

# ARTFORUM

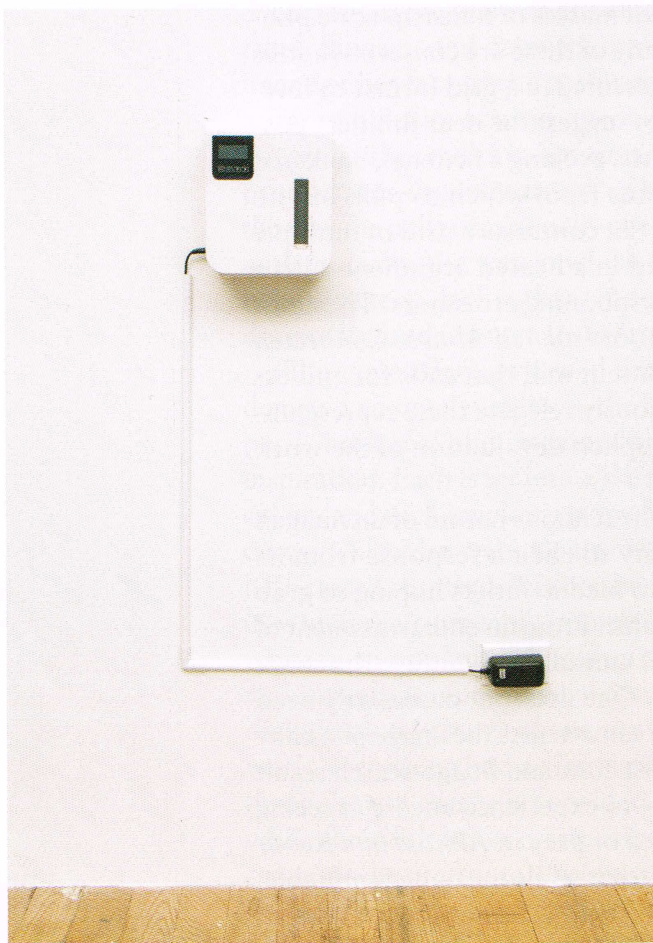
## Sean Raspet

BRIDGET DONAHUE

While researching Soviet Constructivism for her book *The Artist as Producer* (2005), Maria Gough uncovered one of history's great ironies: After the Russian Revolution, the avant-garde agreed on the common goal of integrating art with mass production. The artist who came closest to succeeding, Karl Ioganson, is now the least well known of his peers. Ioganson so dedicated himself to improving factory-floor efficiency that his records were not housed alongside those of Aleksandr Rodchenko or Lyubov Popova but were instead located in the Soviet Union's archives of industry and labor.

I sometimes wonder whether the artist Sean Raspet might be staging a similar disappearing act. While studying for his MFA at University of California, Los Angeles, Raspet began to research the science and business of artificial scents. This interest led him to apply for a job as a "flavorist" at Soylent, the notorious Silicon Valley start-up known for nutrient-rich beverages marketed as an alternative to the waste and inefficiency of preparing daily meals. More recently, Raspet cofounded the company non/food, which sells ecologically sustainable snacks made from microalgae. At present, non/food seems to inhabit a categorical gray zone between Conceptual art project and "disruptor" business model, but Raspet could very well be one venture-capital investment away from appearing more frequently in the columns of *Fast Company* than in the reviews section of *Artforum*.

For now, however, Raspet still exhibits. "Receptor-Binding Variations" featured ten electronic dispensers of different scents designed by Raspet to activate specific olfactory receptors. The dispensers themselves were white boxes installed around the gallery at a uniform height, in a manner reminiscent of Minimalist wall reliefs. This sculptural allusion could be considered a fashionable art-world default—



Sean Raspet, *OR: 52D1 (1G1)*, 2018, scent molecule formation, diffuser, dimensions variable.

more Calvin Klein than Donald Judd—but when visiting the exhibition I felt the need to consider its full implications. The blank forms of Minimalism were never mere exercises in refinement; they were conceived as a means of heightening the phenomenological awareness of one's own body. It followed, then, that Raspet's dispensers were more than elegantly arranged laboratory equipment; they were prompts to consciously record the scents' minute somatic effects.

For the Minimalists, a phenomenological understanding of the body was the bulwark against spectacle. Yvonne Rainer, for instance, responded to televised coverage of the Vietnam War by proclaiming, "My body remains the enduring reality." My experience of Raspet's aromas, by contrast, was one of feeling compromised, exposed, and, well, *porous*. To get a good whiff, I needed to position my nostrils directly over the dispensers,

bending over as if I were furtively peeking through a keyhole. The longer I spent inhaling, the more probing the encounter became. The English language's vocabulary for smell is so impoverished that sense data inevitably coalesces around similes. Raspet's scents were *like* licorice, *like* latex, or *like* the damp odor of an unheated barn in early spring. Each sniff dredged up memories connected to my own specific tastes, travels, pleasures, and aversions.

But were the experiences I was recalling actually my own, or were they implants, like the artificial memories of *Blade Runner* replicants or *Westworld* hosts? Every scent possessed the faintest undercurrent of plastic. I made a second tour of the dispensers while consulting a binder of "technical specifications" that listed the chemical makeup of each compound. These scents weren't Proustian madeleines, but molecular simulacra, engineered to bypass my critical faculties by entering my brain through mucous membranes. Much as Raspet's expansive interests leave me wondering whether his artistic practice will eventually dissolve into the lifestyle industry, his art pushed me to ask whether my own sense of internal coherence might one day evaporate out into the artificially freshened air.

—Colby Chamberlain



# Art in America

## More of Less

By A.E. Benenson

March 1, 2017

Sean Raspet's involvement in meal-replacement start-ups harks back to Bauhaus ambitions to transform everyday life through art.



Sean Raspet: *Technical Milk* 2015, Soy lent and artificial flavors, in "Pavillon de L'Esprit Nouveau: A 21st Century Show Home," 2015, at the Swiss Institute, New York.

IN SEPTEMBER 2015, artist Sean Raspet presented two flavored prototypes of Soylent, the ruthlessly efficient meal-replacement drink, in "Pavillon de L'Esprit Nouveau: A 21st Century Show Home" at the Swiss Institute, New York. Conceived as a response to Le Corbusier's 1925 vision for a mechanized, industrially produced home, the exhibition brought together art and design objects that evoked a house of the near future realized through elaborate manufacturing processes—3D printing, laser cutting, and so on—that use prodigious computing power. Having explored artificial scents and flavors in his art for the previous two years, Raspet had recently begun working as a flavor engineer for Rosa Labs, the Los Angeles start-up that makes Soylent. For the exhibition, he

filled two commercial drink dispensers with *Technical Milk* and *Technical Food* (both 2015): Soylent that he had spiked with molecules common to a broad range of foodstuffs. The resulting flavors were aggressively chemical, an implacable parade of Latex, burnt plastic, damp earth, and smoke.

When the exhibition opened, there was something like an unintentional parallel program under way in Los Angeles. Rob Rhinehart, the inventor of Soylent, was powering his residence exclusively with the energy stored in a single lead-acid battery. On his personal blog, he railed against the inefficiency of the power grid and bid farewell to alternating current. He stopped using his apartment's heating and air-conditioning systems, along with almost all appliances, including the washer and dryer, television, refrigerator, and oven. Gone, too, were all his dishes and utensils; almost everything in his kitchen had been replaced with a supply of Soylent, which he drank twice a day.

Show homes presenting everyday life of the future, like the one approximated by the Swiss Institute's exhibition, almost always have stark interiors, because they advertise technology's great promise of doing more with less. But Rhinehart's lifestyle experiment bespoke an even slimmer survivalism. He was using decades-old technology to make do with far less. He looked more like Hollywood's idea of a stranded astronaut than a Jetson. A battery, some wires, a computer, and books: the barely-there energy footprint of his apartment was a reproach to the faux-emptiness of the show home that hides a maximal electricity drain. Soylent, too, was a referendum on wastefulness—an engineer's critique of the profligacy of getting fed. Rhinehart designed Soylent to be the stingiest food ever—the least expensive, the least time-consuming, the least ecologically impactful—while nevertheless providing complete nutrition. Through its various iterations over the last three years, Soylent production has been guided by what food scholar Michael Pollan derisively calls "nutritionism": the belief that science can distill all the benefits of whole foods into a relatively small set of simple synthetic compounds.

As much as Soylent is about complete nutrition, it's also about a complete respite from the customary social obligations of going to markets, cooking, and sharing meals. Many of the drink's early adopters were tech workers drawn to this misanthropic impatience with culinary rituals and unnecessary ornament, signaled by the product's milquetoast appearance: a hospital-beige fluid sealed in white containers. Like so many of the recognizable metonyms for Silicon Valley



"disruption"—a tightly drawn hoody, noise-canceling headphones—Soylent's aesthetic conveys a weird mix of self-righteousness and diffidence.

WHILE PURSUING an MFA at the University of California, Los Angeles, Raspet became interested in the vocabulary of synthetic fragrances and flavors (the two are often manufactured together, because roughly 80 percent of what we perceive as taste is actually scent). He enrolled in a chemistry course at UCLA, but for the most part he learned about flavor engineering through independent study. For Raspet, taste and smell—not sight—became a logical end point for modernism's project of medium specificity. In notes on his 2014 scent *Nc1c(C(OC)=O)cccc1*, Raspet argues that if all materials are defined by their molecular structure, then taste and smell are our most finely tuned senses for apprehending their forms.<sup>1</sup> Sugar, salt, and ground glass are nearly identical until you put them in your mouth.

Still, he writes, synthetic flavors are used almost exclusively as a medium for producing simple likeness: pumping yellow gelatin full of isoamyl acetate, one of the main flavor compounds found in bananas, makes it taste like the fruit. Raspet argues that explicitly linking the smell or taste of molecules to their usual host substance blocks our perception of them as specific materials in their own right. A given flavor molecule can be attached to any number of different substances; thus "it would be more accurate to say that bananas smell primarily of isoamyl acetate than the other way around."

Modernism had come to a similar conclusion, reevaluating mediums used for mimetic representation as materials that could express their own intrinsic properties instead. This led to a self-reflexively formal (and sometimes spiritualized) abstraction, the American version of which entailed two kinds of material autonomy: not only from mimetic representation but also from the world of mass culture. But Raspet's works have more in common with certain functionally oriented episodes of modernism, like Russian Productivism and Germany's Bauhaus, which tested a "truth to materials" credo *within* the mass-produced world.

In 2014 Raspet began filling plastic containers with what he calls "abstract scents"—fragrant synthetic chemicals grouped, in liquid form, according to their chemical structure rather than their smell.<sup>2</sup> His *Aldehyde Grid Variable Program* (2014), for example, is a mixture of five molecules, each with one more carbon atom than the last. The aldehyde molecules are used to flavor fruit drinks and

candies and to add fragrance to detergents. Products scented with them are marketed as having a range of notes, from oily and fruity to soapy and amber. The various resemblances of Raspet's *Aldehyde Grid Variable Program* to known smells are only side effects of the quasi-sculptural construction of its sloped molecular structure. Raspet sought to transfer the esoteric drama of twentieth-century art—the overcoming of representational content by abstract form—to a commercial vehicle that would carry it into everyday experience.

IN MAY 2014, just weeks after Raspet exhibited *Aldehyde Grid Variable Program* at New Galerie in Paris, Rosa Labs launched the sale of Soylent. Rhinehart had independently arrived at a conclusion nearly identical to Raspet's. The entrepreneur's extreme "nutritionism" had the same modernist kernel as Raspet's molecular materialism: both men believed that science and technology could reduce a substance to the material vocabulary of its functions, as a basis for new formulations.

Up until that point, Rhinehart had eschewed flavor in accordance with the drink's pure functionalism. Raspet's abstract flavors, however, were uniquely suited to Rhinehart's own principles of nutritionist abstraction. In other words, food substitution was the ideal platform for Raspet to implement his theory of molecular materialism on a mass scale.

Raspet applied for a job as a flavor engineer at Rosa Labs, and in the summer of 2015 he began to develop his first prototypes, including *Technical Food* and *Technical Milk*. Though the only public presentations of these two flavors were in the context of art exhibitions (at Monnaie de Paris in addition to the Swiss Institute), Raspet conceived his flavors simultaneously as artworks and as commercial prototypes for products to be mass produced by the company. Raspet's first Soylent flavor to reach the market through Rosa Labs was Nectar, launched in December 2016.<sup>3</sup> Nectar has a bright, lemony taste that some say reminds them of the milk left behind in a bowl of Froot Loops. It's made from a synthetic analogue of the Nasonov pheromone, a scent used by honeybees to mark their hive entrance, as well as flowers that contain nectar. Specific to no particular source, the Nasonov pheromone is a generalization, a way of chemically marking something as nourishment. The pheromone is not mimetic, in the manner of artificial scents designed to evoke natural analogues, but deictic; the effect of the arbitrary, temporary pointer depends on its context. By applying a synthesized version of the fragrance to Soylent, Raspet repeats the honeybee's marking act, recursively flavoring Nectar with a composition that refers not to any specific material but rather to the process of engineering a flavor.



The integration of Raspet's reflexive abstraction into Rhinehart's ecology reveals a resemblance between the two. Raspet's abstraction shares its basic formal structure with the conservationist tenets of environmentalism. Both are principally concerned with the question of how to deploy a resource so that it may sustain, rather than erase, itself. Seen in this light, recursion looks like a kind of recycling. Medium specificity becomes a flavor of sustainability.

Raspet's abstraction also found a new extension within Rhinehart's ethics. The modernist paradigm of bending a material back upon itself, formerly so aloof and self-absorbed, thereby entered the world of everyday consumption. Raspet's work at Rosa Labs recalls the ideas that came out of the later Bauhaus. Bauhaus visionaries such as Hannes Meyer and László Moholy-Nagy developed a strictly functionalist approach in which they sought to unite art with technology. To some this was a cool, joyless turn that used art to justify the rationalist withering of life. In an uncanny prefiguration of Raspet's version of this problem at Rosa Labs, Walter Gropius, the school's founding director, recalled an argument between Meyer and the architect Mies van der Rohe in the late 1920s:

"[Meyer's] philosophy culminates in the assertion 'life is oxygen plus sugar plus starch plus protein' to which Mies promptly retorted 'try stirring all that together—it stinks.'"<sup>4</sup> But Meyer and his colleagues believed it was a moral obligation for artists to use their skills to address the urgent problems of the world through industrial collaborations. "Can I assume the privilege of art for myself," Moholy-Nagy wrote in his diary in 1919, "when every person is needed to solve the problems of basic survival? During the last hundred years art and reality had nothing in common."<sup>5</sup>

AT THE 2016 edition of Frieze New York, the art fair on Randall's Island, Raspet converted the booth of his Berlin gallery, Société, into a Rosa Labs pop-up. From the gleaming refrigerators that lined the booth, Raspet and several of his Rosa Labs coworkers, clothed in custom uniforms made by artist Nhu Duong, doled out free samples of Soylent, as well as pouched prototypes of an algae-based nutritional paste, whose flavor, Pentagon 2.4, Raspet had recently designed.

By bringing the Rosa Labs products to the fair, Raspet emphatically contrasted Rhinehart's environmentalist outlook with the consumption habits of the art world. Echoing Moholy-Nagy, Raspet wrote in his notes for the booth that "if the activities of art were redefined to primarily focus on the problems of food, medicine, and transportation systems in an aesthetic capacity their products could be experienced continuously while at the same time their resource footprint would be considerably diminished."<sup>6</sup> For now, however, Raspet sees art largely as a waste of resources, not

only because most of its objects are singly made with ecologically intensive materials—petroleum-based products, metal, wood, and so on—but also because artists expend large amounts of unrecoverable energy on these efforts. He goes on to say that his Rosa Labs booth showcased an art redefined to work, less wastefully, inside the bounds of industry, and that it recycled artists' "metabolic" investment by providing energy rather than just exhibiting the traces of its expenditure. In the context of the fair, this meant that Raspet's booth was the only one directed at art workers—not just their patrons—as consumers. The pop-up was a Rhinehart-esque experiment in the austere rationalization of the art world's ecosystem, trimming waste from creation and distribution while also looping the two.

But does a drink that reduces the economic and social friction of artists' lives just normalize their precarity? Do we really need *more* flexibility? At the least we can say this much: by inserting the Rosa Labs promotional machine into art's paradigmatic space of consumption, Raspet reversed the historical direction of this kind of solutionism. The Bauhaus and its various heirs—the Artist Placement Group in London, the Art + Technology program at the Los Angeles County Museum of Art—all assumed that artists could improve industry, bending it to good works through their aesthetic sensitivity. Raspet, by contrast, imagines an ethically sensitive industry bringing a prodigal art world to heel.

SEVERAL MONTHS after Frieze, Raspet left Rosa Labs to start his own synthetic nutrition company with writer and researcher Lucy Chinen. Working under the brand non/food, Raspet and Chinen began to design artificially flavored, algae-based food products; their first, a synthetic chocolate analogue called non/coco, launches this spring.<sup>7</sup> It hasn't yet proved scalable, but algae inspires an alchemical lust in the sustainability community because it can thrive with almost no nutrients and little water while vacuuming up carbon dioxide through photosynthesis. Given that various strains of algae are simultaneously being developed as alternative food sources and biofuels, this seems less like futurism than like a weird atavism where our baroque world of consumption devolves back into a single dimension—one source of fuel for both bodies and machines. Raspet and Chinen have chosen to launch the company with a synthetic version of chocolate, whose virtually universal appeal makes it a flavor applicable to nearly anything (Crest sells chocolate-flavored toothpaste; a company called Philosophy makes chocolate-scented bath products). The breadth of its use parallels that of algae. In its appeal to generic aesthetic and ecologic applications, non/coco, like Nectar and the Frieze



booth, signals a move beyond the molecular materialism of Raspet's previous projects into another mode of nonobjective reflexivity governed by a material's arbitrary uses.<sup>8</sup>

At the same time, this movement deeper and deeper into ethically minded consumption suggests a postscript to the narrative of the late twentieth-century relationship between art and industry. Capitalism absorbed the forms and ambitions of the artist's creative life into flexible post-Fordist labor, while art borrowed the tools of capitalism to professionalize its actors and vastly expand its market. Raspet's work indicates how profoundly this mutual influence has affected the social imagination of its subjects. The founder class of Silicon Valley believes that it has taken up the mantle of the avant-garde under the blithe optimism of "disruption." Meanwhile, artists have increasingly adopted a deep cynicism about changing the world, resigning themselves to the narrow economic pragmatism of a financialized world that views their work as an asset class.

The contemporary art world and Silicon Valley may be most compatible in their flaws. Both fields overindulge white men, exalt novelty and youth for their own sake, and thrill to the speculation of investors. This chimera of privilege and acceleration could arguably be the dystopian future of art and technology. But Raspet, in the trajectory of his own practice, suggests a more hopeful alternative. It's hard to say which version is more likely to succeed, but Raspet's is formally much more interesting. By embracing Silicon Valley's faith in ethical consumption (and profit), Raspet envisions a way for artists to recuperate their utopian idealism through—not in spite of—the commodification of their work.

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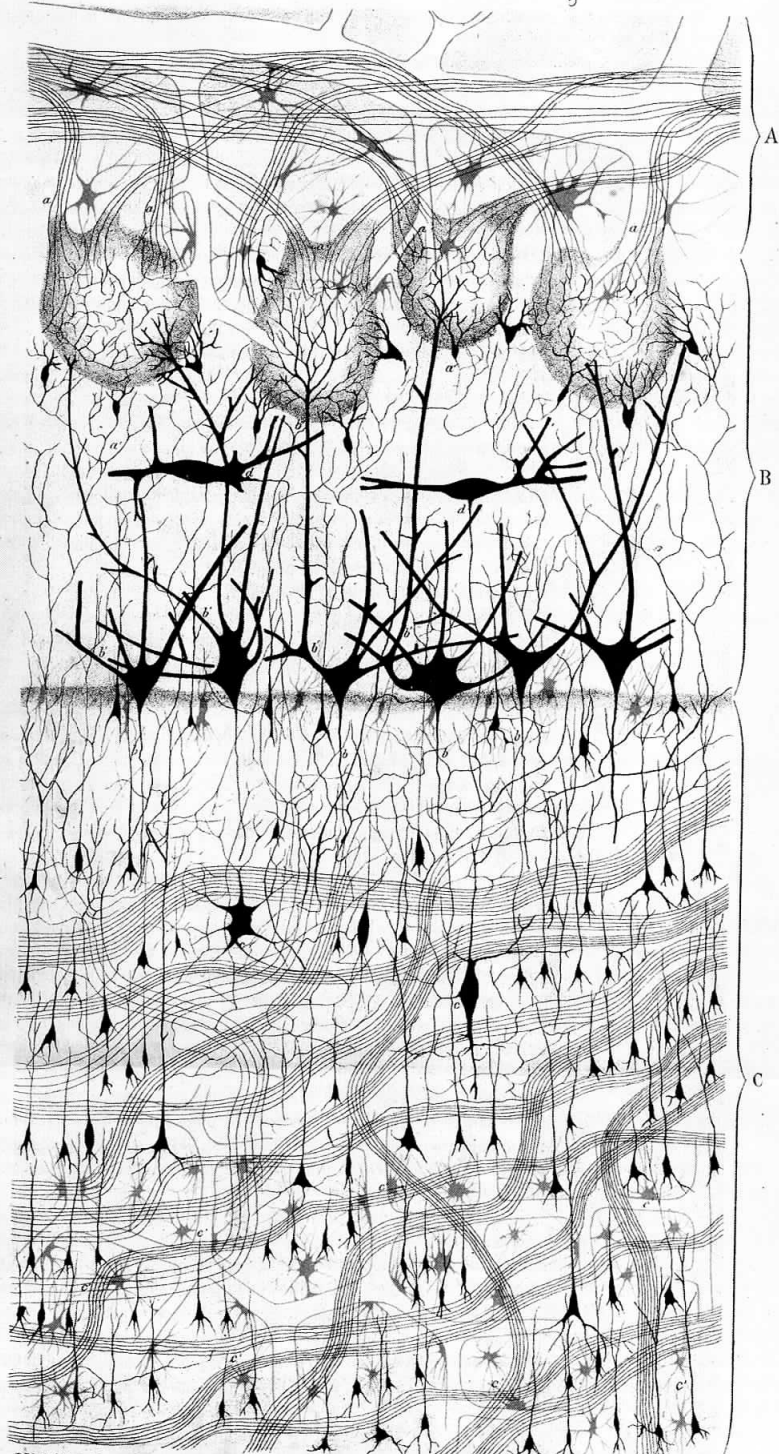
# FutureAnterior

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<b>Editors' Introduction: Smell and Preservation</b> <i>Adam Jasper and Jorge Otero-Pailos</i>	iii
<b>Interview: Headspace</b> <i>Roman Kaiser</i>	1
<b>Interview: Material and Performance</b> <i>Jacques Herzog</i>	11
<b>Preserving the Unpleasant: Sources, Methods, and Conjectures for Odors at Historic Sites</b> <i>Melanie A. Kiechle</i>	23
<b>Presenting Volatile Heritage: Two Case Studies on Olfactory Reconstructions in the Museum</b> <i>Caro Verbeek</i>	33
<b>Pattern Recognition. A Background for Carsten Höller's <i>Smelling Dots (Portrait of Cedric Price)</i>, 2016</b> <i>Stefanie Hessler and Rebecca Uchill</i>	45
<b>The Sacro Monte at Varalla and the Choreography of an Olfactory Landscape</b> <i>David Karmon</i>	57
<b>Synthetic Air</b> <i>Wulf Böer</i>	77
<b>Breathing a Moldy Air: Olfactory Experience, Aesthetics, and Ethics in the Writings of Ruskin and Riegl</b> <i>Beata Labuhn</i>	103
<b><i>Neue Sinnlichkeit</i>: Postcritical Issues Regarding an Architecture of Sensuousness</b> <i>Erik Wegerhoff</i>	119
<b>Toward an Olfactory Language System</b> <i>Sean Raspet</i>	139
<b>Artist Intervention: <i>Olfactive Gulf and Atmospheric Hegemony</i></b> <i>Raja'a Khalid and Ahmad Makia</i>	155





D<sup>re</sup> C. Golgi disegno.

Torino Lit. Giordana e Saluscolla.

## Toward an Olfactory Language System

It is striking that, as a field that has historically been concerned with the material specificity of representation, art has primarily addressed the visual subsection of the human sensorium. When it comes to discerning the underlying material nature of entities in the world—our own human bodies included—vision has some severe limitations: it is limited to entities of a certain (visible) size, and furthermore, is only able to access the surface layer of a given entity.

In contrast, an entity's specific material signature—that is, its chemical structure(s)—is revealed to the human olfactory sense (and, to a lesser extent, the related chemical sense of taste) on a continual basis. An entity's internal make up, and the dynamic processes that define its existence, can be ascertained in a few seconds through airborne chemical trace compounds within the shared airspace of the "observer." Metabolic processes and their byproducts, surface chemical reactions, residues of manufacturing processes, and compounds emitted by organisms for the specific purpose of inter- or intraspecies communication can all be gleaned through a cursory sensory registration that is automatically integrated into our own primary metabolic process—that of respiration.

Olfaction, as it discerns chemical structures, is capable not only of informing us of the nature of matter as it exists but also as it *could* possibly exist. A molecule that has never existed before and has been newly synthesized will instantaneously have a distinct smell (provided that it conforms to certain parameters of size and electric charge) that is specific to it and to no other molecule. The sense of smell has evolved precisely to distinguish molecular structures and mixtures, and it does not require that these structures existed prior to its evolution. The history of chemistry is filled with accidents in which new compounds were produced and were noted first by an unexpected smell permeating the laboratory only later to be verified through chemical analysis. The compound hydroxycitronellal, for example, was discovered accidentally around 1905. It does not exist in nature and yet was found to have a more penetrating lily-of-the-valley note than even the extract of the flower itself (which is very difficult to obtain due to the small amount of oil present in the flower).<sup>1</sup>

More than 400,000 specific chemical compounds are estimated to elicit an odor response in the human nose.<sup>2</sup> But more



interestingly, no two known odorant molecules have ever been found to have the same exact odor characteristics<sup>3</sup>—that is to say, each of these 400,000 molecules can be uniquely identified by comparison through smell. All of this points to a need to reassess our cultural estimation of the sense that forms the basis of our material interface with the world: the arena in which our own materiality interacts with and, in that process, registers the materiality of other entities.

The possible reasons for the elision of the olfactory from cultural discourse are numerous. To speculate on just a few: there is, first of all, Western culture's historical demotion of olfaction within a hierarchy of the senses that places vision at the summit. Every reader is surely familiar with typical binary associations that hold the sense of vision as representative of reason, intellect, self-evidence, evolutionary progression, and even cleanliness, while olfaction is considered primitive, emotional, vestigial, unspoken or unspeakable, and unclean.

Numerous quasi-scientific or pseudo-scientific ideas that circulate in culture tend to bolster these biases. There is a prevalent belief that humans are simply not "good at" smelling or discerning through smell. That proto-human's sense of smell devolved as their sense of vision evolved and as they began to walk upright, thus removing their nose from regular proximity with the odor-rich ground. However, this conventional wisdom has been largely overstated. While it is true that humans have fewer olfactory receptors—in both type and number—than some of the most studied animals, rats and mice, these species themselves have among the most developed olfactory senses of any known animal. The comparison is rather unfair: a recent study that compared the olfactory sense of animals based on the number of functional olfactory receptor genes that each species possessed "ranked" humans as having the thirteenth best sense of smell of any studied animal, while mice were placed at sixth and rats second.<sup>4</sup>

The evolutionary narrative that proto-humans' smell devolved as they began to walk upright likewise fails to hold up to scrutiny: our closest primate relatives that never left the arboreal habitat have a similar number of receptors to humans (less in many cases). It may be true, however, that the sense of smell of primates in general lost some of its functionality as primates gained a third color vision receptor, which presumably took over part of the role of identifying food. Still, the human sense of smell is by all accounts on par with most mammal species, and when considering retronasal olfaction (which is highly developed in humans)<sup>5</sup> and its role in flavor perception, some researchers have in fact found it to be unparalleled.<sup>6</sup>

Furthermore, the amount of brain mass devoted to processing olfactory stimuli in humans is many times larger than that of the entire mouse or rat brain. To use a simplistic analogy, rats and mice have more sensitive olfactory hardware, but humans' olfactory software is several orders of magnitude greater. Neurology shows us that, in general, this extra "processing power" is of great importance in matters of pattern recognition, as will be discussed below.

One specific cause of the lack of cultural and art discourse pertaining to the sense of smell is simply the lack of vocabulary to describe scent phenomena. This lack is especially prevalent in the Western cultures that have historically demoted olfaction within the hierarchy of the senses, and one might speculate that it is this demotion that contributes to the lack of functional vocabulary to describe scent phenomena. There are cultural and scientific ideas that naturalize this state of affairs as scent's inherent ineffability or even "mystery." Many researchers theorize that the olfactory sense is "hardwired" in the brain in a manner that separates its inputs from language and higher processing. However, the situation is far more complex. Gordon M. Shepherd, a researcher on olfaction and neurology, has pointed out that olfaction is unique among the senses in the manner in which incoming sensory data is integrated into the brain's neocortex. Unlike other senses, which are first processed by the thalamus area of the brain before being relayed to the "higher" neocortical centers, incoming olfactory signals primarily connect directly to the neocortex with only a relatively small amount of the signals directed through the thalamus. More importantly, the signals are routed to the prefrontal cortex area of the neocortex, which is associated with the "highest functions" of intellect and consciousness.<sup>7</sup>

This observation runs counter to the prevalent doctrine that the evolution of a larger and more developed prefrontal cortex in humans is related primarily to processing visual information. Olfaction and vision share this area on relatively equal terms. However, Shepherd does point out that this direct route to the prefrontal cortex initially bypasses the language areas of the neocortex. Since incoming olfactory information is processed first in the higher consciousness areas, there is a "delay" before the information can be "sent" to the language centers of the neocortex. This results in a lag time in naming odors, as compared to colors and other visual stimuli, that is both anecdotally observable and a subject of study (although another relevant factor in this delay may be that the range of perceivable odors is exponentially larger than the range of perceivable colors, as will be discussed below).<sup>8</sup>

However, Shepherd's view on the relative lack of linguistic codability of scent is that it is in no way special among the senses. Shepherd makes an apt comparison to the ineffability of other forms of complex and irregular pattern recognition, such as the recognition of faces, music, and indeed art:

The classical illustration is that in a room full of grandmothers, you can readily identify your own grandmother. Yet if you are asked to describe your grandmother's face to someone else, it is very difficult; we lack the vocabulary and an appropriate coordinate system to specify how this pattern recognition is carried out. But we do it unerringly.

For Shepherd, all of these are forms of gestalt pattern recognition that tend to be inaccessible to language and even largely to conscious awareness.

The fact remains that there exists a palpable difficulty in expressing scent phenomena. While Shepherd's observations eloquently summarize the present state of affairs where scent is a form of perception that is partially inaccessible to language, it does not follow that these conditions are immutable. To do so would be to underestimate the plasticity of language, culture, and the brain itself. The cause-and-effect relationship of the brain's "hardwired" structure may be reversible: it could be the de-prioritization and lack of an olfactory vocabulary that tends toward a neural development where olfaction is relatively unintegrated with language centers.

Little research has been done on the influence of cultural and linguistic structures on the expressibility of scent phenomena, but one study in particular is worth noting: In a paper titled "Odors Are Expressible in Language, as Long as You Speak the Right Language," published in the journal *Cognition*, researchers Asifa Majid and Niclas Burenhult catalog the Jahai language spoken in parts of Malaysia and Thailand.<sup>9</sup> They note that this language is representative of other languages in the region and throughout the world that have been described as having a more advanced range of vocabulary for olfactory phenomena.

Majid and Burenhult conducted an odor identification test with an equal number of Jahai speakers and English speakers. Their results showed that the English speakers almost invariably struggled to name the odors (which were all familiar within their culture: cinnamon, turpentine, lemon, smoke, chocolate, rose, paint thinner, banana, pineapple, gasoline, soap, and onion). The English speakers offered inconsistent and lengthy responses with little agreement between participants. The level of agreement between participants and the length of the response were factored as indicators of difficulty, as can be seen



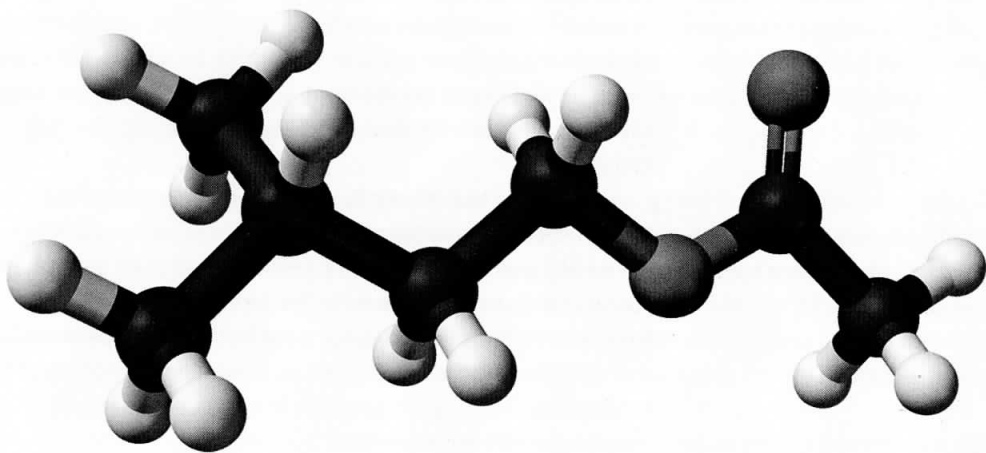
in the following response of an English speaker describing cinnamon: "I don't know how to say that, sweet, yeah; I have tasted that gum like Big Red or something tastes like, what do I want to say? I can't get the word. Jesus it's like that gum smell like something like Big Red. Can I say that? Ok. Big Red. Big Red gum."<sup>10</sup>

In contrast to the lengthy and varied responses of the English speakers, the Jahai speakers quickly and easily named the odors, and the participants' responses showed a very high level of consistent agreement in the terminology used. But more interestingly the language used by the Jahai speakers was classified by the researchers as almost entirely *abstract* terminology. The English speakers instead used primarily "source-based" or "referential" terminology.

In English it is common for visual phenomena such as color to be verbalized with abstract language: the color blue, for example, is an abstract term since it is a quality that can be applied to numerous entities. If vision was limited to only nonabstract, referential terminology, a blue flower could only be described as "sky-like" or "watery-colored." This is precisely the manner in which English speakers respond when asked to describe a scent: by naming an object that smells *like* the scent at hand, for example, "like peanut butter" or "like fabric softener." Even the slightly more abstract terms "smoky" or "floral" still reference external, fixed objects separate from the scent at hand. While these terms are limited to a one-to-one relationship to their referent, abstract terminology allows for both greater flexibility and precision, especially in describing phenomena that have a large amount of variability.

This lack of abstract terminology influences the vocabulary and a discourse that is specific to olfaction. The underlying basis of a scent, after all, is not fixed objects but rather molecules.<sup>11</sup> A typical scent may consist of more than one hundred specific molecular compounds in various proportions that together produce a unified impression through their simultaneous activity on the olfactory bulb. Each of the molecular compounds in a given scent, furthermore, may be found in a multitude of other entities.

The compound isoamyl acetate (Figure 2), for example, is characteristic of banana scent and is commonly used in artificial flavors to convey the idea of "banana." But while this compound is found in large proportions in bananas, it is also found in significant concentrations in pears, apples, strawberries, beer, wine, butter, yeast, chamomile, and cocoa, to name a few—not to mention its significant use in industry as a solvent and precursor to various plastic products. Hence it would be more accurate to say that bananas smell like isoamyl acetate (as do pears, apples, strawberries, et cetera) than the reverse.



2. Diagram showing the isoamyl acetate chemical structure.

Even in the highly specialized world of the flavor and fragrance industry, the terminology skews almost exclusively toward the referential. In an emblematic and still often cited industry compendium *The Atlas of Odor Character Profiles*, compiled by Andrew Dravnieks and produced by the American Society for Testing and Materials, a multitude of odor molecules as well as some essential oils, extracts, and commercial perfumes are subjected to a panel where trained participants classify them based on the extent to which they correspond to 146 descriptive terms (Figure 3).<sup>12</sup> The participants' classifications are then averaged together to arrive at a quantitative measure of the extent to which a scent is characterized by each given term. Of the 146 descriptive terms only 12 could be described as abstract or nonreferential (including those that refer to a specific class of chemical compound). Two of these—"warm" and "cooling"—actually refer to activity of odorants on temperature sensitive (trigeminal) nerves in the nose, not on olfactory receptors as such. "Sour" similarly describes a sensation on taste buds, and it is used only by analogy in the olfactory sense.

Many current scientific studies that aim to delineate and classify the full range of human odor perception build on these and other similarly referential or source-based vocabulary systems.<sup>13</sup> Interestingly, the researchers Yaara Yeshurun and Noam Sobel attempt to do away with language altogether in the classification of olfactory phenomena.<sup>14</sup> For Yeshurun and Sobel, all olfactory sensation can, and indeed should, be classified only along a one-dimensional "hedonistic" axis; that is, whether a subject finds the odor pleasant or disagreeable. They argue that this is the primary function of olfaction in nature: to distinguish between edible and noxious substances. They furthermore use the widespread difficulty that subjects have in naming and classifying odors to bolster the argument that language is inherently incompatible with olfactory perceptual space.

1 FRUITY, CITRUS	51 RAISINS	101 DISINFECTANT, CARBOLIC
2 LEMON	52 MOLASSES	102 MEDICINAL
3 GRAPEFRUIT	53 COCONUT	103 CHEMICAL
4 ORANGE	54 ANISE (LICORICE)	104 BITTER
5 FRUITY, OTHER THAN CITRUS	55 ALCOHOLIC	105 SHARP, PUNGENT, ACID
6 PINEAPPLE	56 ETHERISH, ANAESTHETIC	106 SOUR, VINEGAR
7 GRAPE JUICE	57 CLEANING FLUID	107 SAUERKRAUT
8 STRAWBERRY	58 GASOLINE, SOLVENT	108 AMMONIA
9 APPLE (FRUIT)	59 TURPENTINE (PINE OIL)	109 URINE
10 PEAR	60 GERANIUM LEAVES	110 CAT URINE
11 CANTALOUPE, HONEYDEW MELON	61 CELERY	111 FISHY
12 PEACH (FRUIT)	62 FRESH GREEN VEGETABLES	112 KIPPERY (SMOKED FISH)
13 BANANA	63 CRUSHED WEEDS	113 SEMINAL, SPERM-LIKE
14 FLORAL	64 CRUSHED GRASS	114 NEW RUBBER
15 ROSE	65 HERBAL, GREEN, CUT GRASS	115 SOOTY
16 VIOLETS	66 RAW CUCUMBER	116 BURNT CANDLE
17 LAVENDER	67 HAY	117 KEROSENE
18 COLOGNE	68 GRAINY (AS GRAIN)	118 OILY, FATTY
19 MUSK	69 YEASTY	119 BUTTERY, FRESH BUTTER
20 PERFUMERY	70 BAKERY (FRESH BREAD)	120 PAINT
21 FRAGRANT	71 SOUR MILK	121 VARNISH
22 AROMATIC	72 FERMENTED (ROTTEN) FRUIT	122 POPCORN
23 HONEY	73 BEERY	123 FRIED CHICKEN
24 CHERRY (BERRY)	74 SOAPY	124 MEATY (COOKED, GOOD)
25 ALMOND	75 LEATHER	125 SOUPY
26 NAIL POLISH REMOVER	76 CARDBOARD	126 COOKED VEGETABLES
27 NUTTY (WALNUT ETC)	77 ROPE	127 RANCID
28 SPICY	78 WET PAPER	128 SWEATY
29 CLOVE	79 WET WOOL, WET DOG	129 CHEESY
30 CINNAMON	80 DIRTY LINEN	130 HOUSEHOLD GAS
31 LAUREL LEAVES	81 STALE	131 SULFIDIC
32 TEA LEAVES	82 MUSTY, EARTHY, MOLDY	132 GARLIC, ONION
33 SEASONING (FOR MEAT)	83 RAW POTATO	133 METALLIC
34 BLACK PEPPER	84 MOUSE	134 BLOOD, RAW MEAT
35 GREEN PEPPER	85 MUSHROOM	135 ANIMAL
36 DILL	86 PEANUT BUTTER	136 SEWER
37 CARAWAY	87 BEANY	137 PUTRID, FOUL, DECAYED
38 OAK WOOD	88 EGGY (FRESH EGGS)	138 FECAL (LIKE MANURE)
39 WOODY, RESINOUS	89 BARK, BIRCH BARK	139 CADAVEROUS (DEAD ANIMAL)
40 CEDARWOOD	90 CORK	140 SICKENING
41 MOTHBALLS	91 BURNT, SMOKY	141 DRY, POWDERY
42 MINTY	92 FRESH TOBACCO SMOKE	142 CHALKY
43 CAMPHOR	93 INCENSE	143 LIGHT
44 EUCALYPTUS	94 COFFEE	144 HEAVY
45 CHOCOLATE	95 STALE TOBACCO SMOKE	145 COOL, COOLING
46 VANILLA	96 BURNT PAPER	146 WARM
47 SWEET	97 BURNT MILK	
48 MAPLE SYRUP	98 BURNT RUBBER	
49 CARAMEL	99 TAR	
50 MALTY	100 CREOSOTE	

3. The 146 descriptors from the *Atlas of Odor Character Profiles*, compiled by Andrew Dravnieks and produced by the American Society for Testing and Materials.

While these and other studies are valuable in their engagement with the phenomenology and neurology of olfaction, they accept a common limit in relying on (or in the case of Yeshurun and Sobel, dismissing) a language system that is aligned with fixed objects and not the abstract qualities of odor. The question becomes, Can a new approach to terminology be generated? Historical developments in the field of art and literature could help in the task of compiling an olfactory language system that would have broader cultural and scientific applications. In relation to art, we can see, for example, that contemporary Western culture's understanding of olfaction is still held within a "mimetic" or "referential" paradigm (i.e.,



a “premodern” paradigm). While a century ago art discourse had already developed the capacity to consider color, line, and brush stroke, and so on, as autonomous entities or units of expression in their own right—both abstract and at the same time thoroughly concrete in their specificity—the cultural discourse concerning olfactory phenomena (with art discourse being by no means an exception) remains in a prior mimetic paradigm, even while the diversity of olfactory experience calls for a much greater degree of abstraction in its codification.

Imagine, for a moment, that a plausible solution to the problem of producing a terminology on the level of the olfactory receptor (OR) would be to map the full range of receptors that respond to odorants (leaving aside the quantitative dimensions of the problem).

It should be noted that a given olfactory receptor is sensitive to a range of molecules that contain specific substructures. Conversely a single odorant may activate numerous ORs, each to a greater or lesser degree. Individual ORs could best be described as molecular “feature detectors” rather than “molecule detectors”<sup>15</sup> Rarely, if ever, does a single molecule exclusively activate a single receptor type. Hence testing and verifying that a particular odorant is representative of the subjective quality associated with a particular receptor’s activation would have complications. Another considerable obstacle is the fact that—to make a comparison with color vision—while humans have three different types of color receptors in the retina (red, green, and blue sensitive) that account for the entire range of perceivable colors (which has been estimated at approximately one million), humans have approximately four hundred different types of functional olfactory receptors. The space of olfactory perception is thus orders of magnitude larger than that of vision (with each additional receptor multiplying the size of the overall space). It is still a subject of controversy and speculation, but some models have calculated that humans could perceive more than one trillion distinct combinations of odorant molecules.<sup>16</sup>

But this again brings us back to the initial problem of the lack of a functional language for olfaction. As an alternative method for generating an olfactory vocabulary system, I propose an iterative process where in the first phase a panel of participants is exposed to a number of odorants and asked to supply *non-source-based*—i.e., abstract, nonreferential—terminology to describe the odors. The panel first records their responses privately. In the second phase the panelists smell the odors again and after each one a discussion ensues where the panel-

ists refer to their notes and discuss the terms that they feel are most applicable, potentially introducing new terms. Following this the panelists write down the terms from the discussion that they feel best exemplify the specific quality of the odorant. The terms that receive the most agreement as to their usefulness or aptness are added to a database of possible terms.

In a third, “verification” phase, an additional panel is convened with new participants. The panelists are asked to describe each odorant with terms from the database that have been linked to it by the previous panel. Additional terms that have been found to have a broad applicability or a high degree of consensus are made available for the new panelists to use. The odorants are defined statistically, based on the available terms as with the *Atlas* method, where the scores of applicability of a term among all the panelists are averaged together to achieve a broad quantitative measure. At the same time, the terms themselves are verified and terms that show a low percentage of utilization can be removed from the database. Importantly, this method conceives of the vocabulary as a system in flux, like language itself, rather than a fixed set of terms.

What sorts of terms are generated by this process? I performed a trial version of phases one and two in an ad hoc, unscientific setting with twenty participants as part of a workshop on olfaction at the Hammer Museum in Los Angeles in 2014. Given a restriction against using source-based terminology, the participants struggled at first. An initial discussion of the concept of nonmimetic or abstract language as well as a “practice” round is generally necessary for participants to engage in the task.

Once the first phase was in session, there was a notable tendency of panelists to use terminology that fell into the following categories: tactile adjectives and verbs; physical properties of objects. When the possibility of using source-based terminology is barred, there is a tendency to revert to loan words from other sensory systems, which can be productive in generating intuitively graspable terminology. More surprisingly, panelists often invoked trajectories of motion, topography, or contours; and locations or trajectories of movement within the body.

Another surprising result of the panel was the high degree of spontaneous agreement upon very abstract terms seemingly unrelated to the scent at hand (from a source-based point of view). This agreement already occurred to an extent in the first stage where participants wrote down their impressions privately. In the second phase where panelists discussed their terminology together and then each panelist (again privately) recorded the terms they found most useful

from the conversation, there was a high level of agreement. The possibility of panelists influencing each other, which is a necessary part of the dynamic of the process, also necessitates the third "validation" phase with a new set of panelists. However, the initial trial version of the method suggests a level of agreement above what could be accounted for by social influence alone. Likewise, this agreement did not occur equally with every odorant, but was intermittent, indicating a correspondence between the odorants and the terminology independent of the social dynamics of the panel.

For the odorant abhexone, which has an odor that has been described in literature as sweet, fruity, maple, caramel,<sup>17</sup> eleven of fourteen of the participants described the sensory quality as a variation of "round," "basin," "U-shaped," or "bowl" in the second stage, occasionally drawing a schematic "U" shape. Many participants also used terms related to the concept "heavy." For another scent, which consisted of a mixture of aliphatic aldehydes (octanal, nonanal, decanal, undecanal, and dodecanal) all of the participants referred to it as either "sparkling," "wavy," or "effervescent" in the second stage of naming.

Another scent consisted of a mixture of esters (butyl formate, propyl acetate, ethyl propionate, and methyl butyrate) each of which have the same molecular weight but with a variation in where the ester group is located within a carbon chain, eight of seventeen of the panelists described the odor with terms related to "sliding," "lateral," "shifting," or "gliding"; additionally there was a significant agreement (five of seventeen participants) on the terms such as "multilayered," "multiplying," and "multidimensional" (curiously, another popular term for this odorant was "deceitful"). It could very well be a coincidence, but it is still interesting to note that the relationship of the functional groups (the ester's oxygen component) of the four molecules of the mixture is one of laterality or a sideways movement along the carbon chain "backbone" of the molecule.

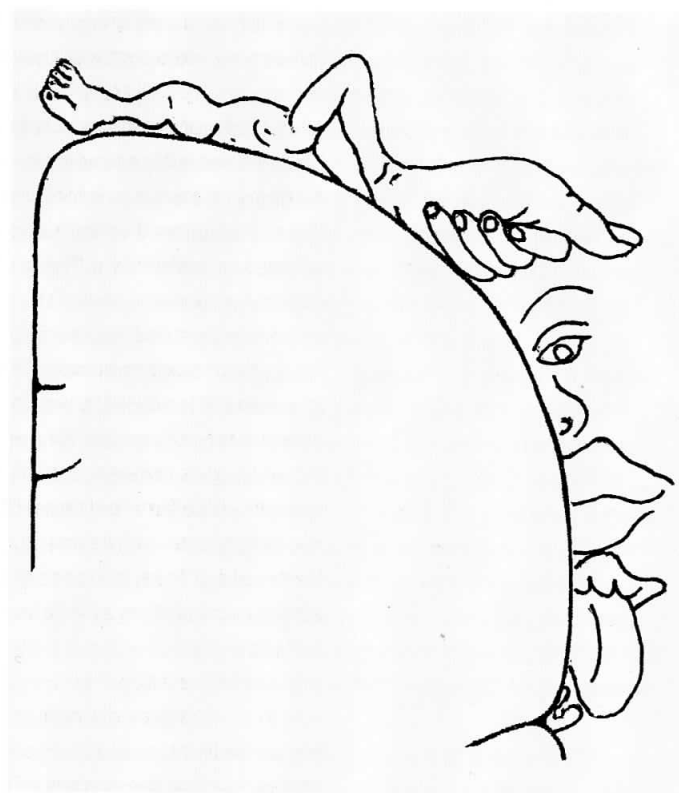
The participants were not informed of the identities of any of the nine odorants used during the panel. As mentioned, other odorants showed less agreement among the participants, and in a substantial proportion of odorants a subsection of the panelists reverted to source-based terminology in the questionnaires, even in the second stage. This potentially lowers the level of agreement. However, I would suggest that the surprising levels of spontaneous agreement around certain terms make this method worth further investigation. In general the panelists showed increased agreement and increased use of abstract terminology as the panel progressed, indicating that as the skills of abstract description are practiced by the



panelists and encouraged during the process, these terms tend to become more apt and easier to generate.

As in language in general, a greater degree of precision can be achieved by employing modifiers of different types (for example "dark greenish-blue"). Functioning similarly to adjectives or adverbs, the language system above would consist of three or more "tiers," all generated through the iterative process outlined above: (1) a group of general terms with broad applicability to many odorants or even to odorants in general; (2) a group of more specific terms that relate to a certain class of odorants (and which would be tested by mixing similar odorant types together for the panel to evaluate as in some of the examples above); and finally, (3) a third tier of more locally specific modifiers that would help to pinpoint a higher level of specificity within the general grouping. Given this structure, three sets of thirty terms could maximally describe 27,000 odor activity states. This overall language space could be further refined by introducing measures of degree for each term, as is utilized in the *Atlas*.

This multitiered structure in fact bears a certain resemblance to the structural organization of olfactory receptors themselves on the surface of the olfactory bulb, according to recent research. In their thorough investigation of the structural layout of olfactory receptors within the olfactory bulb, "Maps of Odorant Molecular Features in the Mammalian Olfactory Bulb,"<sup>18</sup> Mori et al. show that the glomeruli (small neural hubs that are points of convergence of olfactory receptors as they arrive at the olfactory bulb) — which are arrayed across the surface of the olfactory bulb, forming a kind of curved sheet, are by no means randomly arranged. Each glomerulus corresponds to only one particular type of olfactory receptor and it acts as the termination point for all olfactory receptor cells of that type within a given hemisphere of the olfactory bulb. The collective activity of a single olfactory receptor type in the nasal cavity thus first maps to one specific point on the surface of the olfactory bulb (or technically two stereo-identical points, since there is a separate glomerulus in each hemisphere for most olfactory receptors). This surface sheet is the subject of many of the contemporary studies that attempt to visualize receptor activity for particular odors. As Mori et al. delineate, the glomeruli tend to be arranged in specific clusters, each of which are sensitive to a particular range of odors. The clusters appear to be arranged as "variations on a theme," with glomeruli that are sensitive to the same classes of molecules typically arranged in close proximity. While each glomerulus-olfactory receptor unit is particularly fine-tuned to a very specific range of molecular features, it is found next to other glomerulus-olfactory receptor



units that are particularly sensitive to slightly different but related molecular features. The immense variety of possible odorant molecules—the theoretical space—is thus in some way schematized onto a two-dimensional surface that is organized into specific zones, each of which forms a continuum.

Aside from the way that this arrangement mirrors the structure of language as it moves from general to more specific along axes of related terms and concepts, a major point of interest in this study is the topographical nature of the glomerular sheet, where a location on the glomerular sheet corresponds to a position within the morphological “space” of possible molecular forms. This sheet-like arrangement is common in other sensory-neurological structures. The retina, of course, maps incoming light onto the surface of a sheet of light-sensitive receptors. Of particular interest is the fact that the tactile sense likewise maps the nerve endings of the entire body onto the sheet-like surface of the neocortex (Figure 4). This is the basis of the so-called cortical homunculus of neurological representation—the body’s tactile-spatial mirror of itself within the brain.

This topographic mapping of a continuum of variables onto a sheet-like surface that forms the basis of both olfaction and tactile perception sheds new light on the nature of the terms that tended to proliferate within the panel process. The prevalence of motion, tactile, and physical contour-related de-

scriptors points to an almost uncanny relationship between the tactile and the olfactory. It should be noted that the glomerular activity on the olfactory bulb also has a temporal dimension.<sup>19</sup> The activity of olfactory bulbs, which are so often visualized as static snapshots, are actually dynamic events. The specificity of the neurological response to an odorant exists as a pattern temporally as well as spatially (adding another layer of complication to the already difficult endeavor of mapping responses neurologically).

At its root the sense of olfaction, like the tactile sense, consists of *movement along a surface*. In the case of olfaction, that surface is also a schematic representation of the theoretical space of matter itself—the possibilities for molecular morphologies. Indeed, olfaction could in fact be considered a very sensitive form of the tactile sense,<sup>20</sup> where instead of tracing the contours of macroscopic objects, it is the topography of matter at the level of its most basic chemical-material signature that brushes against and registers itself on the olfactory receptor.

This synesthetic tendency of borrowing from other sensory areas of course recalls numerous twentieth-century experimental movements in both art and literature. Among the few present-day studies on such language as it is applied to olfactory phenomena is a paper by Rosario Caballero published in the *Journal of Pragmatics*: In “Manner of Motion Verbs in Wine Description,” Caballero examines and tabulates the tendency of published wine-tasting descriptions to employ tactile and motion verbs when describing the olfactory-gustatory phenomena of wine (which also has a significant tactile component of its own).<sup>21</sup> Caballero sees this language as a pragmatic response to the “idiosyncrasy of a genre concerned with verbalizing organoleptic sensations” and their “heuristic role in overcoming the difficulties involved in expressing sensory perception.” Caballero argues that these expressions “cutting across the senses” seem to hold a key to breaking the circularity of referential terminology.<sup>22</sup>

That this tendency seems to arise from the practical exigencies of the genre rather than from any prescribed convention shows an interesting parallel to the spontaneous tendency toward similar categories of terminology that were noted during the odor panel event at the Hammer. All of this would seem to point to a path toward understanding scent (and flavor) abstractly—a path away from the circularly bound (*x* smells *like* *x'*; *x'* smells *like* *x*), referential-mimetic framework toward one of abstract, qualitative expression. That is to say, a path from simile to metaphor; and from this cross-modal, pragmatic beginning, toward a reorganization of the perceptual concrete.



U-SHAPED	BASIN-LIKE	ROUND	DIP	LOW
WAVY	SPARKLING	DIMENSIONAL	CIRCULAR	OSCILLATING
CREEPING	SLIPPERY	FOAMY	COMPLEX	MULTIPLYING
UPWARD MOTION	DOWNWARD MOTION	SINKING	SINUS ACTIVITY	NASAL ACTIVITY
GUTTERAL	BLUNT	COATED	INERT	JAGGED
FRILLY	REPELLANT	ATTRACTANT	CLUMPED	TRICKLING
SHRILL	COHERENT	BOUND	STICKY	BUZZING
OPAQUE	OBTUSE	ACUTE	VISCOUS	PRICKLY
SPONGEY	ROD-LIKE	CONE-LIKE	LOOP/LOOPING	PLIABLE
PIN-POINT	SPECIFIC	HIGH-PITCHED	RUMBLING	PRESSURIZED
PIERCING	CLOUD-LIKE	HOLLOW	ECHOING	RESONANCE
KNOT-LIKE	T-SHAPED	L-SHAPED	RECTANGULAR	TRIANGULAR
RIGID	ADHESIVE	INDIFFERENT	TURNING AWAY	PERSUANT
CAGE-LIKE	GRANULAR	CAVE-LIKE	ENCLOSED	UNDERLYING
REPETITIVE	PRECISE	SINE-WAVE	SQUARE-WAVE	SAWTOOTH-WAVE
BUBBLY	EFFERVESCENT	FLAT	DISC-LIKE	FOLDED
CYLINDRICAL	WEDGE-LIKE	BROAD	DRIPPING	WALLED-OFF
HEAVY	LATERAL	PERIPHERAL	LIFTING	WINDOW
HARD	CLOSED	TANGLED	CORK-LIKE	SHEET-LIKE
ALL-ENCOMPASSING	BRANCHING	GELATINOUS	MUSHY	CENTRAL
DENSE	TRANSLUCENT	SPIKY	SIDEWAYS MOTION	SUSPENDED
ACCELERATING	DENTED	FIELD-LIKE	FUNNELED	WIRY
THICK	SHIFTING	SATURATED	CHEST ACTIVITY	FAÇADE
FEATHER-LIKE	SOFT	OPEN	TWISTED	COMPRESSED
DRY	HELD	RAMP	MULTIVALENT	OBLIQUE
SLOW	ELECTRICAL	CACOPHONOUS	THROAT ACTIVITY	BRITTLE
SLOWING DOWN	FADING/FADED	DIFFUSE	HARMONIC	CHIPPED
DUST-FEELING	CONTAINING SOMETHING	TOP-HEAVY	SPECTRAL	BELL-LIKE
LARGE	SLICING	WRAPPING	VORTEX	SPITEFUL
REACTIVE	RADIATING	SQUELCHING	FIXED	SPHERICAL
TENDRILLY	CRUNCHING	SMALL	LURKING	CENTRIFUGAL

5. A preliminary selection of non-source-based olfactory terminology generated by participants in the Hammer Museum workshop in Los Angeles 2014.

From this starting point in the body and in the tangible qualities of entities it is likely that this language system will evolve toward more abstract terminology with more precision. It is a paradoxical aspect of specialized language that the more concrete and specific the phenomenon it is attempting to encapsulate, the more abstract-seeming the language becomes. When language reaches a limitation, new terms must be invented, or more often, borrowed. The development of such a language is crucial not only for the production of an olfactory discourse but for a cultural evolution away from residual and widespread notions of the fixity of artworks and other “objects” and toward a greater comprehension of abstraction in a culture that is increasingly abstract.

Biography  
 Sean Raspet is an artist who produces aromatic compositions based on the study of molecules. He is also a flavorist who has worked in the Research and Development department at Soylent and is currently the Director of Product Development and a cofounder of Aqua Forma which specializes in algae-based foods. His art-related projects have included artificial flavor and fragrance formulations, cleaning products, new food prototypes, and a synthetic DNA tracking gel. Among recent

exhibitions are The 9th Berlin Biennale; *Deformation* at Société, Berlin; *Residuals* at Jessica Silverman Gallery, San Francisco; and *New Flavors and Fragrances* at New Galerie. He recently presented his research and development prototype and artwork *Soylent 0.10* (an algae-based paste) at Frieze New York 2016.

#### Notes

- <sup>1</sup> G. Buchbauer, *The Chemistry of Fragrances—From Perfumer to Consumer*, 2d ed., ed. Charles S. Sell (Cambridge: RSC Publishing, Royal Society of Chemistry, 2006), 265.
- <sup>2</sup> H. Hamazu, "Odor Perception Measurement by the Use of Odorless Room, *Sangyo Kagai* 5 (1969): 718–23.
- <sup>3</sup> M. G. Beets, "The Molecular Parameters of Olfactory Response," *Pharmacological Review* 22 (1970): 1–34.
- <sup>4</sup> Y. Niimura, A. Matsui, and K. Touhara, "Extreme Expansion of the Olfactory Receptor Gene Repertoire in African Elephants and Evolutionary Dynamics of Orthologous Gene Groups in 13 Placental Mammals," *Genome Research* 24 (2014): 1585–96; DOI:10.1101/gr.169532.113.
- <sup>5</sup> Retronasal olfaction is the smell information that is received when volatiles from food and liquids in the mouth pass into the nasal cavity. Individuals tend to perceive this incoming information as "taste," when it is in fact a form of smell that together with incoming information from taste receptors makes up the experience of flavor.
- <sup>6</sup> Gordon M. Shepherd, "The Human Sense of Smell: Are We Better than We Think?" *PLoS Biology* 2, no. 5 (2004): e146.
- <sup>7</sup> Gordon M. Shepherd, *Neurogastronomy: How the Brain Creates Flavor and Why It Matters* (New York: Columbia University Press, 2012), 111–16.
- <sup>8</sup> A. Oureshy et al., "Functional Mapping of Human Brain in Olfactory Processing: A PET Study," *Journal of Neurophysiology* 84, no. 3 (September 2000): 1656–66.
- <sup>9</sup> Asifa Majid and Niclas Burenhult, "Odors Are Expressible in Language, as Long as You Speak the Right Language," *Cognition* 130, no. 2 (2014): 266–70.
- <sup>10</sup> This response also points to an interesting relationship between the speaker and a culture in which scented and flavored products proliferate, but this would be the subject of another essay.
- <sup>11</sup> And underlying this, as will be explored further, molecular substructures paired with the olfactory receptors that are activated by them.
- <sup>12</sup> Andrew Dravnieks, *Atlas of Odor Character Profiles* (Philadelphia: ASTM, 1985). <http://www.worldcat.org/title/atlas-of-odor-character-profiles/oclc/809129424?refer=di&ht=edition>.
- <sup>13</sup> See, for example, Alexei A. Koulakov et al., "In Search of the Structure of Human Olfactory Space," *Frontiers in Systems Neuroscience* 5 (2011): 65.
- <sup>14</sup> Yaara Yeshurun and Noam Sobel, "An Odor Is Not Worth a Thousand Words: From Multidimensional Odors to Unidimensional Odor Objects" *Annual Review of Psychology* 61 (2010): 219–41.
- <sup>15</sup> Mori Kensaku, Yuji K. Takahashi, Kei M. Igarashi, Masahir Yamaguchi, "Maps of Odorant Molecular Features in the Mammalian Olfactory Bulb," *Physiological Reviews* 86, no. 2 (April 2006): 409–33; DOI:10.1152/physrev.00021.2005.
- <sup>16</sup> C. Bushdid, M. O. Magnasco, L. B. Vosshall, A. Keller, "Humans Can Discriminate More Than 1 Trillion Olfactory Stimuli," *Science*, March 21, 2014: 1370–72.
- <sup>17</sup> Abhexone, aka (2R)-2-ethyl-4-hydroxy-3-methyl-2H-furan-5-one. Gerard Mosciano, *Perfumer & Flavorist* 16, no. 4 (1991): 45.
- <sup>18</sup> Mori et al., "Maps of Odorant Molecular Features in the Mammalian Olfactory Bulb."
- <sup>19</sup> C. Martin, D. Grenier, M. Thévenet, M. Vigouroux, B. Bertrand, M. Janier, N. Ravel, and P. Litaudon, "fMRI Visualization of Transient Activations in the Rat Olfactory Bulb Using Short Odor Stimulations," *Neuroimage* 36, no. 4 (2007): 1288–93.
- <sup>20</sup> Indeed by a certain stretch, all senses could be considered tactile.
- <sup>21</sup> Rosario Caballero "Manner of Motion Verbs in Wine Description," *Journal of Pragmatics* 39, no. 12 (December 2003): 2095–2114.
- <sup>22</sup> Ibid., 2098, 2098, and 2098.



Berlin Biennale  
for Contemporary Art

# Formulation 0.10

*SEAN RASPET*





Breaking food down into its basic functional components—which may then be flexibly obtained from multiple sources —reduces waste in the form of unutilized components of the harvested organism and components that aren't metabolized by the consuming organism. Reducing waste in this sphere achieves a corresponding reduction in the use of the land, water, and energy required to produce the same amount of consumable calories and nutrients. A strain of algae that has been genetically modified to efficiently generate lipids and proteins (like the one used in the 0.10 prototype contained herein) grown in a bioreactor can produce a much greater calorie yield. per unit of water/ land/ carbon expended.

<b>soylent</b>	Paste	<b>0.10</b>
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## Nutrition Facts

Serving Size (92g)  
Servings Per Container 1

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Amount Per Serving	
<b>Calories</b>	<b>500</b>
Calories from Fat	300
<b>% Daily Value*</b>	
<b>Total Fat</b> 33g	<b>51%</b>
Saturated Fat 4g	<b>20%</b>
Polysaturated Fat 3.5g	
Monounsaturated Fat 25g	
Trans Fat 0g	
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 370mg	<b>15%</b>
<b>Potassium</b> 880mg	<b>25%</b>
<b>Total Carbohydrate</b> 24g	<b>8%</b>
Dietary Fiber 0g	<b>0%</b>
Soluble Fiber 0g	
Sugars 18g	
<b>Protein</b> 26g	
Vitamin A 25%	Vitamin C 25%
Calcium 25%	Iron 15%
Vitamin D 25%	Vitamin E 25%
Vitamin K 25%	Thiamin 25%
Riboflavin 25%	Niacin 25%
Vitamin B6 20%	Folic Acid 25%
Vitamin B12 25%	Biotin 25%
Pantothenic Acid 25%	Phosphorus 25%
Iodine 15%	Magnesium 25%
Zinc 25%	Selenium 25%
Copper 10%	Manganese 15%
Chromium 25%	Molybdenum 25%
Chloride 20%	

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3,500 mg	3,500 mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

Calories per gram:  
Fat 9 · Carbohydrate 4 · Protein 4

**INGREDIENTS:** WHOLE ALGAL PROTEIN, HIGH OLEIC ALGAL OIL, SUGAR, SOYBEAN OIL, DIPOTASSIUM PHOSPHATE, SALT, TRICALCIUM PHOSPHATE, MAGNESIUM PHOSPHATE, SOY LECITHIN, CHOLINE CHLORIDE, SODIUM ASCORBATE DL-ALPHA-TOCOPHERYL ACETATE, ARTIFICIAL FLAVORS FERROUS GLUCONATE, RETINYL PALMITATE, OMEGA-3 ALGAL OIL, ZINC SULFATE, NIACINAMIDE, D-CALCIUM PANTOTHENATE, THIAMIN HYDROCHLORIDE, COPPER GLUCONATE, MANGANESE SULFATE, RIBOFLAVIN, PYRIDOXINE HYDROCHLORIDE, ERGOCALCIFEROL, POTASSIUM IODIDE CHROMIUM CHLORIDE, BIOTIN, FOLIC ACID, SODIUM SELLENITE, SODIUM MOLYBDATE, PHYTONADIONE, CYANOCOBALAMIN. **CONTAINS: SOY**

Manufactured for Rosa Labs  
207 S Broadway Suite 600  
Los Angeles, CA 90012

*While not intended to replace every meal, Soylent can replace any meal.*

*Children, women who are pregnant, nursing, or may become pregnant should consult their doctor before consuming Soylent. Please refer to soylent.com/notes for more information.*

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unwholesome) rather than quantities, functions and interrelationships. The insistence that a tomato be grown from an unmodified, less efficient strain using pre-modern agrarian methods is a recipe for feudalism. It naively assumes a “tomato” is a fixed “thing” and not a malleable function that is necessarily in a constant process of “modification.” The “all natural” trend is essentially concerned with maintaining categorical boundaries to the detriment of efforts to reduce the land, water, and energy footprint of humans’ caloric intake.

Most present-day economic-caloric energy<sup>1</sup> is spent on reformulating existing things within preexisting parameters (rather than reformulating at the level of the categories themselves). Like art, perpetual reformulation is a form of waste or excess. If we can’t completely eliminate waste and the drive towards perpetual reformulation (work for work’s sake), we can at least fold this aesthetic-economic expenditure into other things that we likewise can’t eliminate, such as food and medicine. Here this additional expenditure can sit as a thin aesthetic layer atop the functional one (0.10 percent flavor by weight)—a little extra *je ne sais quoi* to eventually be reabsorbed into our metabolic processes. Reduce waste by directing energy expenditure towards avenues where it can be recaptured. After all, the immense economic effort involved in reformulating the possible instantiations of the already existent is also an ongoing mass-scale reformulation of the atmosphere.



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<sup>1</sup> Economic-caloric energy is the energy resources spent during the process of economic production—often in the form of petroleum consumption—including the metabolic energy of working humans, which has its own overlapping energy requirements.

SEAN RASPET produces liquid formulations and abstract systems that circulate within the mass economy and the space of finance. Previous projects have included artificial flavor and fragrance formulations, cleaning products, new food prototypes, synthetic DNA tracking gel, and an interlinked system of sublets. For the 9th Berlin Biennale Raspet created an exclusive limited edition of 2000 Soylent 0.10 samples for the cover of the publication.

IMAGE: Sean Raspet × Soylent R&D, *Soylent 0.10, complete nutrition algae-derived paste (prototype)*, *Pentagon-1/ OMNI flavor formula*



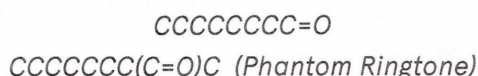
## The Matter of Molecular Practice: An Interview with Sean Raspet

By Joel Kuennen

June 23, 2016

We live at a time when an astounding amount of information is available to us at a shocking degree of immediacy. A netizen will regularly take deep-dives down wiki wormholes, eagerly grazing on masses of hyper-specific information related to a singular topic, all the while rhizomatically connected to and through a world of greater knowledge. No longer limited to a vocabulary of the phenomenological, we can pastiche together descriptions, criticisms, and comments that pull from the sciences, visual culture, advertising, etc. This mass availability of the specific makes it difficult to universalize, but philosophically and practically, we are less interested in a lexicon of the universal than a repository that is universally available.

Sean Raspet approaches materiality from a hyper-specific level: an atomic level. Titles of his works will take the form of long molecular formulas:



As such, they can be intimidatingly opaque but given a few minutes with Google, their meanings emerge non-linearly. The first formula represents Octanal, a molecule present in citrus oils. Octanal is used in the mating rituals of the crested auklet, a Siberian bird that produces the oily compound near its beak and smears it liberally about the face of its partner; Octanal is known to repel the *Aedes aegypti* mosquito, the dreaded carrier of Zika, Yellow Fever, and Dengue Fever; Octanal contains eight carbon atoms, sixteen hydrogen atoms, and one oxygen atom. These three elements, whose combination is the smell and taste of oranges—carbon, hydrogen, and oxygen—make up 93 percent of the human body.

In chemistry, the importance of relation becomes very apparent.

"Media are civilizational ordering devices." In John Durham Peters' book *The Marvelous Clouds*, the media philosopher advocates for a broader understanding of media to include the environment. His basic premise goes something like, "if there is data collected, it is now mediated." It's a neat premise and one that does well in light of artists like Sean Raspet who have moved to a molecular level to craft their work. The environment—the physical reality of things—can now communicate, can hold secrets, can sway and skewer opinion, and best of all, allow for the loss of the aura of religious incomprehensibility most laypeople have towards the scientific.

Take Raspet's current exhibition *War Games* at Moran Bondaroff's new space in Detroit in which the aforementioned work is installed. Says the artist: "The two main works are five-gallon tanks of water that I have had collected from two sites: one in the area that was contaminated by a chemical spill of 4-methylcyclohexanemethanol in the Elk River region of West Virginia. And the other was recently collected from an area affected by the lead contamination in Flint, Michigan." Visually, the work is simple: five-gallon drums of liquid on a concrete floor. But with Raspet, one cannot stop with the visual. The material requires investigation. "I feel that these are important material artifacts/substances from our culture and they should be preserved as such." However, the visual presentation of his work is not bereft of meaning. Raspet calls on the industrial, the laboratory, the startup for his visual lexicon. His exhibition with the Berlin gallery Société at Frieze New York last month at once appeared as dystopian marketplace, DIS photo shoot, and product placement.

**Nutrition Facts**Serving Size (92g)  
Servings Per Container 1

Amount Per Serving

**Calories** 500  
Calories from Fat 300

% Daily Value\*

**Total Fat** 3.5g 51%  
**Saturated Fat** 4g 20%

Polyunsaturated Fat 3.5g

Monounsaturated Fat 25g

Trans Fat 0g

**Cholesterol** 0mg 0%**Sodium** 370mg 15%**Potassium** 880mg 25%**Total Carbohydrate** 24g 8%

Dietary Fiber 0g 0%

Soluble Fiber 0g

Sugars 18g

**Protein** 24g

Vitamin A 25% • Vitamin C 25%

Calcium 25% • Iron 15%

Vitamin D 25% • Vitamin E 25%

Vitamin K 25% • Thiamin 25%

Riboflavin 25% • Niacin 25%

Vitamin B6 20% • Folic Acid 25%

Vitamin B12 25% • Biotin 25%

Pantothenic Acid 25% • Phosphorus 25%

Iodine 15% • Magnesium 25%

Zinc 25% • Selenium 25%

Copper 10% • Manganese 15%

Chromium 25% • Molybdenum 25%

Chloride 20%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Potassium	3,500 mg	3,500 mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	50g

Calories per gram: Fat 9 • Carbohydrate 4 • Protein 4

**INGREDIENTS:** WHOLE ALGAL PROTEIN, HIGH OLEIC ALGAL OIL, SUGAR, SOYBEAN OIL, DIPOTASSIUM PHOSPHATE, SALT, TRICALCIUM PHOSPHATE, MAGNESIUM PHOSPHATE, SOY LECITHIN, CHOLINE CHLORIDE, SODIUM ASCORBATE, DL-ALPHA-TOCOPHERYL ACETATE, ARTIFICIAL FLAVORS, FERROUS GLUCONATE, RETINYL PALMITATE, OMEGA-3 ALGAL OIL, ZINC SULFATE, NIACINAMIDE, D-CALCIUM PANTOTHENATE, THIAMIN HYDROCHLORIDE, COPPER GLUCONATE, MANGANESE SULFATE, RIBOFLAVIN, PYRIDOXINE HYDROCHLORIDE, ERGOCALCIFEROL, POTASSIUM IODIDE, CHROMIUM CHLORIDE, BIOTIN, FOLIC ACID, SODIUM SELENITE, SODIUM MOLYBDATE, PHYTONADIONE, CYANOCOBALAMIN. **CONTAINS: SOY**

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The Frieze presentation was part of the work Raspet is now doing as a "taste creator" with tech-nutrition startup Soylent, a techno-futurist, minimalist meal replacement program much maligned for taking the jouissance out of food. Born of the "disproportionate amount of time and money [the founders] spent creating nutritionally complete meals," Soylent for many epitomizes the height of Silicon Valley excess—the latest disruptor attempting to fundamentally change "what" and "how" we eat because the "why" has already changed. As something of a neophile, I'd been curious to try Soylent and was eager to do so when I happened upon Raspet's booth. They had stocked two versions, the drink (Soylent 2.0), which tasted somewhat like the milk left over from a bowl of cereal, and a prototype nutritional paste made from algae (at right) which is currently being distributed as a sample attached to some of the catalogs of the Berlin Biennale. "Paste," as it is simply called, tasted like umami peanut butter (not bad). Salty, sweet, thick, it clung to the esophagus on the way down and, lacking masticatory effort, didn't sate my hunger. New products are sometimes hard to place.

As a jug of clear, Flint water belies the chemical contaminants therein, the beige, viscous material of Soylent reveals neither its taste nor nutritional value upon viewing. It is on the molecular level where value or meaning resides.

**Joel Kuennen: Can you tell us about your work with Soylent? What is your day-to-day as a taste creator?**

**Sean Raspet:** I work on formulations, new concepts, and research primarily. Test formulations for a flavor concept are mixed in my studio (a factory produces the flavor based on the formulation I come up with when the flavor is "scaled up" into product form). I bring these flavor prototypes into the office about twice per week, have meetings, send emails, etc.

**JK: What's your goal as a taste creator? Is it a matter of hitting the five main tastes? Is there a proven ratio of salt, sweet, etc. that is used as a goal or is it a more artful process of trial and error?**

**SR:** Flavor is roughly 80 percent aroma (which is perceived "retronasally" through the back of the throat



into the nasal passages), so most of what I do is concerned with the “flavor volatiles,” not as much the sweetness and saltiness etc. on the taste buds. It’s a bit more like perfume. But the taste on the taste buds works together with the aroma to create the overall effect.

**JK: Where in the process of production is your prototype that you distributed at Frieze?**

**SR:** It’s still a prototype. I can’t comment much more about it since it’s still in development. Generally for every product that is eventually launched in the industry there are a multitude of prototypes.

**JK: How has your previous body of work informed your current position?**

**SR:** It’s essentially the same. I’ve been working almost entirely with liquid formulations, things that are sold and produced on a quantitative, volumetric basis. Like most commodities that circulate in the economy, and unlike the way that art circulates. What I do at Soylent for example also consists exactly of making liquid “compositions of matter.” And the formulations I make for them are no different from any formulation I have made previously, except that they circulate in a larger quantity.



Sean Raspet presenting Soylent with Société at Frieze NY, 2016.

Photographer: Robert Kulisek, Clothing: Nhu Duong, Styling: Jon Wang, Models: Michael Xufu Huang, Eliot Glass and Yulu Serao.

**JK: Given your body of work often takes a parodic look at materialist structures and conventions of production, what were your motivations in beginning to work at an essentialist endeavor such as Soylent?**

**SR:** I don’t think Soylent is “essentialist” in the philosophical sense of believing in immutable categories—quite the opposite in fact! But I’m assuming you mean that it is a product designed to provide the essential nutrients needed for health, or the basic functional aspects of food rather than focusing on the aesthetic experience. Also I wouldn’t say my work is parodic towards conventions of production either. In any case, my motivations for working with them had to do with having the formulations that I was making circulate in a larger quantity and in a larger cross-section of society. Also, the idea of making an artwork that is a commercial product and is involved with the processes of production, rather than making art that was simply “commenting on” these kinds of things without participating in them.



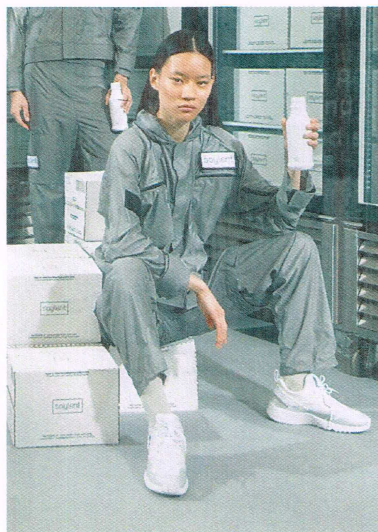


Sean Raspet presenting Soylent with Société at Frieze New York 2016. Photo: Robert Kulisek

**JK: What do you think of the company's techno-utopian positioning? Is there a worthwhile trade-off in the increased potential for nourishment given the loss of jouissance? And were you brought on as a means of mitigating this criticism of the product?**

**SR:** I think in a way the company could be seen more as realist or pragmatic than techno-utopian. I think the prevailing trend in food is a kind of retro-utopianism of things like "organic" and "all natural." Of course these terms are generally meaningless, especially "all natural"—primarily just marketing tactics. Organic farming is often worse for the environment and utilizes more pesticides (just different types of pesticides) and requires more resources. But people still pay a premium for these products out of a nostalgic fantasy of an idea of nature before modern agriculture and industry. (That being said I think crop rotation systems are one positive contribution from organic farming, though with more efficient food sources such as algae, they may one day be unnecessary.) It is primarily from the perspective of this prevailing trend that Soylent appears techno-utopian. It's really just rational I would say, and because it's a more rational utilization of resources such as land, water, and energy it also reduces food's environmental impact.

In terms of whether I was brought on to mitigate criticism of the product, definitely not! I was brought on as a flavorist. I had been working with flavors for years beforehand in my art and I'm glad they took me on given this experience, even though I didn't have a traditional food scientist background.



Sean Raspet, *Soylent* with Société at Frieze NY, 2016

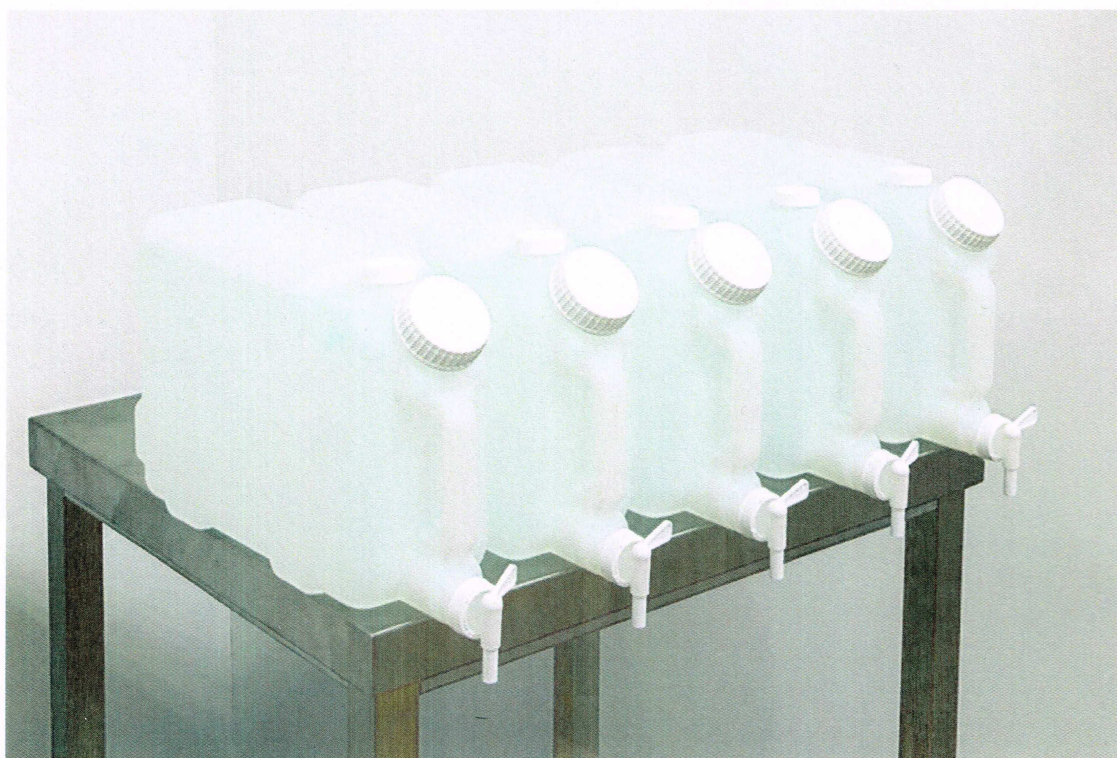
Photo: Robert Kulisek, Clothing: Nhu Duong, Styling: Jon Wang, Models: Michael Xufu Huang, Eliot Glass and Yulu Seroo



**JK:** Much of your previous work exhibits a pension for working backwards, reformulation, starting with the bare chemical components to either create non-mimetically or recreate mimetically as is the case with your abstract gasoline. What do you see as the programmatic potential for this deconstructive/reconstructive activity?

**SR:** It's important to me to work at the fundamental level of a medium or process in order to understand it and have the largest array of possibilities in working with it. The fundamental level of material in general is of course the molecular level where most of the characteristics of the entities and substances we encounter every day arise (there is of course the subatomic level but the atomic/molecular level is the limit of practical interaction).

The molecular level is also the fundamental level for flavor and scent: flavors and scents are simply collections of different molecules in certain proportions that trigger an olfactory response. So in the end I see scent/flavor and the reductivist/synthetic way of working with molecules and rearranging entities as a window into the material world in which we live. But it is also a window into the range of alternate material possibilities that don't exist in the world but could be possible: for example with my projects that have dealt with synthesizing or registering molecules that previously have not existed.



(from left to right)

- 1) CCCCC(C)O CCCCCCCCCO CC/C=C\CC/C=C/CO C1=CC=C(C=C1)CCO CC1=CCC(CC1)C(C)(C)O CC(=CCC/C=C/CO)/C/C CC(=CCCC(=CCCC(C)(C=O)O)C)C (C8+ alcohol variations), 2015. 3-octanol, 1-decanol, trans-2, cis-6-nonadien-1-ol, phenylethyl alcohol, alpha-terpineol, nerolidol, geraniol 2) Human Vanillin Receptor Target Mixture, 2015. vanillin, ethyl vanillin, vanillin acetate, vanillyl butyl ether, vanillylacetone, N-vanillylnonanamide. 3) C1=CC=C(C=C1)C=O C1=CC=C(C=C1)CC=O C1=CC=C(C=C1)CCC=O (benzyl(C++)aldehyde) 2015. benzaldehyde, phenylacetaldehyde, hydrocinnamaldehyde.
- 4) CC1=NC=CN=C1 CC1=NC=CN=C1C CC1=CN=C(C(=N1)C)C CC1=C(N=C(C(=N1)C)C)C (methyl pyrazine addition ramp) 2015. 2-methylpyrazine, 2,3-dimethylpyrazine, 2,3,5-trimethylpyrazine, 2,3,5,6,-tetramethylpyrazine 5) CC(C)COC=O CC(C)COC(=O)C CC(C)CCOC=O CC(C)CCOC(=O)C CC(C)C(=O)OC CC(C)CC(=O)OC CCOC(=O)C(C)C CCOC(=O)CC(C)C (iso-ester reversal) 2015. isobutyl formate, isobutyl acetate, isoamyl formate, isoamyl acetate, methyl isobutyrate, methyl isovalerate, ethyl isobutyrate, ethyl isovalerate.

**JK:** Your projects involving Soylent and chemical reformulation offer a critique of the synthetic mindset as is described in Nc1c(C(OC)=O)cccc1 and the abstraction of value as mentioned in Forms and Formulation. Firstly, can you describe your notion of the synthetic mindset? Secondly, do you consider



**this practice a critique of a computational/synthetic relationship to our own bodies and alienation from our environment or as an embrace of a future where non-essential labor is eliminated so that we may direct our efforts to higher intellectual and cultural pursuits?**

**SR:** The texts you mention are not a critique of the synthetic mindset but simply an acknowledgment and further elaboration of it (which speaks to your second question). What I call the "synthetic mindset" is a cultural shift in our relationship to the material world that has become especially noticeable in the past 10 to 15 years. Matter and material entities are seen as increasingly malleable—a kind of revisable materiality. It's kind of like the idea of an "undo" button or a Photoshop filter or color slider that we increasingly imagine could be applied to the objects of our everyday experience.

There are the obvious ways in which there is a shifting relationship to previously fixed cultural categories, such as a changing relationship to the idea of nature related to GMOs (one of the bogeymen of the present which I think is actually a very positive development overall in terms of being able to achieve an environmentally efficient and more sustainable agriculture system). But what I am talking about is not so much these obvious examples but more the everyday smaller instances where our relationship to the world has shifted and become more fluid, often in terms of how we imagine it rather than how we may actually interact with it.

In general I think this is a positive development: it opens up a new area of play and eventually even perhaps a kind of freedom. Or it at least is something to build upon. But it is of course crucial to remain aware that as much as we may imagine the material world to be malleable, there are fixed limitations of energy and resources. Nothing is "virtual"; everything is material. So we have to think economically and be aware of the resources required to make material transformation (or "virtual" representation) and push for those resources to be distributed equally and sustainably.

And yes, to the extent that this situation may point to a distant future where work is either eliminated through automation or becomes a different mode of activity—even a voluntary activity—more akin to play, we have to ensure that this elimination or reduction of work happens equally for all people. It seems a very long way off from the perspective of the present, but it's a conversation I think we should be having now.



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Issue #27 Summer 2016

# Sean Raspet

By Franklin Melendez





In the flux of post-industrial capital, liquid is the currency that counts. Market analysts monitor its ebb and flow as obsessively as *Mad Max*'s Immortan Joe, who had the foresight to traffic in its many forms, from mountain spring and fossil fuel to mother's milk. Sean Raspet recognizes the power of the liquid as well and since 2012 has pivoted his practice to engage almost exclusively with its many vicissitudes. To date, this has yielded a series of radical engagements that expand and reconfigure the parameters of contemporary sculptural thinking.

Take, for instance, 2014's *New Flavors and Fragrances*, a solo exhibition of colorless or nearly-colorless fluids composed from the common compounds used by the flavor and fragrance industries. Displayed neatly in grids of 5-liter plastic jugs, this body of work retains the idea of 'plastic form' only as a heuristic device—or better yet, a containment strategy for an alchemy that unfolds, unseen, on the molecular level. As Raspet describes it, this is an extreme type of reduction: "a paradigm of working with materials in which arbitrary, spatial considerations such as form and compositional arrangement are screened out in favor of underlying structural relationships." The artist's gesture is thus subsumed by procedure and formulation, a careful distilling of exact ratios of molecular compounds into synthetic formulations that appeal to the 'chemical senses' (namely taste and smell).

The resulting variants achieve various material effects. One strand posits the concentrated form of what we've been trained to perceive as 'fruit flavoring' (*Fruity*, 2014), which becomes poisonous in its purest form; another yields a negative cola—the molecular mirror image of the readily available commercial product which boasts negligible flavor variations; yet another, produces a fragrance which aims to activate the sensation of a phone buzzing in one's pocket (*Phantom Ringtone*, 2013- 2014), the synesthetic byproduct of our tech-regulated existences.

### Tackling key issues of global sustainability and redrawing our basic metabolic functions

At once abstract and hyper-concrete, these substances exist as polymorphous states of matter. Unlimited and available in any quantity, they are discontinuous and non-discrete—their volume adjustable to the demands of any economy. Archived as patented or defined chemical formulas, they are often contractual in nature and can be acquired for reproduction by a third party. In their intended use, they are also delivery systems that invade bodies, modifying them to shifting conditions, environmental and otherwise. For Raspet, each of these avenues opens onto resonant discourses, from the legacy of Conceptual Art and changing parameters of objects and entities to questions of utility, space and storage, which might very well be the defining concerns of our not-so-distant future.



This line of thinking, in particular, has found its latest iteration in an ongoing collaboration with the Silicon Valley based company, Soylent, which has pioneered a meal replacement beverage that is available in both liquid and powdered forms. Meeting all nutritional requirements for an average adult, the formula is faultless—save for what some describe as a nondescript blandness. Working together with the company's labs, Raspet has focused on developing specific flavors that are both mimetic and non-mimetic in nature. These additives seek to replicate the sensorial experience of food that we crave, while slowly conditioning our palettes to a newfound source of nourishment.

Neither dystopic nor utopian, Raspet's collaboration with Soylent engages the exigencies of the present, tackling some of the fundamental issues of global sustainability, among these, dwindling natural resources, access to food and the ability of future bodies to adapt to alternate sources of caloric intake. This is artwork both prescient and present that seeps into porous systems where it gestates and slowly redraws our most basic metabolic functions.

Sean Raspet (American, b. 1981) is an artist who lives and works in Los Angeles. He is represented by Société, Berlin, and Jessica Silverman Gallery, San Francisco. Raspet features in "Fear of Content," the digital platform of the 9th Berlin Biennale, on view through 18 September.

Franklin Melendez is an independent curator and writer based in New York.

Image: Sean Raspet feat. Soylent feat. Nhu Duong. at Frieze NY 2016. Courtesy of the artist and Société, Berlin

Photo credit: Robert Kulisek. Clothing: Nhu Duong, Styling: Jon Wang, Models: Eliot Glass and Yulu Serao

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HIGHLIGHTS (<http://kaleidoscope.media/tag/highlights/>)

ISSUE #27 (<http://kaleidoscope.media/tag/issue-27/>)

SEAN RASPET (<http://kaleidoscope.media/tag/sean-raspet/>)

# 032c

## Post-Food, Post-Fashion: NHU DUONG Makes Uniforms for SOYLENT

*Text: Bianca Heuser, Photography: Robert Kulisek (<http://www.robkulisek.com>)*

posted May 18, 2016



In a world of increasingly scarce resources, efficiency is coming into fashion. Versatility develops a sexy new ring. The artist Sean Raspel is devoted to the idea of a multi-tasking everything: his presentation with Berlin gallery Société at this year's Frieze New York doubled as a trade fair promotional stand for Raspel's day-time employer Soylent.

The food start-up produces an inoffensive-looking drink that supplies the human body with all the nutrients it requires, while saving consumers time and money by removing the need to either cook, or chew, or eat out. It is Raspet's mission as the company's in-house flavorist to make the gooey future food tasty, too. "I consider all the flavors I design artworks," he says. At the art fair they were presented bottled-up in stainless steel fridges, and served to the visiting public for free.

Fittingly, Raspet commissioned the Berlin-based fashion designer Nhu Duong with the design of potential Soylent staff uniforms: functional and chic at once, designer uniforms lie at the end of the rainbow where Marxism and fashion meet. Modeled by Michael Xufu Huang, Eliot Glass and Yulu Serao, the Soylent grey garments follow this narrative in detail – their versatility maximized through detachable components, while maintenance is minimal thanks to microfibre fabrics that need not be washed with water. Dirt just runs off the futuristic design. Duong explains this marriage of multi-layered belief systems to 032c.

### **How did your collaboration with Sean Raspet come about?**

I know Sean through his gallerist, Daniel Wichelhaus from Société in Berlin, who was actually the one who suggested us all to work together on this project. The presentation at Frieze was officially a Société booth showing Sean Raspet, as brands cannot rent booth at art fairs for promotion. In a way the project blurs the boundaries between promotion, sculpture and art fair booth. So adding a fashion element made totally sense to complete the idea of the booth as a promotional event and turned it into a stage for a fashion shoot and lots of selfies.





**What was your conceptual approach to the design? How does it relate to Soylent?**

We wanted to create a garment that reflected some of the aspects of efficiency and versatility that Soylent itself has. So on the one hand we were started looking at nano-materials, but on the other hand we wanted to rethink the idea of a uniform into something that is versatile and can be personal, so we added detachable parts, straps, zippers and velcro patches. I think there is always an interest in technology in my garments, although I am myself not a very technological person, but rather interested in ways that clothes can be activated through function or materials.

**You have mentioned that self-cleaning materials mimic the effect of certain plants with self-cleansing leaves: technological advancement is often inspired by nature. Do you think of artificial and natural as a dichotomy, or is the line between them more blurred to you?**

In my choice of materials I have always been interested in the dichotomy of artificial and natural materials, something that can be directly seen in my work. But to be really honest, this is more of a personal attraction to certain materials rather than a conceptual choice. In Vietnamese culture there is an attraction to such things as plastic flowers or fake diamonds, so I basically grew up favouring effect over substance. At the same time Sean is really taking it to the next level, as he fully embraces the “artificial”, working with chemical compounds. He is currently creating new flavour formulations for Soylent.



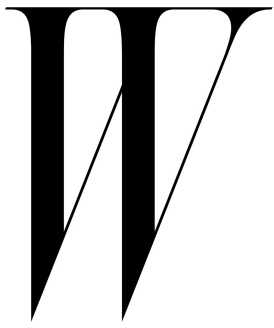


**Are the overalls going to be for sale, are they considered collaborative artworks of yours and Sean Raspet, or will they become Soylent uniforms even?**

The overalls are conceived as a prototype for a more efficient and sustainable alternative to traditional clothing. They were produced specifically for the event at Frieze and aren't for sale. Now that the event is over Raspet and other Soylent employees will be wearing them and testing them out in their day-to-day lives. I can't yet comment on whether they will become Soylent uniforms.

**Your designs are avant-garde yet always also utilitarian. Do you see the uniforms as a distillation of that approach? Is utilitarianism glamorous to you?**

Fashion has a clear function: it should be wearable. At the same time, fashion constantly questions this function, trying to push against its limits, whether these be physical, technical, or even social limits. If you look at the great collections from the past, they were experimental but at the same time directly relevant for the everyday life of people. Fashion always seeks out these functional edges, balancing on the fine line between function and decoration. I think utilitarianism is not glamorous but playing with its idea can be glamorous.



## Frieze New York 2016: What the Hell Is Soylent and Why Is Everyone Drinking It at Frieze?

by [Emilia Petrarca](#)

May 7, 2016 12:00 pm



"Yes, this is a real company. No, it's not made out of dead people."

These were two of the many questions being answered at Société gallery's booth at Frieze New York this year, which featured free samples of a new meal supplement called Soylent. In collaboration with the artist Sean Raspet (who also works for the Los Angeles-based startup as a "flavorist" and "food product developer"), the booth was comprised of refrigerators stocked with clean, label-free white bottles of Soylent's milky concoction. Instead of stylish gallerists, attendants in futuristic jumpsuits designed by Nhu Duong, which were made out of a microfiber material that eliminates the need to wash them with water, handed out bottles. Imagine KITH treats meets Juice Press meets Star Trek.

One male attendant with long, dirty blond hair told a group of older women that he drinks Soylent every morning for breakfast. They each tilted their oversized designer glasses, giving him a quick up-and-down. "Well, aren't you just a picture of health!" said one of them. He flipped his hair and smiled. When they heard each bottle contained 400 calories, however, they frowned and shuffled away.

Soylent's reference to the 1973 sci-fi film, *Soylent Green*, is perhaps an unfortunate one. In the mind of Rob Rhinehart, the company's founder, it was just a nerdy callback; more importantly, it's a portmanteau of the main ingredients: soya and lentil. But in everyone else's mind, Soylent's odd taste and presentation makes it *almost* believable that it's made out of the deceased. Almost.

To my tongue, Soylent kind of tastes like the milk at the bottom of your cereal bowl. "It reminds me of my childhood," said one girl excitedly. Her father, on the other hand, made a face of disgust.

"It tastes like baby food," he added.

A younger patron was more interested in the samples of "Soyleny 0.10," which looked like space food. This new product is a 90% algae-derived paste with a flavor Raspet calls "PENTAGON 2.4." Yum?

To be fair, visitors trapped at the fair on Randall's Island are forced to choose from high-end food vendors like Cosme, Sant Ambroeus, and Marlow & Sons — none of which are very affordable. So, when it came down to choosing between Juice Press and Soylent, many welcomed the Frieze free-be. Soylent's mission on a global scale is to provide an affordable and sustainable meal solution, and in this admittedly distorted context it succeeded. Whether or not it satiated the hunger of New York's art world, however, is undecided. "Art is so widely acknowledged to be something that people can consume; why then is it so difficult to imagine that art can be eaten?" the hyperbolic Soylent futurist manifesto read.

It's not. Not if it's free.





# The Fragrance of Coins

Sean Raspet

*interviewed by Kevin McGarry*

Recently Sean Raspet has been mining what escapes into air, exploiting the chemical makeup and poetic densities of substances like cola and oil. As physical, psychic, and economic determinants of 21st Century energy, he unravels their blueprints in labs and through keystrokes, into paradoxical, polysensory variations that reclaim the power and timeliness of dematerialization.

Recentemente Sean Raspet ha preso ad analizzare l'intangibile, sfruttando la composizione chimica e la densità poetica di sostanze come la Coca-Cola e il petrolio. Intese come variabili fisiche, psichiche ed economiche dell'energia del Ventunesimo secolo, l'artista ne svela in laboratorio la composizione e, attraverso l'utilizzo di formule, elabora variazioni paradossali e polisensoriali che rivendicano il potere e l'opportunità della dematerializzazione.



Untitled (Police Incident (2)) 3, ((2007-2012) 2007-2011, 2012. Courtesy: the artist and Stadium, New York

**Kevin McGarry:** *This patent for the chemical difference between Coke and Pepsi is a profoundly pop metaphysical piece of poetry, where did it begin for you with the two sodas?*

**Sean Raspet:** I started the first draft of the Coke vs. Pepsi patent in the winter of 2012. I've been interested in this idea of formulation and of thinking about my artwork as a reformulation or a changing of different variables within an overall composition. Just before this I'd done a sublet project, which is almost like a derivative scheme I would say. It's a chain letter or loop of sublets taken on by arts organizations, they're the only ones that have signed on for it, although I always wanted to extend it into other areas. In the end there were ten different organizations—SculptureCenter, Printed Matter, Studio-Lo...—subletting very small spaces from each other. In most cases there was no physical alteration of the space, it just became a legal transfer of the space or of the rights to use it. These abstract, legally defined entities were something that was very interesting to me, the ability to define a structure through language, through a purely legal structure. I think the Coke and Pepsi project actually came out of that: trying to define a physical entity in a legal language.

**KMG:** *I always thought cola recipes were closely held secrets, how did you get them?*

**SR:** A machine heats up a compound or a mixture at a very slow rate, one degree centigrade per minute for instance, and as things gradually heat up, each compound has a different evaporation boiling point, so gradually different things evaporate. This is coupled with a mass spectrometer, which, as the compound is boiling, shoots ions at the compounds to create ionized fragments that can then be measured by their weight and to identify which compounds are which.

**KMG:** *Did you collaborate with a lawyer on the writing of the patent?*

**SR:** No, actually I had been set up with one through Volunteer Lawyers for the Arts, but then they had to do a conflict of interest check to make sure they could work with me on the project, and it came back that they couldn't do it. The reason is, if they represented me in this Coke vs. Pepsi thing, then the entire firm could never represent Coca-Cola or Pepsi. Once we figured that out, I spoke to California Lawyers for the Arts and they said, yeah pretty much no one is ever going to agree to do this with you. So I wrote the whole patent myself. I'd actually written the patent for something else in the past, so I'm familiar with the structure and that's a component I'm very interested in. I see it as similar to a programming language. It's operational, so whatever you say in law within a certain frame becomes true just by virtue of saying it. I see it as an actual way of creating an entity through language.

**KMG:** *On this other wall you have the keys cut to represent the physical make-up of the two sodas, and with the fragrance of old keys and coins set on the ground between them, the three pieces feel very strongly triangulated.*

**SR:** I came up with the piece about the coins and keys smell somewhat separately from the patent project, but at a certain point I realized they come together because I'm thinking about Coke and Pepsi sort of just as numbers, as algorithms of storing value. In some sense the material composition of Coke is only a value storage algorithm. Behind all of this work one of my main interests is dealing with the condition of financialization, of derivatives, of different spatial parameters and ontological parameters of what is an object under a heavily abstracted economy.

**KMG:** *Can you elaborate on how you engage that economy?*

**SR:** There's the mortgage crisis of 2007–2008. Mortgages are abstractions of actual parcels of land. They become pooled and there's a derivative written for it, and there's a credit swap based on that derivative contract, and there's another level of speculation based on that... You can say at that top level it's purely abstract and there's no relation to the ground level, but that's not exactly true. There's a relationship there, and for me what's interesting is to look through that material relationship, and to try to identify what actually is that material happening up at that top where these gigantic, extremely abstract-seeming transactions are happening. A mortgage-backed derivative, people might say, oh it's just an abstraction, it doesn't actually exist, but I think it's more interesting and maybe more productive to say that it does exist, let's look at the parameters of this *object* or this *entity*.

**KMG:** *How did metal, specifically, enter this equation, with the keys?*

**SR:** With metal it's going back to the idea of financial abstraction and coinage, that being one of the initial modes of abstraction in culture. The development of coins allowed for equalizing otherwise incommensurable, even opposite, things. Of course coinage has this very physical, tangible form as well. And it also has a smell. Its smell is actually a result of its interaction with the body. A new coin doesn't really smell like anything, but as you handle it the grease and sweat from people's hands that comes in contact with the metal causes these different ionization processes, and that's actually the smell that you get when you smell an old key or an old coin.

**KMG:** *Coins are holding a code for value and the value of keys are the codes they hold for access...*

**SR:** Yeah, they both have this capacity for duality, of being a mechanism that operates within a symbolic sphere, while also being this simple clump of matter that interacts with the body. So my interest was to take that and to synthesize that, to take the airspace above a hand, which is where you smell the results of skin degradation, to take those numbers of different compounds and then to produce a synthetic fragrance from that. To me this seemed like a really interesting way of thinking about the entity of exchange.

**KMG:** *What are some specific new projects you're working towards?*

**SR:** One thing I want to show at Jessica Silverman this fall is kind of a reconstituted crude oil. Crude oil is actually one of the most complex mixtures on earth when it comes to analyzing it and figuring out what kind of compounds are in it. There have been a lot of studies about what is actually in crude oil and there is lots of variation. But they generally use a certain percentage for jet fuel, a certain percentage for plastics, some for gasoline, kerosene, petroleum jelly and stuff... so what I'm going to be doing is taking all of these things in certain proportions, recombining them and mixing them to get back to a reconstituted crude oil substance. Then, as another project, I'm also planning to sample the air space in the gallery to make a cleaner that smells like that air space, kind of like the coin fragrance.

**KMG:** *Almost the olfactory equivalent to noise cancellation?*

**SR:** Yeah, but I think it will be interesting because it should actually be intensified. Whenever you perform the analysis in the lab, you always miss a couple things that might actually be responsible for a substance's smell. There's always some sort of variation with how we analyze it. So I'll be taking a scent profile of the air space of the gallery and making a condensed fragrance out of that so when they clean their surfaces it will produce an intensified version of the smell that's already in the space.

**KMG:** *When I first saw your work you were mostly showing these suspensions in hair gel, how did that bring you into this arena of experimenting with all these immaterial constructions?*

**SR:** I was actually really focused on images and stock photography back in 2007 or 2008, and then a couple things happened. For one, I was kind of tired of it, but then also there was this saturation within the art world of stock photography, so I've gone in a different direction with my work. But for a while I was showing these banner pieces, and the hair gel pieces. More recently, over the past few years, I'd say it's been a lot of these contracts, legalese, and text works, and also in the last few years chemical equations and product formulations for me have been a way to conjoin interests in material substances that are circulated in culture, cosmetics and whatnot. It's in chemistry where things become their most concrete and their most abstract at the same time. Phenomenologically, aside from smell, interestingly, you don't have a way to recognize the difference between propylene glycol and sodium laureth sulfate unless you're dipping your hands in them. You can actually maybe smell the distinction, but otherwise you need an entire language system to administer their differences.

**Kevin McGarry:** *Il risultato del tuo brevetto per determinare le differenze chimiche tra la Coca-Cola e la Pepsi è una composizione poetica profondamente pop e metafisica. Com'è nato questo progetto sulle due bevande?*

**Sean Raspet:** Ho steso la prima bozza del brevetto Coca-Cola vs. Pepsi nell'inverno del 2012. Ero interessato all'idea della formula e volevo che il mio lavoro fosse una riformulazione o un'elaborazione di variabili differenti che presentano una composizione unitaria. Poco tempo prima avevo creato un progetto incentrato sul subaffitto, che definirei quasi come uno schema derivativo. È una catena di Sant'Antonio o un circuito di subaffitti da parte di alcune organizzazioni artistiche – le uniche ad aver accettato di partecipare al progetto, nonostante io abbia sempre voluto estenderlo anche ad altri settori. Alla fine dieci organizzazioni diverse – lo SculptureCenter, Printed Matter, Studiolo, ecc. – hanno finito per subaffittare spazi molto piccoli l'uno dall'altro. Nella maggior parte dei casi non c'è stata alcuna alterazione fisica dello spazio, ma si è trattato semplicemente del trasferimento legale di una porzione di quel luogo o del suo diritto di utilizzo. M'interessava molto lavorare con questi concetti astratti, delineati legalmente, come m'incuriosiva la possibilità di creare una struttura astratta attraverso il linguaggio, grazie a una procedura puramente legale. Credo che il progetto sulla Coca-Cola e la Pepsi sia nato da questa necessità: cercare di definire un'entità fisica con un linguaggio puramente legale.

**KMG:** *Ho sempre pensato che le ricette dei vari marchi di cola venissero tenute strettamente segrete, come le hai avute?*

**SR:** Una macchina riscalda un composto o una miscela a una temperatura molto bassa, per esempio un grado centigrado al minuto, e mentre il tutto si riscalda, ogni composto ha un punto diverso di ebollizione, quindi i diversi elementi gradualmente evaporano. Questa procedura è accoppiata a uno spettrometro di massa che mentre il composto è in ebollizione spara ioni nella miscela per creare frammenti ionizzati che possano poi essere misurati in base al loro peso in modo da identificarne i singoli elementi.

**KMG:** *Hai collaborato con un avvocato alla stesura del brevetto?*

**SR:** Il California Lawyers for the Arts mi ha confermato che sostanzialmente nessuno avrebbe mai accettato di lavorare con me a questo progetto, così ho finito per scrivere da solo l'intero brevetto. Mi era già capitato di scrivere brevetti in passato, quindi ne conosco la struttura e questo è un aspetto del lavoro che m'interessa molto. Trovo che sia simile a un linguaggio di programmazione: è esecutivo, quindi tutto ciò che dici all'interno di un contesto legale diventa vero solo in virtù di averlo detto. Lo vedo come uno strumento concreto per creare un'entità attraverso il linguaggio.

**KMG:** *Su un'altra parete presenti le formule che rappresentano la composizione fisica delle due bibite e che, unite alle fragranze di vecchie chiavi e monete poste sul pavimento, formano una triangolazione molto forte.*

**SR:** Il lavoro sull'odore delle chiavi e delle monete è nato in modo autonomo rispetto al progetto dei brevetti. Ho realizzato solo in seguito che, se sono nati contemporaneamente, è perché in realtà penso anche alla Coca-Cola e alla Pepsi come se fossero numeri, come algoritmi che immagazzinano informazioni. Da un certo punto di vista la composizione fisica della Coca-Cola è solo un algoritmo che immagazzina dei valori. Uno degli interessi principali alla base di questa ricerca ha a che fare con la condizione di capitalizzazione, di derivati, di parametri spaziali e ontologici diversi che pongono questioni riguardo al ruolo di un oggetto in un'economia altamente astratta.

**KMG:** *Puoi spiegarci come questa lettura economica si inserisce nei tuoi progetti?*

**SR:** Nel 2007-2008 c'è stata una crisi ipotecaria. Le ipoteche sono astrazioni di lotti di terra esistenti. Dunque le ipoteche diventano stagnanti e ne scaturisce un derivato: c'è uno scambio del credito basato su questo titolo derivativo che innesca un nuovo livello di speculazione. Puoi credere che a livello più alto si tratti di pura astrazione, pensare che non ci sia relazione con il livello più basso, ma non è esattamente vero. C'è comunque un rapporto e trovo interessante analizzare questa relazione materiale, cercando d'identificare cos'è concretamente questo fatto reale all'inizio, dove prendono vita queste gigantesche transazioni solo apparentemente astratte. Le persone pensano che un credito derivato nato da un credito ipotecario sia pura astrazione, pensano che non esista, ma io trovo che sia più interessante e, forse, più produttivo affermare che esista realmente, guardando ai parametri di questo oggetto o di questa entità.

**KMG:** *In particolare, che ruolo hanno i metalli e le chiavi in questa equazione?*

**SR:** Il metallo ritorna all'idea di astrazione finanziaria e all'idea di moneta, che è stata in assoluto uno dei primi metodi di astrazione nella cultura. Lo sviluppo delle monete ha permesso di equiparare cose altrimenti incommensurabili, addirittura opposte. Ovviamente la moneta ha anche una forma fisica, tangibile, e ha anche un odore. Il suo odore in realtà è il risultato della sua interazione con il corpo: una moneta nuova non ha nessun odore, ma con il continuo contatto il grasso e il sudore delle mani della gente che tocca il metallo causa diversi processi di ionizzazione, e questo è l'odore che senti quando annusi una vecchia chiave o una vecchia moneta.

**KMG:** *Le monete possiedono un codice che ne determina il valore e il valore delle chiavi sta nei codici che detengono per l'accesso...*

**SR:** Sì entrambe hanno questa proprietà dualistica: sono sia meccanismi che operano all'interno di una sfera simbolica, che ammassi di materia che interagiscono con il corpo. M'interessava prendere questo aspetto e sintetizzarlo, prendere l'aria su una mano, in quel punto in cui riesci a sentire l'odore della degradazione della pelle, prendere questi codici di composti differenti e trasformarli in una fragranza sintetica. Trovo sia un modo molto interessante di pensare all'entità dello scambio.

**KMG:** *A quali nuovi progetti stai lavorando?*

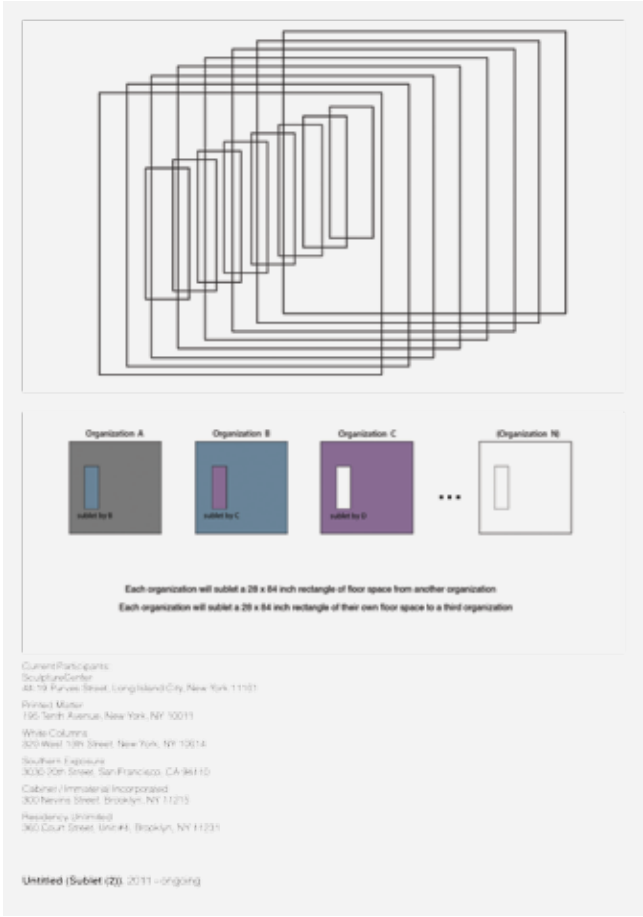
**SR:** Uno dei lavori che presenterò da Jessica Silverman questo autunno è una sorta di petrolio greggio ricostituito. Il greggio è in realtà una delle miscele più complesse della terra da analizzare per capire quali elementi lo compongano. Ci sono stati vari studi che hanno tentato di studiarne la composizione da cui sono risultate innumerevoli variazioni. Spesso ne usano una certa percentuale nel combustibile per aerei, nella plastica, nel gasolio, nel cherosene, nella vaselina e in cose di questo genere... quindi quello che ho intenzione di fare è prendere tutte queste sostanze in determinate proporzioni, ricombinarle e mixarle per tornare a ricostituire una sostanza simile al petrolio greggio. Poi, per un altro progetto, sto anche pensando di campionare l'aria della galleria per farne un detergente che odori come l'aria di quello spazio, un po' come la fragranza delle monete.

**KMG:** *Quasi come fosse l'equivalente olfattivo della cancellazione del rumore.*

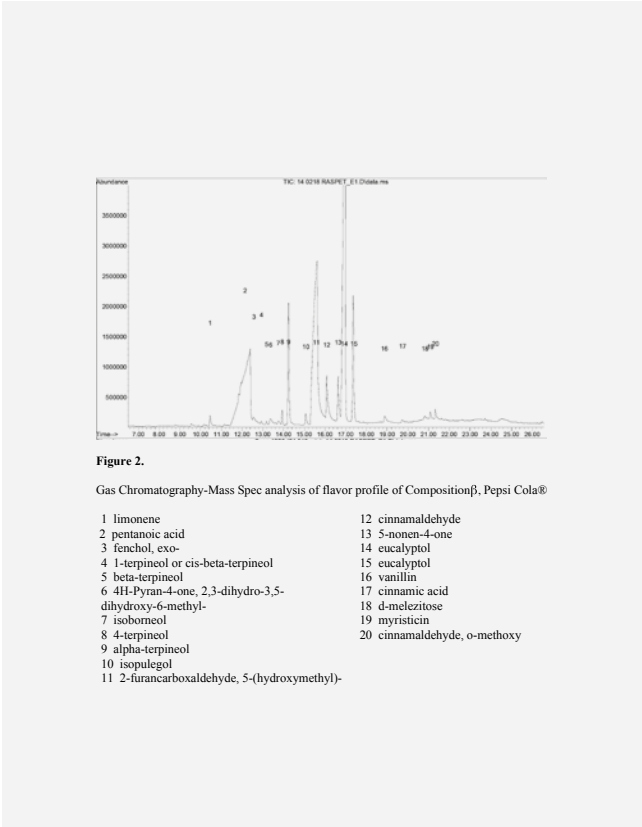
**SR:** Sì, ma penso che sarà interessante perché ne intensificherà l'odore. Quando analizzi una sostanza in laboratorio, finisci sempre per perdere un paio di elementi che potrebbero essere responsabili di quel determinato odore. C'è sempre una sorta di variazione che deriva dal metodo con cui analizziamo quella sostanza. In questo caso camperò un profilo olfattivo dell'aria nello spazio della galleria e ne creerò una fragranza condensata in modo che quando puliscono le superfici questo detergente produca una versione intensificata dell'odore che è già nello spazio.

**KMG:** *Quando ho visto il tuo lavoro per la prima volta, creavi prevalentemente sculture con elementi sospesi nel gel per capelli. Come sei arrivato a sperimentare con queste strutture immateriali?*

**SR:** Nel 2007 e nel 2008 ero molto interessato alle immagini e alla *stock photography*, poi sono successe un paio di cose. Prima di tutto, quell'argomento mi aveva decisamente stancato, e nel mondo dell'arte c'era ormai questa saturazione d'immagini provenienti da archivi online, così ho deciso d'intraprendere una direzione diversa. Per un periodo ho creato banner, e sculture composte da gel per capelli. Più di recente, negli ultimi anni, mi sono concentrato sui contratti, sul *legalese*, sui lavori testuali, e sempre negli ultimi anni ho scoperto nelle equazioni chimiche e nelle formule di prodotti un modo per approfondire il mio interesse per materiali e sostanze che circolano nella cultura, nei cosmetici, e in molto altro. È nella chimica che le cose diventano più concrete e più astratte al tempo stesso. Curiosamente, dal punto di vista fenomenologico, oltre all'odore, non hai modo di riconoscere la differenza tra il glicole propilenico e il sodio laurilettere solfato a meno che non c'infili le mani dentro. Puoi solo annusarne le diversità, altrimenti necessiti di un intero sistema di linguaggio per gestirne le differenze.



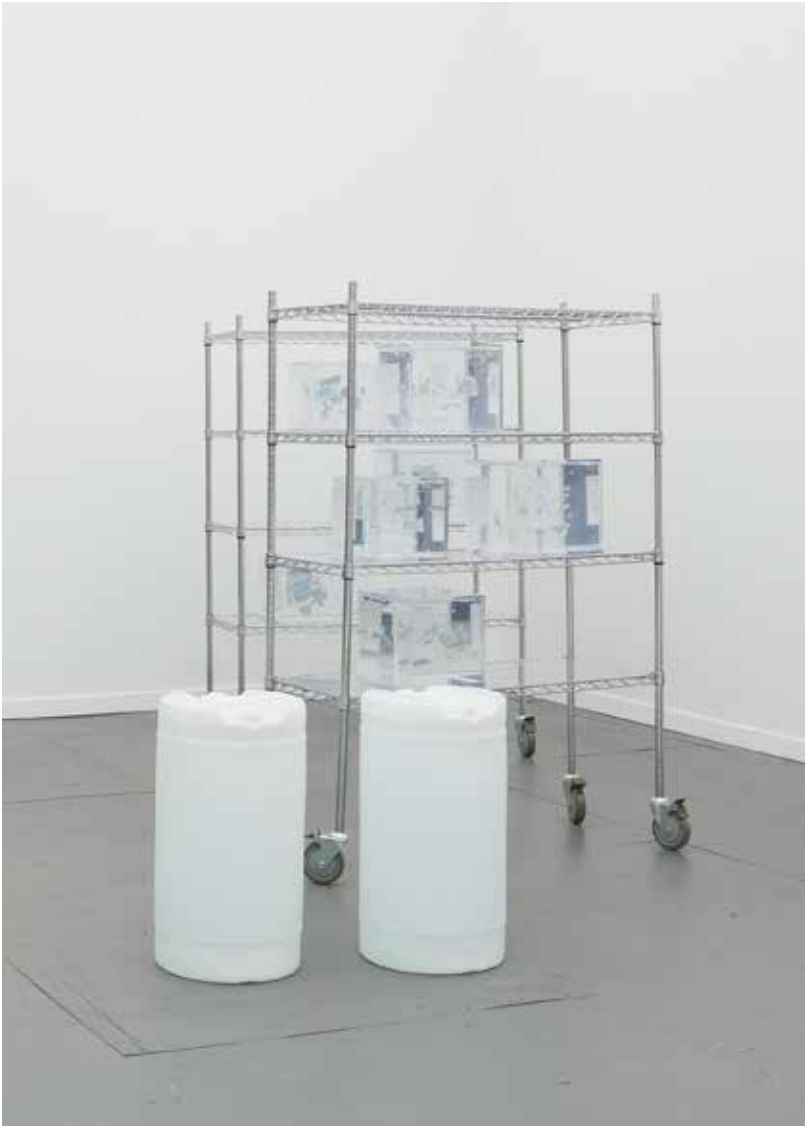
Untitled (Sublet(2)), 2011-ongoing. Courtesy: the artist



A Composition of Matter Consisting of the Difference Between Two Compositions of Matter (excerpt, Figure 2: gas chromatography-mass spectrometry analysis of Primary Formulation beta); US patent application for a material consisting of the difference between Coca-Cola® and PepsiCola®, 2012-2014. Courtesy: the artist



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//(Phantom Ringtone), 2013. Courtesy: the artist



Untitled (Isobutyl Formate), 2012-2013 and Registration (5a.), 2013, installation view at Frieze, New York, 2013. Courtesy: the artist and Société, Berlin