings out a primal response that's all about survival."

The Firmenich team refers to the instinctual structure of perfume as the "perfume code." The elements the group identified as key were: survival, love and food. "What do you do to survive?" Shamil asks. "You eat food. Food has flavor, and flavor is taste, smell and texture—all these things which are primal." He explains that food ties into the love component as well, because food often takes one back to childhood, a place of happiness and peace.[e]

Shamil refers to flavors in fragrances as "instinctual triggers of success." What makes flavor so interesting, he notes, is that it incorporates taste, smell and texture—a combination of three distinct senses that unify into a single sensation. What distinguishes the taste element is that humans are born with "biologically programmed" preferences: sweet, due to its association with energy; salt, which relates to homeostasis and well-being; umami, due to its relevance to protein and growth; averse response to sour notes, because of their association with food spoilage; and averse response to bitterness, due to its association with poison. Meanwhile, humans' odor preferences are not biologically programmed. These develop over time as associated cues linked to things such as taste or experience. By adding flavors to perfumes, Firmenich believes its perfumers can create fragrances that tap into the human survival component, while activating childhood memories culturally imprinted to food and love. This is the genesis of Smell the Taste.

"When you smell the pear, through associative learning you will perceive taste and texture because the brain learns to associate," says Shamil. "We say that vanilla is sweet when we smell it. It is not really sweet. In order for it to be sweet there has to be a non-volatile [component] that touches your taste receptor. But because vanilla is always used in combination with sweets, desserts and so on, we say vanilla is sweet."

"If you're adding genuine flavor-derived fragrance notes," he continues, "you are adding something above and beyond an abstract fruit note, for example. They are a real reconstruction, which means that the scents will allow people to recall taste and texture."

The program's flavorists create flavors—with a focus on authenticity—which are then adapted for perfumery use, including substituting any material inappropriate for fragrance applications. The resulting formulas comprise the Smell the Taste program. There are 100 products arranged into seven categories referred to as Aromaspheres.[f,g,h] The main Aromaspheres are:

- Dairy and Oils (ex: milk, whipped cream)
- Brown and Bakery (ex: maple syrup and marshmallow)
- Fruits (ex: cherry and kiwi)
- Spirits and Fantasy (ex: cola and gin)
- Herbs and Spices (ex: mint and saffron)
- Vegetables (ex: salty olive and mushroom)
- Meat and Seafood (ex: bacon and smoke)

By cross-referencing clients' needs with its own categorizations, the company develops solutions for such concepts as edible watery (watermelon) or edible green (cucumber). Perfumers then weave the appropriate food notes into their fragrances.

New Tools for Perfumery

"When you look at perfumery today compared to 20 or 30 years ago, we're much more open in our way of working," says Blanc, whose creations include *Gwen Stefani Harajuku Lovers Music*, *Marc Jacobs Splash Pear* and,

[d]Shamil says a communication strategy, such as the classic ad campaign in which the model says "Because I'm Worth It," provides a rationale, or justification, to the consumer's cortex for why a purchase is acceptable. Meanwhile, they may in truth be acting upon their reptilian core.

[e]Shamil makes the interesting point that humans tend to recall happy memories with much greater intensity than they do pain. This is of course a design aspect of survival. Shamil uses the example of childbirth: if mothers remembered the pain of birthing the first child, they'd likely avoid having the second child. In addition, childhood memories tend to be idealized, which means that the love food allows one to recall is "improved" from the reality. "You're bringing in all that emotion and happiness and the warmth and comfort that you felt," says Shamil. "Honorine [Blanc] mentioned a heartbeat in fragrances. Heartbeat is all about survival. You need to have this survival-reptilian component in any product you're designing."

[f]Aromasphere is a trademark of Firmenich.

[g]Meanwhile, Firmenich categorizes its perfumery raw materials into an Olfactive Galaxy which is based on olfactive profiles, not natural origin or chemical structure. The olfactive families, arranged in a series of olfactive "planets," revolve around a core of basic floral types: jasmine, rose and muguet.

[h]The program also includes an eighth non-food group that features notes such as wood and leather.

with Richard Herpin, *Usher She*. "We are simpler today in construction and our way of thinking. In another way we're more complex. We're trying to use the complexity of the raw materials and technology to make a simple piece of art or structure. Every piece that you use in a fragrance is very important."

Blanc says that bringing flavorist-derived flavors to perfumery adds a dimension to fragrance. Specifically, she cites the example of *Splash Pear*. "When you create a 'pear' for fragrance, you smell it and you create. But when you ask the consumer what the pear smells like, they're going to say 'juicy, crunchy, green, sensual.' It's all the feelings about the pear that are very important. Using flavors in perfumery helps us bring all these new emotions to the fragrance." She explains that the added texture makes scents more lively and three-dimensional. "If you can enjoy a fragrance with all your senses, then you have a much better experience. A fragrance should take you to another world of imagination, where all your senses are at a high level."

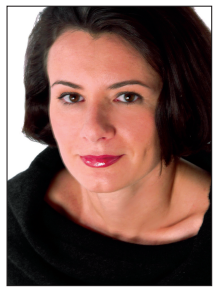
New tools are the lifeblood of perfumery, and Blanc sees Firmenich's work in flavors for perfumes as "a new way of seeing fragrance." She adds that flavors aren't just for food notes. "It's also a new way of recreating florals. We can recreate jasmine using flavor notes because in every flower there is a touch of fruit. You can make the flower more edible."

Collaborations with Flavorists

The company's Smell the Taste program required that synergies be built between the flavor and fragrance divisions. The project involves many culturally diverse flavorists from across the globe—Geneva; Paris; Shanghai; Tokyo; Princeton, NJ; Anaheim, CA; and Lakeland, FL—all working within their individual spheres of competency. For example, a flavorist in Japan formulated a red bean flavor that Blanc is fond of. A honeysuckle flavor was created by a flavorist in China.

Blanc sees the flavorists' input in the Smell the Taste accords as invaluable, not just on a technical level, but also a conceptual one. "A flavorist is going to think like a flavorist, with his mouth and not just his nose. If you give me a flavor formula and ask me to adapt it, I'm going to think 'perfumery.' We make sure there is always a flavorist [involved] so you add something new. There's this constant conversation, which is great because you approach the fragrance in a different way—not just top, middle and bottom."

The key, Shamil says, is for the fragrances to address both the volatiles and non-volatiles in the target food flavor. In addition to composition and headspace analyses, the company performs research, measuring the release of volatiles in the mouth, in real time, as food is chewed, providing a dynamic picture of flavor release and the interaction between taste and texture. "Our flavorists are able to use all these analytical data and, in combination with their own creativity,



Firmenich fine fragrance perfumer Honorine Blanc says, "We're trying to use the complexity of the raw materials and technology to make a simple piece of art or structure. Every piece that you use in a fragrance is very important."

recreate (figuratively) what exists in nature," he adds. "What perfumers do is synergistically blend [flavorists'] science with their own artistic flair and imagination to create a piece of finished art."

Blanc cites the example of adapting an apple for a fragrance. When the perfumer looks over an apple formula with a flavorist, she may ask that they bring out just the crunchy or juicy aspects. The flavorist is able to identify the key materials associated with those sensations and allow the perfumer to bring those to the fragrance. Both Shamil and Blanc are quick to point out that this project's intent is not to have consumers walking around smelling like food. Rather, the idea of food (and the sensations related to food) creates a thread under the surface. "You're going to bring a subliminal effect of a pear to a fragrance without it being just a pear," says Blanc. Shamil adds, "If you just want a certain aspect of the flavor you can [use just] certain materials, such as the impact molecules. In that case it won't be literal, but you're taking literal components of the entire flavor."

Beyond Traditional Flavors

Blanc enthusiastically points out that Firmenich's program isn't strictly limited to traditional fragrance food notes such as apple or pear. "Today, we have flavors such as red bean and sweet pea that don't have much odor, but have a texture you can use." The perfumer believes that the consumer is more open to these sorts of textures and that the old rules of what is allowed, for example, in a masculine fragrance, are no longer as rigid as in the past. But what if the consumer isn't quite ready for perfumery's latest innovations? "It's up to us to push them a little bit, and give them excitement," says Blanc. If perfumers always gave the consumer exactly what they expected, she adds, they would be robbing scents of all of their excitement. Innovation would come to a standstill, and the fragrance industry's differentiation problems would only exacerbate. "It's up to us, not to set up the rules, but to create new ones."

Victoria's Secret Heavenly Kiss*, developed by Firmenich perfumer Richard Herpin, incorporates marshmallow and English toffee accords.*

Blanc says there is a long history of left-field innovation in the industry. "Look at the trend when all the ozonic notes came out. Everybody said, 'Who wants to smell like oysters?'" Yet scents like *Escape* led to a boom in perfumes that included materials such as Calone (Pfizer; methylbenzodioxepinone). "Then gourmand notes came and some people said, 'Who wants to smell like cotton candy?'" Blanc adds. "Now look at the trend. You just have to do it first."

Blanc says that new tools allow perfumers to create "360-degree" food impressions in fragrances. These impart odor, taste and texture. "You can have everything," she adds. "What's more beautiful: just a simple jasmine or jasmine with a red currant?" Of course, Shamil says, just using red bean in a scent is not enough. "It's also execution—you have to do a beautiful scent."

Marshmallow to Rhubarb: Flavorist-Perfumer Engineered Fragrances

Firmenich had its first Smell the Taste fragrance win with Victoria's Secret *Heavenly Kiss*, developed by perfumer Richard Herpin, which incorporates marshmallow and English toffee accords. The company's perfumers have more wins—both in fine fragrance and air care—under their belts using Smell the Taste-powered notes, but they remain off the record as of press time.

During the discussion, Shamil hands out blotters of a new fragrance that has not yet launched on the market. This, too, incorporates a marshmallow scent. "The whole creaminess in the back is because of the marshmallow," says Blanc. Shamil adds, "If you wore this, no one would think you're wearing food. It reminds you of a note that you have remembered from childhood … so it has a lot of meaning." Blanc continues, "If you use a marshmallow note and add it to wood, for example, you're going to give a new texture to the wood. You can play with the contrast of two elements that are very different in texture—something that's very rough and solid that you [tweak to] have an effect of being more fluid."

Shamil presents another scent, this one using rum and rhubarb notes. "If you use a rum note in a men's fragrance, it's fantastic," says Blanc. "It's a new excitement." The perfumer adds that using sophisticated food notes can boost non-literal interpretations in perfumery. "When you want to recreate something, don't just use elements everybody tells you to. Recreate with your feeling. If tomorrow I smell a rose and I think the rose smells like raspberry, I will use raspberry, not raw materials like everybody would typically use. This is how you can bring a new signature to the fragrance. You make the rose more alive because you give more wetness and texture. There is nothing more alive than a flavor." Shamil adds that, "The brain gets very bored with anything that's constant. With flavor, you're adding a new dimension."

Blanc points out that using these tools as a subliminal effect in fragrance "is a part of the game of seduction that flavorists can bring." Consumers may enjoy the scent due to an emotional recall triggered in the limbic brain, but because of the subtlety of the application they may well not be aware of the mechanism. "There is something pure about it," says Blanc. "Innocence."

Using this trigger of "the known," perfumers are able to push olfactive boundaries without alienating the consumer. "I can bring something very abstract to the known, a flavor. It can be balanced."

This phenomenon of the "known + unknown" is familiar to flavorists. Shamil cites the example of kiwi flavors when first introduced to the US market. At the time, kiwi flavors were often mixed with strawberry to provide familiarity. Over time, kiwi achieved widespread familiarity in the region. Green tea is another flavor type that was paired with familiar fruits—peach, apple and mango—when introduced to the United States. In fragrances, exotic flowers and woods can gain broader acceptance in unfamiliar markets via the application of familiar food notes.

As Shamil passes out blotters of a Pink Lady apple scent, Blanc says, "If you want to create a summer fragrance and you want something fresh and to feel the water, then use something like this." The tactile scent, based on the Australian varietal (a cross between a green apple and Lady Williams apple), imparts a floral note that comes on top of the apple character. "You can actually smell the juiciness of it," Blanc observes.

Shamil explains that this fragrance is a perfect example of how food notes can be reinterpreted. People associate apple more with health than luxury. But by using a premium apple varietal with a "pink intensity," the scent achieves a note that combines floral, champagne and apple aspects. "We know people associate champagne with luxury," Shamil concludes. "So this is a way of recreating the apple category for perfumes by just looking at different types of apple flavors."

Finally, Shamil hands out blotters of a recently completed champagne accord developed by a flavorist in conjunction with master perfumer Harry Fremont. The sample imparts an effervescent, bubbly and slightly yeasty character. Blanc notes that, by collaborating with flavorists, perfumers will be able to put champagne bubbles in fragrances: "It's not just about odor today—the way the fragrance vibrates and evolves is very important."

Reporting by Jeb Gleason-Allured, Editor.