

Essay: Humans are endlessly creative when it comes to intervening in the natural world for economic gain. The work of COOKING SECTIONS, GOLDIN+SENNEBY and SEAN RASPET and SHENGPING ZHENG shows how eco-industrial realities can be stranger than fiction *by Gary Zhexi Zhang*

THE WOOD FOR THE TREES

Sean Raspet and
Shengping Zheng,
Hyperflor® (2-benzyl-1,
3-dioxan-5-one),
2018–19, 2-benzyl-1,
3-dioxan-5-one
molecule, packaged
view. Courtesy:
the artists and Bürkle
GmbH, Berlin

In late January, I attended a private event at the offices of a renowned New York art-collector couple above a Louis Vuitton store in downtown Manhattan. The occasion was organized by the magazine *Triple Canopy* to launch a new publishing commission by the conceptual artists Goldin+Senneby and the novelist Katie Kitamura called *Crying Pine Tree* (2018–ongoing). The previous evening, the magazine's editor had unveiled the 'publication' in question: a box of four genetically modified pine-tree saplings.

Goldin+Senneby began their conversation by asking audience members to join hands – physical contact between strangers in New York being merely awkward back then. Asking us to focus on the sensation of heat transferring between our bodies, the artists recounted a visit they had made to a university in Florida where scientists were inducing loblolly pines to overproduce resinous sap, or oleoresin, as a possible means of manufacturing biofuel. Oleoresin is a terpene: an organic compound found in the rosin that violinists use on their bow strings and in the turpentine used to thin oil paints, amongst other things. In recent years, oleoresin's most avid researcher has been the US Navy, which filed patents for a series of terpene-based jet fuels in 2016. The artists were drawn to the situation, they explained, because of Jakob Senneby's autoimmune condition, multiple sclerosis (MS). One of the symptoms of MS is a heightened sensitivity to ambient temperature, which becomes more acute as the condition progresses; Senneby wryly recounted a delirious visit to the research forest, during which he became overwhelmed by the southern heat.

The native loblolly pine is the most widely cultivated timber species in the southern US, favoured for its rapid growth. The tree naturally exudes oleoresin as a defence mechanism against insects, fungi and other parasites. When critters like the southern pine beetle – the region's most destructive native forest pest – bore into the pine in order to build their 'nuptial chamber', the tree produces resin to 'pitch out' the beetle, encasing it in a thick, gummy fluid that hardens into creamy globules, which protrude from the bark like bloated fungi. It is this response that researchers are trying to send into overdrive, turning an autoimmune mechanism into a sap factory. The oleoresin is so toxic that the tree holds it in specialized compartments to avoid poisoning itself. We were told that *Triple Canopy's*

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Goldin+Senneby, *Crying Pine Tree*, 2018–ongoing, performance documentation, with Katie Kitamura (novelist) and Alexander Provan (editor and permittee of GE loblolly pines), *Triple Canopy*, New York, 2020. Courtesy: the artists; photograph: Meredith Morran

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Goldin+Senneby, *Crying Pine Tree*, 2018–ongoing, research still, with Gary Peter (forest genomicist), 2018. Courtesy: the artists

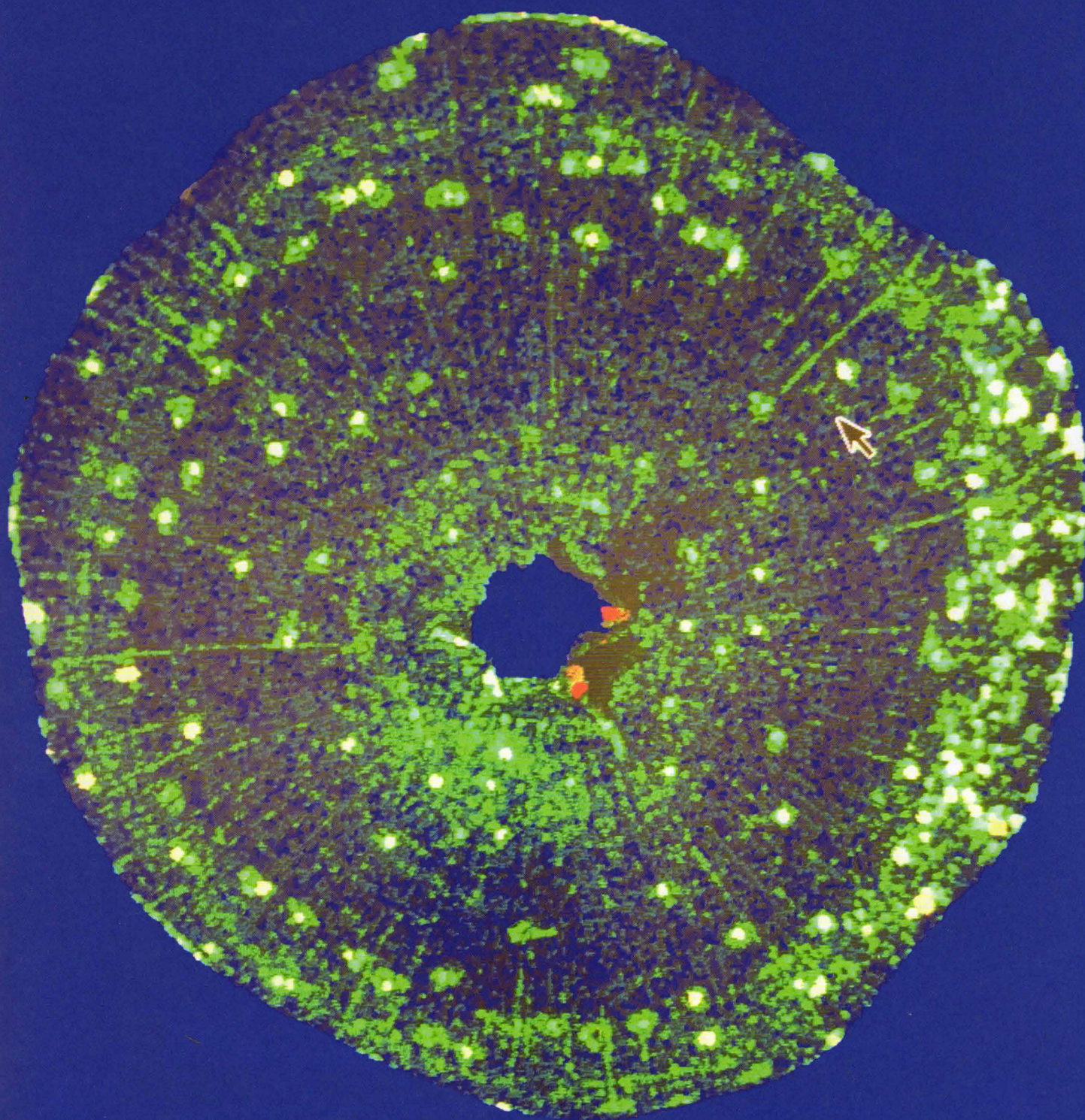
office had to be retrofitted and certified for the biosafety levels necessary to contain the genetically modified pines.

For her part of the collaboration, Kitamura is writing a metafictional novel in which a venture capitalist with an autoimmune condition approaches a geneticist with a plan to synthesize a new class of 'liquid gold'. To date, Kitamura has completed the novel's opening chapter, with new installments to be released over the years as the saplings grow.

Weaving trees, laboratory researchers and novelists into an eco-industrial conspiracy feels of a piece with Goldin+Senneby's previous work, much of which has delved into the abstract machinations of global finance capitalism. In projects such as *Headless* (2007–15) – an expansive exploration of offshore finance that culminated in a ghost-written docufictional mystery novel – the artists themselves remained studiously elusive, present in name only, typically sending 'emissaries' to speak in their place. (I assumed the role of one of these emissaries in Shanghai back in 2017, but it wasn't until three years later, in New York, with a stranger's fingers held in my palm, that I encountered the duo in person.) Given this, it was all the more surprising to find the intimate corporeality of what the artists refer to as their 'joint subjectivity' so stickily, albeit obliquely, present amidst the pines.

With one foot in the imaginary and the other toeing the actual, parafictional artworks open up a world of multiple and simultaneous meanings. Goldin+Senneby's practice is reminiscent of what the philosophers Gilles Deleuze and Félix Guattari, in *A Thousand Plateaus* (1980), call 'nomad science': a vagabond approach to knowledge that eschews established classifications and metrics and pulls, instead, on a thread of inquiry until the whole tapestry begins to unravel. The story of the saplings is both real and fictional – not only because Kitamura is writing them into a novel but because the cyborg pines have become desirous protagonists in the narrative of technoscientific progress. Performatively entangling artists, writer and vegetation, *Crying Pine Trees* assumes the form of a consensual fiction: an object of collective belief that holds incommensurable worlds together, drawing emotional, ecological, pathological and technological realities into a single view.





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What happens when the artificial lens of objectivity breaks?

Sean Raspet and Shengping Zheng's *Hyperflor*® (2-benzyl-1, 3-dioxan-5-one) (2018–19) takes the synthetic nature of parafiction further still through the creation of a new molecule, a fragrance to be commercialized under the brand name 'Hyperflor'. Invisible yet immersive, Raspet describes the scent as something between flower petals and overripe vegetation. As part of the 2019 Okayama Art Summit, *Hyperflor*® (2-benzyl-1, 3-dioxan-5-one) was 'exhibited' via electronic diffusers placed across the city to function as 'scene transitions' between different spaces. The work itself has a similarly transitional conceptual identity: a fundamentally creative act (the synthesis of a new molecule); a legal-commercial entity (patent pending); and an artwork that operates materially, conceptually and economically. The work's title indicates these multiple identities: the brand name *Hyperflor*®; the chemical name '2-benzyl-1, 3-dioxan-5-one' (a verbal blueprint for its molecular structure); and the equal billing of its creators, Raspet (artist, sometimes chemist) and Zheng (chemist, here artist). Every aspect of *Hyperflor*® (2-benzyl-1, 3-dioxan-5-one) seems to resist its containment as an artwork, but it is only through its status as such that these multiple identities are brought into meaningful correlation.

There is, of course, a suspicion of a conceptual sleight of hand here: *Hyperflor*®'s parafictional, artistic quality is part and parcel of its commercial brand, its aspirations towards an economy beyond the art world. In any case, would a commercially viable molecule really wait for the midwifery of an artist? But, in a world in which thousands of harebrained products are launched every week, the commercial fortunes of *Hyperflor*® seem far less salient than the ways in which the work stages the relation between property and authorship, sign and matter.

Much has been written in recent years about the porosity of the boundaries by which our world is demarcated and given form, whether scientific taxa or philosophical categories. The very notion of autoimmunity draws an arbitrary, imaginary line between self and nonself, with autoimmune disease often framed as *the body at war with itself*. Scientific knowledge demands its own share of consensual fictions. As Lorraine Daston and Peter Galison note in their history of *Objectivity* (2007): 'All sciences must deal with the problem of selecting and constituting "working objects", as opposed to too plentiful and too various natural objects.' These idealized forms fill taxonomic atlases with representations of flora and fauna that stand in for a species but resemble no specimen in particular; the resulting 'working object' is a communal reference that conjures a shared reality. What interests me in the work of Raspet and Zheng and Goldin+Senneby is how the indeterminate status of art might help us orientate ourselves within a formless – or, perhaps,

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Sean Raspet with Kiara Eldred and Shengping Zheng, 'New Molecules & Stem Cell Retinoid Screen', 2019, exhibition view, Empty Gallery, Hong Kong. Courtesy: the artists and Empty Gallery, Hong Kong

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Sean Raspet and Shengping Zheng, *Hyperflor*® (2-benzyl-1, 3-dioxan-5-one), 2018–19, installation view, Okayama Art Summit 2019. Courtesy: the artists

over-informed – world. The pine sapling and fragrance molecule *make sense* of multiple abstract notions, much as the surprising coolness of a stranger's hand surfaces our own social and metabolic embodiment.

What happens when the artificial lens of objectivity breaks? In a way, this is what happened in the laboratory of Ana Soto and Carlos Sonnenschein, cell biologists at Tufts University School of Medicine who were researching oestrogen-sensitive cells in the late 1980s. They were perplexed to find that the cell cultures in their lab were proliferating before oestrogen had been introduced and spent four months searching for the source of the hormone before realizing that the cell growth was caused by the test tubes in which the cultures were stored. The culprit was a chemical plasticizer used by the manufacturer, Corning, to make the test tubes more impact resistant. Soto and Sonnenschein presented Corning with their discovery, only to be told that the ingredient was a trade secret. As Soto later recounted in a 2009 interview with *Science Watch*: 'We spent another year purifying the "trade secret".' (Nonylphenol, the synthetic compound in question, was found to be a hazardous xenoestrogen – a substance that mimics the effects of oestrogen produced by the body; its use has since been prohibited in Europe.) An accidental encounter with an errant molecule destabilizes the epistemic order; here, the test tube, medium of clinical objectivity par excellence, becomes the unreliable narrator in a tale of legal machinations and perverted nature.

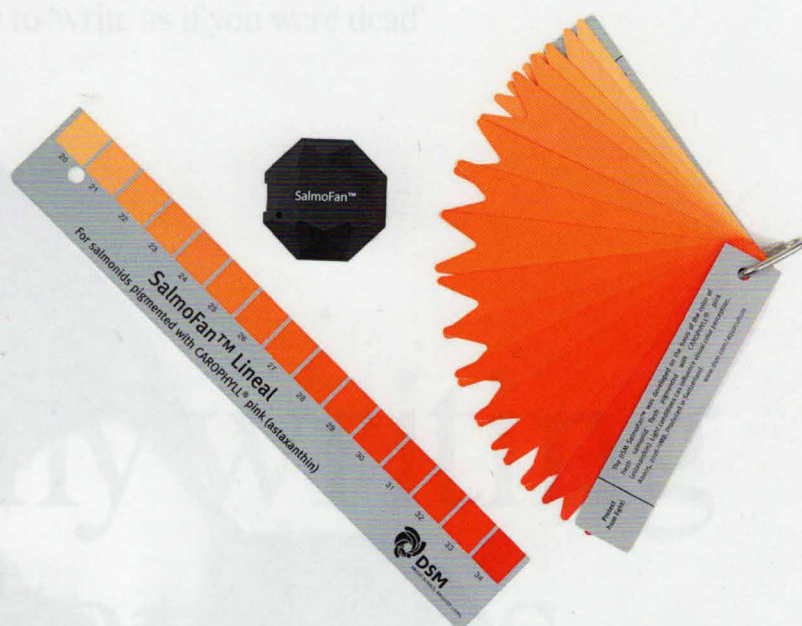


Soto and Sonnenschein's discovery was picked up by another nomad scientist, Theo Colborn, an ecologist and pioneer in the field of endocrine disruption: a term she coined to define her research into the human and environmental effects of hormone-disrupting chemicals. After a career as a pharmacist, in 1985 Colborn earned her PhD in zoology at the age of 58 and found her calling studying the health of the Great Lakes on the US-Canadian border. There, she found an inexplicable range of abnormalities in the ecosystem: sterile minks, dying eaglets and sick human babies. In *Fractivism: Corporate Bodies and Chemical Bonds* (2018), environmental scholar Sara Wylie offers a vivid account of how Colborn refigured swathes of data dispersed across multiple sciences – zoology, pharmacology, epidemiology, endocrinology, avian biology – to form a coherent new field. Ultimately, Colborn found that the damaging hormonal effects of certain industrial molecules were travelling up the food chain, from prey to predator, as well as to offspring and humans. Wylie notes that Colborn used the language of smell to convey her approach: '[She] described herself as feeling "like a beagle [...] following its nose".' Her embodied trail cut through the map of disciplinary boundaries, just as the molecules she pursued passed ambivalently through the legal categories – pests, wildlife, humans and environments – that regulated their use.

For artists, nomadic investigations often revolve around evidentiary artefacts that bind apparently disparate truths. The work of artist duo Cooking Sections (Daniel Fernández Pascual and Alon Schwabe) explores the molecular landscapes of what sociologist Hannah Landecker describes as the 'industrialization of metabolism', in which human, animal and microbial interrelations are transformed by industrialized food production. 'Salmon: A Red Herring', their presently postponed exhibition at Tate Modern, playfully dissects the modern salmon industry, in which farmed salmon are fed pellets containing red astaxanthin – a pigment that occurs in the shrimp and krill that are wild salmon's natural diet – in order to metabolize its pinkish colour. As it turns out, commercial salmon is just another consensual fiction. The vast majority of the salmon we eat is not salmon(-coloured) at all, but grey. In China, rainbow trout is often sold as salmon because its pink flesh resembles 'salmon' more closely than salmon itself. In a demonstration of fiction regulating fact, the Chinese government ruled in 2018 that trout could be legally labelled as 'salmon' because the two fish belong to the same family, Salmonidae.

At once absurd and actual, a central artefact in the project is the SalmoFan™, a patented colour chart used to assess the salmonness of salmon in order to certify its acceptability to different markets. ('Japanese Salmon' is a deep red, while 'London Salmon' is a lighter shade, between orange and pink.) In a twist of industrial inheritance, the proprietor of the SalmoFan™ and the primary manufacturer of synthetic astaxanthin is DSM, a multinational that owes its initials to its beginnings as the Dutch state mining company. Following Colborn's lead, Cooking Sections trace a molecule through the food chain of postindustrial metabolism, in which ideal form and matter (or meat) regulate one another through cultural and chemical bonds.

The ecological and political uncertainty of recent years has led to a proliferation of practices that invoke speculative engagements with the non-human other – whether animal, mineral or supernatural. Perhaps it's a reactionary



Cooking Sections, SalmoFan™, 2020, a patented colour chart used to assess the salmonness of salmon, from 'Salmon: A Red Herring', Tate Modern, London (postponed). Courtesy: the artists and DSM

impulse against the aesthetics of riskless speculation – a bourgeois retreat from the 'human' realm when it is in dire need of contestation – but I find myself instead increasingly drawn to thinking about the distinctly anthropogenic systems that constitute the world as we know it, such as legal practice, supply chains and insurance. Consider, for instance, the proliferation of timescales that operate vertiginously through a city skyscraper, from the precarious labour of maintenance staff to the micro-temporalities of high-frequency financial trading to the slow subsidence of the building's foundations into the earth – as is the case in Manhattan. These past weeks, in lockdown in my apartment across the East River, I have been able to see New York's financial district more sharply than ever, tall and empty against the hazeless sky. The scene is steeped in consensual fictions, prisms that pull reality into a space where the light bends, relationships multiply and different things come to matter **END**

Gary Zhexi Zhang is an artist. In October, his solo exhibition 'Fud' will open at Bloc Projects, Sheffield, UK, in collaboration with Arts Catalyst. He lives in New York, USA.

Cooking Sections (Daniel Fernández Pascual and Alon Schwabe) is a duo of spatial practitioners. In 2020, they had a solo exhibition at Bonniers Konsthall, Stockholm, Sweden. Later this year, they will have solo shows at Tate Britain, London, UK, and SALT Beyoğlu, Istanbul, Turkey, as well as new commissions for Prospect.5, New Orleans, USA, and the Taipei Biennial, Taiwan. They live in London.

Goldin + Senneby is an artist subject. In 2019, they had a solo exhibition at e-flux, New York, USA. In 2026, their public artwork *Eternal Employment* will be inaugurated at Korsvägen train station, Gothenburg, Sweden. They live in Stockholm, Sweden.

Sean Raspet is an artist, flavour and fragrance chemist and co-founder of the algae-based food company Nonfood. He lives in Los Angeles and Detroit, USA.