



EVERYTHING IS A LAB



Doing Ordinary Science



Edited by
Mathew Arthur

EVERYTHING IS A LAB

PRAISE FOR *EVERYTHING IS A LAB*

The book works as exercises in writing and being together—it registers with care the circulation of practices, techniques, and affects that define the many labs through which we articulate what a community of sensing and thinking is. The book participates in the past years of research addressing labs beyond the strictly scientific—while also thus expanding the very insights into what are the situated spaces and shared affects of knowing and theorising.

—Jussi Parikka, co-author of *The Lab Book: Situated Practices in Media Studies*

Taking seriously the proposition that science is ordinary, this dazzling book encourages us to consider how we do and might make worlds with care, courage and imagination. It pushes the boundaries of theory and practice, collecting together experimental writing and write-ups with beautiful images from collaborative workshops, pulling us into the worlds of bees, inviting us to turn ourselves into sensors, providing us with guides to compose new scents and more-than-human substances—and lots more besides. It is a treasure trove of a book, designed to delight and inspire researchers across STS and affect studies.

—Rebecca Coleman, author of *Glitterworlds: The Future Politics of a Ubiquitous Thing*

IMBRICATE!

Series Editors: Gregory J. Seigworth, Mathew Arthur, and Wendy J. Truran

As an open access publisher, Imbricate! will always foster and promote rambunctious bloom-spaces for those who study affect over the dulling hum of any specific orthodoxy. All Imbricate! releases are available freely online and for purchase in print. The principal aim of Imbricate! is to create a place in and around affect studies for the generative ‘overlap’ of voices, practices, methods, matters, modes and more. Imbricate! publishes work that gauges how critical/creative practices can bring together discourses, worlds, sensations, sensibilities, and atmospheres that raise questions and perhaps unsettle what counts as ‘fit’ (and ‘unfit’) within and across shifting disciplinary contours. Imbricate! Press seeks to be a place of publication that lifts up and nestles in amongst those folks (and ideas) that pursue imaginative and expansive configurations of pre-existing patterns of academic exploration.

EVERYTHING IS A LAB

Doing Ordinary Science


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Mathew Arthur

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“Why call it a lab?” We both know it’s not because of latex gloves, CRISPR, or people hunched over antiseptic machines. There’s a way of asking that signals the mutuality of knowing: like an inside joke or being in on the same bad reality plotline. It’s upspeak or a tone taken. But also how a question cracks itself open as a self-diagnosis. Lab-tested. Lab-grown. A photo lab. Where realities are cleaved into tumors and pills or developed into snapshots that get passed around as a prognosis of everything. But a kitchen is a lab. Or a bed. Or a sidewalk walked over and again across harsh or subtle seasons and tempos of disrepair. Contaminated spaces might not shell out repeatable truths—but practice happens here. The bubbling-up of yeasty dough, the soft or hard coordination of lover’s bodies, the same old house in freak weather or the glow of dusk light. Each time a new technology.

Everything is a lab.



From Ordinary Affects to Ordinary Science

MATHEW ARTHUR

The technical, textual, organic, historical, formal, mythic, economic, and political dimensions of entities, actions, and worlds implode in the gravity well of technoscience—or perhaps of any world massive enough to bend our attention, warp our certainties, and sustain our lives.

—Donna Haraway, *Modest Witness*

Ordinary affects are the varied, surging capacities to affect and to be affected...that catch people up in something that feels like *something*.

—Kathleen Stewart, *Ordinary Affects*

The strange hothouses in which researchers make knowledge—study, archive, seminar room, laboratory, observatory—are just highly structured venues for channeling and focusing something we experience all the time: the way thinking feels.

—Donovan O. Schaefer, *Wild Experiment*

This volume is a scrapbook and an experiment. It collects the artifacts, written and otherwise, of a year's worth of public workshops that put science and technology studies (STS) and affect studies together. We are Doing STS,¹ a small member-funded public education non-profit in Vancouver, Canada run by graduate students and non-academics. Our events coalesced around two big ideas. We borrowed “implosion”

1. See <https://doingsts.com>.

from Donna Haraway (1997, 68) and Joseph Dumit (2014) to consider how histories, materialities, and public moods get packed into ordinary objects and habits. Inspired by Kathleen Stewart (2011), we practiced writing and making together to cultivate “atmospheric attunements,” catching the world taking uncertain shape as relationships that matter. Crucially, we attended to how teasing things or words apart and putting them together makes something to notice and act on—to care for (Puig de la Bellacasa, 2017). Looking to STS in its most rangy sense as situated, feminist, multispecies, and Indigenous or other non-Western methods and sensibilities for approaching technoscience and to affect at its most ordinary as circuits of more-than-human feeling and movement (or impasse), our weekly WriteLabs and monthly workshops took on a rhythm of imploding and composing. This meant honing theory literacies in order to notice how the world has been already composed. It meant writing, of course, but also critical making. Through zinemaking, collaging, foraging, tincturing, fermenting, tasting, perfuming, smelling, and walking together, we “craft[ed] with matter” (Papadopoulos 2010) to materialize alternative futures.

Doing STS centers and develops methods of care. Pragmatically, this means caring for the tools, materials, animals, plants, and microbes that show up in the more-than-human contact zones of our shared practice. It also means caring for each other: attending to the multiple histories, concepts, technologies, and bodies that inflect our shared work. We go slow and practice caution about what worlds our research helps to make or unmake. STS and affect studies work often require access to paywalled articles or travel to conferences. Care also includes sharing money, food, transportation, gear, and pirated academic resources like meeting rooms or university library passwords. Our care methods highlight the performativity of practice: how what we do tends some relationships and neglects others. In this way, care signals the inseparabil-

ity of knowledge work and everyday life amidst the economic, political, and ecological pressures that inform or impossibilize ways of living and studying together. We work to unsettle the taken-for-granted of science and tech knowledge production that leave little space for neurodiversity, chronic illness, poverty, Blackness, indigeneity, and gender and sexual difference. We turn instead to atmospheres of living and pay attention to vibes and gut feelings.

For decades, Indigenous communities here have known the gut-wrenching absence of kin forcibly removed to Indian Residential Schools. Met with overcrowding, filth, starvation, and nonconsensual medical experiments, many never made it home. Only when radar imaged thousands of graves in the soil here and across Canada was the magnitude of loss registered as a national concern. Ground-penetrating radar is a technology that chains together complex geophysical models and machineries. It is used to assure the integrity of subsurface utilities, prospect for metals and gems, orient self-driving cars, and by China's Yutu rover to probe lunar soil. For the non-expert, how it sees (radargrams and data arrays) is no different from what it effects: faultlines evaded, diamonds mined, terrain mapped, bodies found. This example shows how scientific technicities and everyday literacies are entangled with truth-making and possibilities for action and feeling.

Dimitris Papadopoulos (2018) calls matter the "frontier of colonialism": a site of ongoing scientific, medical, and technological discovery, where material processes are measured, named, and conscripted into larger political, economic, and tech systems of standardization, regulation, surveillance, and so on. He proposes we instead engage in a anticolonial politics of matter, experimenting with changing the material composition of life in ways that delink from knowledge practices that see matter as raw material for enclosure and extraction. Social

and political movements are always about more than just legible social institutions, they also implicate a wide, material, nonhuman world: movements of matter. To practice changing the world, we'll have to reckon with both technoscience and affect—the tools or machines, tech-driven knowledges, material flows, feelings, moods, and methods that articulate mainstream understandings of the world.

Even the most boring facets of everyday life are radically shaped by natural and social sciences and there is a case here for applying STS thinking to non-exceptional things: habits, hobbies, domesticities, the lo-fi, the junk drawer. On the other hand, laboratories and fieldsites are never immune to vicissitudes of living: breakups, bad moods, being hangry or a Karen, the joy of things falling into place, cutting corners, or power-tripping. Science is all about affect (eg. Schaefer 2022). If there's nothing all too exceptional about science, there's nothing banal about the everyday. Even boring objects and routines come with planet-spanning supply chains, layers of technicity, and insider knowledge. They require infrastructures and forms of training or comportment, algorithms and attitudes. One way to access this overwhelming complexity is by caring and being interested. So, we do ordinary science from the kitchen table—from the body, from situated knowledges, from unknowing. Putting STS and affect together shows how emergent global complexities are made and experienced in local practices that include specificity but also messiness, vibes, gut feelings, and mistakes (Law 2004). It bolsters literacies for how the world is being made and how we might make it differently.

I've been cultivating a writerly relationship with yeast as a way into ordinary science. I ferment food scraps and store-bought yeast into alcohol, then carefully tend its conversion via acetobacter microbes into vinegar. It's a months-long

process—and the final fermentation can age for years before its taste matures. There are tools to be used: a hydrometer and refractometer to measure sugar content and alcohol volume; pH strips and rainbow-coloured pH charts; ways to titrate for acid content, thermometers for pasteurization. But most of all it's a labour of tuning into the surrounds—over time, learning what small patterns can be seen in a process that's largely invisible. It's a perfect lab for wrestling the tension between realism and performativity—where, in your own kitchen, you can see how tools and units of measurement, techniques and trained modes of attention, break down when something's off with the weather or a jar wasn't as sanitized as you thought.

In 2023, Doing STS was made up of three labs which correspond to the three sections of this book. WriteLab was a weekly affect-driven theory writing meetup modelled loosely after Dumit's "implosion" and Berlant and Stewart's "Hundreds" (2019). Kathleen Stewart, Donovan O. Schaefer, and Chad Shomura kindly wrote initiating provocations about theory—its textures, animacies, and snares—for our meetings. From 7–9pm on Mondays from March to October, we met to write short bursts of theory about the boring or catastrophic, invisible or cosmic, fads and technologies, things split-second or geologically slow, top-secret or TMI. Afterwards, we walked down the street for happy hour. We called it "BeerLab." Our loud theory-chatter must have been infectious: our server later joined Monday writing. In early June, Sarah Law 婉雯 led a climate mourning workshop. We collaged with dried leaves and petals to "write" about relations with dead and dying matter. Sarah's zine, *Climate Mourning, Soft and Slow* is reproduced here. In July, we were joined by Coleman Nye, Lindsey Freeman, and Amanda Watson for a special edition WriteLab on episodic writing that gets at the haptics and affects of a scene—written while "still feeling the high, exhaustion, boredom, or frustration."

Smellworlds, our second lab, is an ongoing project to work with and develop sensory methods through DIY perfumery and smellwalks. In 2022, I was invited by Erin Manning and Brian Massumi to lead a multi-day workshop around critical fermentation and DIY perfumery at 3Ecologies in northern Quebec. The gathering was an opportunity to grow kindred interests in fermentation and fragrance and assembled an international group of academics. We experimented with practices of fermenting, tincturing, distillation, and perfume formulation and rehearsed new vocabularies of taste and scent across languages and disciplines. My time at 3E sparked a renewed sense that small practices are theory—they can be angled into with neurodiversity, against white supremacy and the violence of settlement, with quiet hunches or big philosophical propositions, as a collaboration or pedagogy. In the momentum of this feeling, *Doing STS* was born. My small booklet for the 3E event, *Smellworlds: A Critical Perfuming Primer* is included here. In August of 2023, Ceall Quinn led *Doing STS* in a pollinator smellwalk. We dabbled and paused in a space of non-instrumental bee noticing alongside Quinn’s accompanying zine (with a map by Lily Demet), learning to “perceive oneself as sensor” and how scent “indexes relational networks and registers differentially across multispecies sensoria.”

Otherwise Tastes was a series of critical herbalism and fermentation workshops that explored the relationship between taste, unseen microbial worlds, ecology, and political formations. Multispecies work is often either abstract or exotic in its empirics. It can require travel for fieldwork, special lab equipment, or access to gatekept institutional relationships. Following species around depends on access to big grants, stable housing, and ample time off work. Instead, we cultivated appetites for theory closer to home: from the kitchen table. Through ordinary tactics of witness like colour, temperature,

visible mould or yeast, carbonation, or scent, we reckoned with the tension between technoscientific settler sovereignties and Indigenous and other approaches to multispecies kin. In May, Hayden Ostrom led us in a critical herbalism workshop. We made oxymel (a vinegar and honey herbal tincture) with foraged and storebought medicinal herbs, learned the basics of six channel and five element theory in Traditional Chinese Medicine, and made connections between Indigenous practice, STS, and syncretisms of TCM and Western biomedicine—imagining multispecies, even planetary meridians and acupuncture points. As Hayden writes, “body is land and the land is our body.” While not written for *Doing STS*, WriteLab regular Rowan Melling’s “My Starter and I as Cyborg Holobiont” kneads sourdough along similar lines: “when a technology is also a living thing, it throws into relief the relational nature of all technology.” Finally, in June, Erin Manning joined us for *Perceptual Ferment*. Erin’s talk on neurodiversity and the immediacy of relation through the figure of vinegar mother (similar to a kombucha scoby) was followed by a DIY fermentation workshop. We worked with packets of industrially-produced yeast as an entrypoint into thinking about histories of epidemiology, pasteurization, and microbial relations. Intensities of taste across always-different microbial cultures offered a way to think about process and perception beyond the human and its categories.

All three labs entail daily acts of care: self-care as integral to writing practice, tending jars of fermenting mash as their microbial flora care for our gut health, or gardening plants whose roots or petals both resource our tinctures or DIY perfumery and lift our moods with scent. But academic productivity risks these relations. Likewise, being sick or sad, tediously skimming off bad yeast, or spending hours lost in a tableful of perfumery ingredients disrupts the tempo of scholarly work. In this way,

rubrics of care help to track interests, attachments, politics, and ways of working. They offer a humble ethical grounding for doing STS and affect work beyond institutional contexts that demand forms of legibility despite the messiness of practice. We can all do ordinary science: feeling, imploding, composing.

All our workshops have been self-funded, free, and open to the public. While academic in tone, we have worked hard to cultivate atmospheres of shared curiosity and non-mastery. None of which would have been possible without the care and collaboration of Studio Utopia and our core Doing STS members: Ceall Quinn, Sarah Law 婉雯, Lily Demet, Hayden Ostrom, and Reuben Jentink. Thanks, too, to our advisory board members for your guidance and care: Vivienne Bozalek, Lindsey A. Freeman, Jonas Fritsch, Kelly Fritsch, Donna J. Haraway, Omar Kasmani, Linda Knight, Dana Luciano, Erin Manning, Andrew Murphie, Natasha Myers, Coleman Nye, Dimitris Papadopoulos, Joseph C. Russo, Donovan O. Schaefer, Gregory J. Seigworth, Chad Shomura, Alexis Shotwell, Nathan Snaza, Stephanie Springgay, Kathleen C. Stewart, Katie Strom, Juanita Sundberg, Sarah E. Truman, Amanda D. Watson, and Jie Yang.

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DOING
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WRITELAB

What can writing do? Writelab is a weekly drop-in theory writing group modeled loosely after Lauren Berlant and Michael S. S. Osofsky's *Imagined Life*. Looking to computational methods across STB and other fields, we'll explore how emerging objects, happenings, and practices texture theory and how thereby texture life. We'll experiment with writing alongside what's being done or being assembled, playing stuck or fading into the background, to produce atmospheres of indeterminacy and relationships that matter.

Monday 7-9pm PST

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WRITELAB

SECTION ONE

DOING
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WRITELAB

What can writing do? WriteLab is a weekly drop-in theory writing group modelled loosely after Lauren Berlant and Katie Stewart's "hundreds" and Joe Dumit's "implosion." Looking to compositional methods across STS and affect studies, we'll explore how everyday objects, happenings, and practices texture theory and how theory textures life. We'll experiment with writing alongside what's taking shape or being assembled, staying stuck or fading into the background, to presence atmospheres of indeterminacy and relationships that matter.

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Imploding and Composing

MATHEW ARTHUR

One of the most agonized questions I get when teaching affect studies is: “how can I do nonrepresentational methods when our currency as academics is writing?” “How can I write with nonhuman affectivities when I don’t have access?” My simple answer: that’s poetry. It’s science and speculative fiction. It’s theology or magic. Really, it’s just a hack at working against the “myself” that is endlessly reproduced. It’s impersonal, about vectors of movement, connection, intensity, impasse. But it’s also intensely personal in the sense that it has stakes in agency and subjectivity, with who or what can act and make meaning. It isn’t that representation has no place. Rather, words accompany other performative potentials: temperature, light, proximity, position. In STS this is called material semiotics—sensibilities and methods of analysis that treat everything in naturecultural worlds as a continuously generated effect of webs of relation (Law 2009).

What can writing do? From March to October of 2023, we met weekly on Monday nights to write. Looking to compositional methods across STS and affect studies, we explored how everyday objects, happenings, and practices texture theory and how theory textures life. We experimented with writing alongside what’s taking shape, being assembled, stay-

ing stuck, or fading into the background in order to presence atmospheres of indeterminacy and hone capacities of noticing. We took compositionality to be both how the world works and an ordinary science: material-semiotic things thrown together or taken apart.

Each week we read aloud from Lauren Berlant and Kathleen Stewart's *Hundreds* then wrote short bursts of theory—not to rip off the form or tone, but to get a feel for theory's unruliness. Often we worked from keywords chosen at random with the roll of a twelve-sided die. We wrote about formats and forms of notation: diagram, user guide, recipe, score, code, tutorial. Or we wrote with a process unfolding across affective and material registers and scales—things intimate or geological, crises like wildfire and bad news, with seasonalities, tides, moods, pets, magic. We asked: “what’s being held together, where are the edges?” Sometimes we just made things up. However aleatory the selection, our prompts occasionally overlapped. Because we talked, took breaks, interrupted each other, left early. WriteLab’s sociality made writing less lonely. Words shared can be savoured or hated-on, detoured or laughed off. The following chapter compiles our writing.

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BEE

- 1. Anaphylaxis
- 2. Antennae
- 3. Cocoon
- 4. Colony
- 5. Drone
- 6. Endangered
- 7. Endotoxin
- 8. Hive
- 9. Invasive
- 10. Monoculture
- 11. Pheromone
- 12. Pollination
- 13. Swarm
- 14. Wasp
- 15. Wax

CODE

- 1. Algorithm
- 2. Array
- 3. Byte
- 4. Cipher
- 5. Command
- 6. Crowdsourcing
- 7. Database
- 8. Diagram
- 9. Double-click
- 10. Format
- 11. Function
- 12. Gesture
- 13. Glitch
- 14. Loop
- 15. Neural Network
- 16. Object
- 17. Password
- 18. Standard
- 19. Variable
- 20. Virtual

GAP

- 1. Cleft
- 2. Cut
- 3. Fascia
- 4. Fissure
- 5. Interstice
- 6. Leak
- 7. Meridian
- 8. Organ
- 9. Pulse

RHYTHM

- 1. Coda
- 2. Equilibrium
- 3. Flow
- 4. Lilt
- 5. Meter
- 6. Movement
- 7. Oscillation
- 8. Pattern
- 9. Polyphony
- 10. Refrain
- 11. Symmetry
- 12. Syncopation
- 13. Tempo
- 14. Texture
- 15. Timing

TRESPASS

- 1. Border
- 2. Breach
- 3. Edges
- 4. Encroach
- 5. Infiltrate
- 6. Interfere
- 7. Property
- 8. Survey

HERE

- 1. Everywhere
- 2. Global
- 3. Juncture
- 4. Landscape
- 5. Local
- 6. Nowadays
- 7. Nowhere
- 8. Place
- 9. Proximity
- 10. Somewhere

LAB

- 1. Anatomy
- 2. Contamination
- 3. Culture
- 4. Examination
- 5. Experiment
- 6. Imaging
- 7. Isolation
- 8. Method
- 9. Microscopic
- 10. Test

HOME

- 1. Intimacy
- 2. Vibes
- 3. Bedroom
- 4. Kitchen
- 5. Migrate
- 6. Dome
- 7. Bird
- 8.

Fumbling

CHAD SHOMURA

Nothing is more annoying than someone with a theory. That means the world is one big irritant. Everyone toys with ideas to find a way through. No one theory will ever do—and that’s the point. The world double-crosses us right when we have a foot in. Theory has no loyalty except to swerves and surprises. Theory surfaces from the pool wherein thought and life are one substance. It attunes to what becomes noticeable, or what deserves notice: the cadence of a room, the off-remark, the pause that hangs in the air. Theory dotes on the magic of things snapping together or falling apart, and much else besides. Theory is not about anything. It is part of the world and does things in it, with it, to it. Explaining things is just one form of theory. Floating questions is another. Writing theory is the work of thinking rather than knowing. It is fumbling around, poking about, unsure of what is afoot and kind of liking it, too. Theory is so over the seemingly fixed and finished. Common sense loves the fixed and finished. It is ignorant of the world yet hardwired into much, from institutions to reflexes. Theory dissolves common sense. Writing theory is a loosening in the name of freedom, in the name of life. Theory aligns us with all that is not but could be. It brings us to a threshold and nudges us to cross without asking if we are ready. It sparks anxiety, but curiosity too.

Scission

DONOVAN O. SCHAEFER

The humanities is still deeply invested in an ontological split between theory and practice. So often we fall for the trap of thinking that by reversing the valence of a binary (privileging the body rather than the mind in the mind/body split, for instance) we have defeated the binary. But we've only consolidated its hold. The theory/practice binary is an iteration of that same surgical scission of body and mind. It relies on the same basic presupposition that what thinks and what takes up space are by nature separate. The world of words and ideas is detached from the world of forests and mountains, skyscrapers and birds' nests, embraces and wounds, machines and tools. Even after centuries of materialism—from old to new and everywhere else—it's still very hard for the humanities to think its way out of the presupposition that ideas make the planet spin, with the writhing mass of bodies and things trailing along behind them. Let's interrupt that thought and reimagine theory as Marx wanted us to see it.

1. Theory is bodily. It shapes and reshapes how we are made as subjects.
2. Theory is material. It grows out of the conditions of production, out of windowless cubicles and wood-paneled rooms, out of university endowments, shredded public funding commitments, and legacy nonprofit grant-makers.
3. Theory is emotional. It changes what we value, what we want, what we abhor, what feels urgent and what feels trivial.

That doesn't mean, of course, that there aren't words without actions, let alone actions without words. But those are extreme ends of a polarity. Most of the time, we live in a complex contact zone where bodies and worlds shape thoughts just as ideas shape bodies and worlds.

Binary

ROWAN MELLING

Binary is bad. We all know this by now. The trouble with knowing something is bad is that bad people can pretend to be good by doing the opposite. Google, for example, is leading the charge to overcome binaries once and for all. A number of years ago they declared “quantum supremacy,” meaning they had built a computer that could perform calculations that digital computers could not. A digital computer switches between ones and zeros in its code (either/or), whereas a quantum computer can exist in multiple digits simultaneously. Google is queering code. What new reality might emerge in this post-binary, post-digital, numerically queer infrastructure? Here’s my anxiety: without the production of a hostile binary between an “us” and Google, will we just glide on Google’s unitary promise of queer code utopia, into a new and horrifying reality of its making? Put differently, is practice (or theory) possible without scission, without the production of some kind of difference? Does theorizing create differences—cuts in reality—that practice can then act on? Sometimes theory stitches reality back together after years of practice rending it apart. Sometimes practice reaches out its body to cross the divide that theorizing has opened at the level of perception. In universities today, people like to talk about “outcomes.” What is “the research” actually doing? What has it achieved that is measurable? This is a neoliberal solution to a binary split between theory and practice, encoded into the humanities in the neoliberal university: your work needs to do something, something measurable. As if words do nothing on their own. The idea here is that words must become more like incantations or spells whose utterance changes reality before our

eyes. In the beginning was the word! I publish my paper and wars cease. I critique the housing market and affordable units rise from the ground. This neoliberal non-binarism might come from the tech world, too. Isn't it extrapolating the logic of code onto the writing of theory? Definitionally, code is writing that acts. It is executable. Code lets individual programmers merge theory and practice without having to act as a collective. Code mediates theory and practice via the machine. We are used to code changing the world now—and tech bros are giddy with their reality-making power. They promise great things. Always just around the corner. Maybe there's a softening of pressure that occurs in some binaries. At least this one: theory and practice. It doesn't have to do everything at once. Words don't have to be big acts. One person doesn't have to do it all. Instead, words might bring together a group, bind it. Reading and writing together, then acting together.

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Glitch

MATHEW ARTHUR

Dual monitors. Midnight. Neon green glow. Everything's dark mode and amphetamine stock tickers. Or it's hot pink glitter graphics, dark academia memes, cottagecore, porn screen-caps, or vaporwave gifs. In the background a slick user interface grays-out its objects and functions, lurking as plain text files on a server somewhere in New Delhi or the Silicon Forest. On one hand, it's a recursion of language: smaller instances of the same problem over and over until it gives way to ones and zeros—magnetic lines drawn on a metal disk. Liquid crystals on a screen. But it also explodes into endless scaffolding: technicians, assembly line workers, rare earth metals and miners, wires bound into meaty conduits that crisscross cities and continents. Code is an opinionated abstraction. Database rows and columns that siphon off bits of world into working terms. Lags that are real life earthquakes, out-dated machinery, or someone digging in the wrong spot. Decisions made in bad moods, planned obsolescence or product drops, trade deals, and policy contexts. Versions of bodies and their possible coordinations built into keywords that replicate and glitch, do things randomly, in series, or at the whim of a swipe.

Overflow

KATHLEEN STEWART

Think of thought as an improv in a perturbed expanse (Cohen 2011). Writing, an overflowing in an intimacy of substance, flesh, trope, and tone, like the flowering hibiscus chaotically in-filling ditches along the road in the Mississippi delta. Expressivities experiment. Multiplicities stand together in a spectral exchange. Then something stands up on its own. A change of season takes place in the fall of a leaf. A self-sensing world activates. Fred Moten writes to be a DJ of a world, Alexis Pauline Gumbs pictures herself touching the skin of sea mammals (2020), minks stretch their necks high to check out the dog and I approaching. Writing here is a way of being a little bit unhinged and in sync with the creative fugitivity in an identity, the intervallic excess of the ordinary, the sensation of an alien thisness that pulls us out of our so-called selves into what's already beside and beyond itself. I write through the poetic condensation and elaboration of patches reiterated. In the process, something gets into me and starts propelling a voice not exactly mine. Moving with the ways of the world, a little chapbook riffs, rigs, amplifies, dog-piles, bleeds into things and backchannels.

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Routines

MORGAINEE LEE

Back pain. Keeping Netflix on next to me while I sleep, worrying about the EMFs but wanting the sound. Needing caffeine. Procrastinating on making a doctor's appointment but diagnosing myself with everything I can find on the internet. Deciding which spiders are okay to stay in the house and which ones gotta go. The intensity of witnessing something violent and terrible—like a child getting pushed to the pavement by a grown man. Tea and its smells, flavours, and sounds, the sensation of it filling your veins. Painting. The Outlook email “ping.” Not wanting to buy a sponge because it's shitty plastic, but buying to-go coffee. Love mediated by WhatsApp, syncing shows. (Are you at 0:00? Three two one play.) Going to the gym, navigating what equipment is available and out of the way. Cats: chatty, hungry, soft. Noisy neighbours. Monitoring the air quality and the weather. The tension of enjoying work but knowing you're not being paid the value of your labour. Picking out outfits. Skincare routines. Film editing: keyboard sounds, short clips and sound bites repeating. Doing dishes just to dirty them again. Walking on the same side of the street. Marking papers. Gamer lights to make it a vibe. Avoiding tasks that seem bigger than they probably are. Procrastinating on sending emails that are probably less scary than they seem. Therapy and encountering an anti-abortion protester with a gruesome-looking sign on the way. Frodo: the creature that lives in the wall of the basement suite.

Headspace

MATHEW ARTHUR

Getting in the right headspace for writing (or anything else) is a tuning of attention that personalizes in the direction of an emergent task. But spreadsheets, outfits of the day, and meal prep eventuate because wider forces set them in motion. Whatever mismatch crops up between the tasks' emergence and the "you" that angles toward it is usually pathology. You're ADD, lazy, or poor. Yet so often it's just a process coordinating. The headspace doesn't know what it wants. Or knows too much as an impediment. So we trick the mind with boring compartments: sitting up straight, chewing on a pen. Sometimes it's someone else's fault, too hot out, or the wifi is down. Other times it's expressed as biology that caffeinates itself into sharper focus. Or as neurobiological flow. But headspace is moody. You have to lean your feelings toward it just right. Hard to do when the world is on fire.

Breath

SARAH LAW 婉雯

If the heat doesn't kill us will it be the smoke? Are you disoriented by the haze covering the mountains? Do you sing out for them when you can't see their edges, ripples, and peaks? Have you been calling for them, like whales trying to find each other? Climate catastrophes are never-ending: wildfire smoke and a hundred dead whales stranding themselves on the shore (Gumbs 2023). Will the ocean remember their bodies breaking? When their hearts (and mine) came apart? Their corpses held up by lapping waves as my language lapses in an attempt to capture grief. Does the ocean remember loss, will it miss them? How can we rise to the challenge to change our breathing, to be undrowned with our marine mammal kin? (Gumbs 2020). How do we learn to breathe alongside them under water? How long can you hold your breath? I wonder how the ocean mourns. Did the sinking project of USS Capitalism reach the cold deep waters once home to these whales? Did they sense a shift in the water, something we don't know how to feel? What changed down there that has yet to surface? Will we know when it's finally time to jump ship? Like the whales, will we organize a mass suicide? We could write and send suicide notes to the CEOs of Chevron, Exxon Mobil, and Tesoro. Or leave our corpses on the steps of banks that refuse fossil fuel divestment. Will we be able to trust each other enough to go through with it? Will I be stranded alone? Or in the company of ninety-nine other

grieving bodies? For the past three years we've been asked to change our breathing. It wasn't long before we discarded our N-95 masks. Doesn't that mean we're already willing to die together?

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Atmosphere

REUBEN JENTINK

The sky is thick, the light a dull orange glow from fires unfathomable, hundreds of kilometers away. It's otherworldly. Still, we go about our days (to work, to school, out for a drink) because there's really nothing else to do. Or we stay inside: call in sick, work from home, stare at the ceiling. We close the windows and scan our phones for air quality ratings before going outdoors. New literacies suddenly normal. Outside, you can feel it in the back of your throat, a sharpness that isn't quite a cough. Some people wear masks on the street again: cloth, N95, spacesuit helmets. As if the atmosphere, the one we are caught up in making, is not our own. Online, we stare at image after image of each new inferno, coming to grips with what should be unimaginable. On the train platform a group of fairies flits about while they wait to be carried downtown. Bright rainbow-coloured hair tied up in pigtails or falling down to the waist. They've got huge glittery platforms on. They're giggling as people walk by. On the street, a warlock rushes past me, his heavy velvet robes dragging along the ground. They're deep blue with golden embroidery at the cuffs. In the orange glow, beads of sweat glisten on his forehead and around his high collar.

Mirage

CEALL QUINN

The cat melted into the carpet again—a plush throw rug. As my friend would have it, a disordered heap. Still early in the year, our unacclimatized bodies override crisp cognition. Out of palms, thoughts flow a steady stream: a different flavour than the mania wrought by caffeine, liquid muffle more than quickening cadence. It feels kind of like a precipice, the cusp of mirage modality to come, those seductive distortions of visual field expressed in the real as parched cedars, desiccated bivalves. Slightly undone, it reminds me of when you said, “hotness is a state of mind.” Flat asses at Wreck beach jiggle in agreement. What say the body?

Contamination

MORGAINE LEE

Oil sits slick on the surface of the sunlit waves, gently bobbing up and doWn. What life exists in the space beTween oil and waTer that repel one another? Are there microworlds in there? How many people did it take to pull the biTumen from the depths of the earth? Did they repel one another, too? Maybe they were friendS. If oil and the water met in another time and place would they like each other enough to touch? For now, the oil is not where it belongs: out of place, unwelcome and crUde. But it's quiet here, floating on the sea without the responsibility to fuel cars, planes, and boats like the one that tipped over and spilled. There are places where oil bElongs. At least that's what some humans think.

PFAS

PET

BPA

PVC

But oil always seems to find its way into the wrong place. A straw in a sea turtle's throat, a glistening rainbow in someone's carport, or a plastic bag dangling on a cherry blossom branch. It might age into microplastic, filling up our huManness with its unalive dangers. If the spill was on land, it might feed a hungry funGus. It might break down to its most intimate components and be made anew as a mushroom in a Stamets' experiment.¹ But this is not an oil slick's fate. Instead, it is just here, floating on the ocEan alone.

1. For more on mycoremediation, see <https://paulstamets.com/mycorestoration/the-petroleum-problem>.

Heatwave

MATHEW ARTHUR

Heat rises off the asphalt as wavy distortions. The big irony is that we're always stuck in a car when it hits. The contact high of humidity and hotness felt as thighs stuck or peeling off vinyl seats, recirculated air, a dry cough of exhaust. Hydrofluorocarbons waft everywhere, making bad weather worse. The AC is broken or amped up. Waves of heat move machines and bodies. Weather patterns. Traffic patterns. Old people and shut-ins die alone behind tinfoiled windows or sun-bleached curtains. Climate change stretches out the delirium of summer. Seasons blur and languish. The erotics of heat work up fervor—for beach days and day-drinking or the kind of dizzying nausea even water or high SPF can't mend. Tanlines grid across bodies and boulevards. Pinkish skin and sunburnt lawns meet the extravagance of money where everything is still shaded and pale, lush and overwatered. Like generations of wealth, it comes in waves, scorching its surrounds.

Bees

CEALL QUINN

Tarsus. Scopa. Ocelli. Mesosoma. Language articulates anatomy, organizes a way of knowing, precise like the microscope's observation of punctate integument, like opening the genital capsule to locate species. Expertise folds upon itself in a certain enclosure of relation. Another story, another saturation point. Here we might read the casualties of metabolic rift in the statement "save the bees?" Who does the saving? Who is saving whom? Beyond conceptual grasp or capital's subsumption of figure, how might we draw affiliation? Could it flow from evolutionary love stories? Or the places where sensoriums intersect to detect a shared olfactory presence? A nectar-rich blossom. How, riffing on Don McKay (2005, 17), might we consider not what are bees to me, but what am I to bees?

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Flowers

SARAH LAW 婉雯

White lilies sit in a thrifted glass vase on my coffee table. petals fall and wilt, their edges crisping up into folded, self-contained layers. In my living room, I'm surrounded by old bouquets wrapped in string: tied, bound, hung to dry, hung to die. My fingertips are strung out with desperation as I pinch, palm, and flatten petals between the already pollen-covered pages of my heaviest books. I fill tin containers, rinsed-out jam and pasta jars, and takeout containers with pressed and dried flowers—but also with mushrooms, acorns, pine needles, bark. These petals, pollen, stems, leaves, and ferns will never outlast the microplastics that are wrapped in and around my veins, that have sunken and swam into my digestive tract via jasmine green tea bags or the chipped non-stick coating of my favourite pan. But these are things I wish would just stay, things I'm trying to keep. The rhythm of drying and pressing flowers is a practice of self-preservation.

Habitat

CEALL QUINN

Peek out the lenses of compound eye and find abundance in last year's discarded brush. Here, in stem's hollow, generational haven. How do notions of home nest amongst one another? The script of a sunset lover tells me that development and habitat are bound together. A quantitative severing shears urban and its offspring expressed in neat manicured lawns and cookie cutter homes. This making of habitat forecloses inhabitation. Here a lawn mentality occupies the psyche, spreads spatially through the striation of the urban (Lefebvre 1992).

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Invasive

MATHEW ARTHUR

Something spreads prolifically and turns wilds into badlands or healthy tissue malignant. Encroachment firms up where the edges are: of cells, species, countries. Construction noise congeals property lines and bylaws. Or it localizes as a headache or stomach ulcer. Someone's bad breath or handsiness draws an invisible outline called "personal space." A thought intrudes and ramps up to a loop, hyperfocused on some anticipated—but still imaginary—specific. When grafts, stents, and bits of metal are lodged in the body laparoscopically we call it "minimally invasive" because we're used to it. Leaned over a beige divider, a co-worker's prying questions harden the space between cubicles. "That's a boundary for me." Someone else is eating egg salad for lunch or wearing one too many sprays of drugstore perfume. When a thing or sphere of activity is interrupted by difference, its familiarities get clamped down on.

Colony

CEALL QUINN

Did you know that James Scott was a beekeeper? To get at the top-down simplifying practices of modern states he used the organizational structure of *Apis mellifera* colonies as a figure. When placed in a Langstroth hive—that 19th century invention composed of movable frames—the bees produce wax comb that falls amongst small grooves, standardizing the shape and size of cells. These hives are scalable: a technology at the heart of the modernization of apiculture. Honey bees are eusocial; colonial animals *par excellence*. They live in caste-divided societies and their lore reaches back to agricultural pasts, dreams of mythical lands of milk and honey. Can histories of colonization, at least in North America, be told in the bodies of honey bees? Brought over to the Eastern Seaboard, early hives were mud or clay enclosures. To get at the sweet insides they had to be cracked open, bees streaming out from their homes, with keepers praying they might retrieve the queen. Fumbling Protestants, expelled from home or voluntarily setting sail, thought the forests were infested with devils. At the same time, back in old England, burgeoning populations at the cusp of capitalism's ascent were withdrawn from the Church's concern. Queen Elizabeth's royal beekeeper had identified the caste system of honey bees—queen, workers, drones. The drones were deemed lackadaisical and thus disposable, evidenced by observing males left to perish outside the hive at seasons end. The "idle poor" became a new category of moral concern, discursively brushed as drones. Meanwhile, the pressure valve theory of colonization was borne on the bee practice of swarming. It was said that

the health of the parent society could only be maintained if the excess populations “hived off” to remote lands to establish new colonial offshoots and make use of “unutilized” resources. Captains of the Elizabethan era even suggested that teaching industry to Indigenous peoples, notably producing wax and honey through beekeeping, would have them so gracious to the imperialists that they would gladly bend the knee. With the Morrill Act of 1863 alongside a suite of other land-grabbing legislation, the continental United States is gradually secured and economic entomology takes flight. Here we return back to the Langstroth hive. The expropriation of Indigenous lands provided a seed fund for institutions like Cornell, the greatest beneficiary of the Morrill Act, where apiculture is increasingly technified and the practice of migratory beekeeping matured. Jump to the post-World War II context and the scale increases exponentially. Chemical weapons used in warfare get remarketed as pesticides. Capitalist agriculture bloats, leaches lands, poisons the native bees. Migratory beekeeping to the rescue, serving as a “pollination override” (Ellis et al. 2020) for lucrative crops. The bees are bigger than they used to be. Langstroth hives invite infestations of *Varroa destructor*. In a feral colony (or one reared without guiding grooves) wax comb forms in different sizes. Smaller workers can thus regulate and dispose of *Varroa* in ways that the standardized industrial bees cannot. Today we live the impacts of these legacies. Did you eat an almond? A cranberry? Any of the other pollination dependent crops that intensified production in

the latter half of the 20th century? Beekeepers whisper that populations are getting harder and harder to maintain. The bees are sick and getting sicker, a host of compounding drivers held in their small bodies. The sickness of honey bees is the sickness of the colonies. Who speaks of saving?

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Birthplace

ROWAN MELLING

The hospital grounds were overrun with rabbits. It wasn't possible to keep them from getting into the vents and dying. It became a health concern. This is where I was born. I had to go to the hospital repeatedly when I was five or six, and I remember seeing the rabbits then, hopping around the blackberry bushes. It made me happy. Years later, they would move the bunnies to the university campus, where they continued to die in vents. For a while, I worked there, cold calling seniors to survey them about medications for research purposes. Little rabbit bodies were constantly being found in the building, wire grates chewed through. Why were they so desperate to get inside? My university friends began trapping the rabbits to eat them and make hats and gloves out of their skins. I was given one of the skins as a goodbye gift before traveling. Other students loved the friendly bunnies—they would come right up to you, sniff your shoes. Stoners would blow weed smoke in their tiny faces. So, the administration waited until summer (when the students who loved the bunnies were gone) and collected all the rabbits in traps and “sent them to a farm in Texas.” Now, there are no bunnies at any of the institutions in the town where I was born. It is a clean and safe place. A recent ordinance has made it illegal for cats to go outside without a leash. I still keep the rabbit pelt in my closet. From time to time, I take it out and touch the soft fur.

Home

CEALL QUINN

To conjure home the mind reclines back. Could it be a suburb? Contained in a dog? Maybe it's a kind of story the deracinated tell themselves to assert a sort of lineage: an unnamed Toisanese village, the old homestead in Clifden. Longing can function to displace the here, perform an occlusion of settlement, index hanging anxieties. Perhaps home materializes most vividly in the ephemera of dreams. Is home a sickness? But I could take this somewhere else, follow tried and true paths to find bits and pieces of recursive sentiment. Maybe, most definitely, home is the shedding of selves found in minutiae. The cat touches bits of paper before sunrise, invading the space of sleep. The familiar rhythm of your post-coffee bathroom break. Home can be witness to the homes of others: an *Andrena* nesting aggregation in the heart of an East Vancouver Park. Home is a portal, a feeling. Home is the well-worn groove of a rubbing stone. Home is...

Domestic

MATHEW ARTHUR

The intimacies of home scale up and get passed around. A neighbour calls the cops on the couple next door who won't stop throwing things at each other. Impacts escalate and it's all over the news. Or the neighbourhood Karens whisper and stare and what gets done feels like a loaded nothing. Stay-at-home moms make bento boxes with elaborately primped snacks and become TikTok famous. Microwaves, fast fashion, and electric cars get caught up, too: when a factory in Bangladesh burns down or an assembly line in Sudbury, Ontario goes bust. Suddenly, keeping things at home—manufacturing, call centres, oil—becomes what we fight about over dinner, how we come to know about “it” in the first place. The domestic is a microcosmic nation—how things are tamed in big ways by small acts. We're all housebroken, trained into doing dishes and laundry or taxes, our hygienes a boring map of moral and regulatory apparatuses. Maybe we even like it: tidying up, getting into routine, the forms and feels of time and matter having edges to pit ourselves against.

Recipe

SARAH LAW 婉雯

Early days of Covid-19 quarantine recall freshly baked loaves. Banana, focaccia, sourdough, whole wheat, rye. I've never been good at baking. I'll never know the difference between baking powder and soda. Why are there so many different types of flour? I type "banana bread recipe" into the search bar. Enter. About 154,000,000 results in 0.42 seconds. "Banana bread," "banana banana bread," "MOIST banana bread" (yes, all caps), "my favourite banana bread recipe." I click the first hit: "banana bread recipe (with video)"—and with a solid 5-star rating. Seems promising. I plop my phone down on the counter and raise my index finger to the screen. I rev up to swipe my way toward the recipe. Fuck! I clicked an ad. I brace myself for the pop-ups of people with secrets who are hated by doctors, dentists, dietitians, personal trainers, even librarians. Tummy tuck, magic pills, eye-lift tape, anti-aging cream. Teas that cure any ailment from having a body that ages to having a body at all. 3D lash extensions, eyebrow tinting, microblading, lip blushing, lip filler. A skincare revolution and effortless glam for looking your best during the apocalypse. I frantically search for that tiny X hidden away in the corner of the screen behind yet another ad. Impatient, I exit the page and start a new tab. I retype "banana bread recipe." The second hit is a recipe with raisins and toasted walnuts. I don't have either. I guess I can leave them out. Phone down. Finger up. Scroll. I watch lines of text paying homage to a dead grandma's love of baking, multiple shots of the same loaf, and a hyperlink to Natasha's Amazon storefront for fucking vanilla extract. Another pop-up. No. I don't want to subscribe to your mailing list.

Print Dialogue

MATHEW ARTHUR

Click PRINT and what's just a draft is suddenly real because it conforms. Margins, done. Fonts, picked. Maybe even page numbers or a logo. Destinations are selected—LaserJet5M9P or Lobby-BW—and what was formerly just pushing things around onscreen arranges itself on paper. Choose how many copies, cueing up necessary reach or bald ambition. Choose a paper size (A4, Envelope #10, Legal) and, with it all the working groups, manufacturing standards, ISO, DIN, machines, and wartime geopolitics. When things break or go missing: fit to page. Go double-sided or economy mode when you're eco-virtue signaling or broke. Print to PDF, attach, file under "back-ups." Something happens in code, across wires and office layouts, in invisible wifi waves: looking for printer, job spooling. Then it shudders into hardware zipping back and forth spraying ink or the acrid smell of toner, dust, ozone.

Smartphone

CEALL QUINN

Writing about social media seems trite nowadays, I know. Like, just the other day some dude's Substack came up on my Tumblr feed (who uses Tumblr, anyway?). This would-be prophet hurls invectives about—I kid you not—"suicide boxes", AKA cellphones. His cure? Returning to "older forms": folk tales, origin stories, the durabilities of myth. As if these genres stand outside history, context, and change. I mean, look at the tarot renaissance happening with the pagan influencer set or witchTok's spellbinding popularity. Of course he peppered the end of his newsletter with a "like, donate, subscribe" type sign off, though rhetorically distanced from the lowly objects of his critique. I guess the whole "our phones are killing us" shtick, feels a bit too "old man yells at cloud" to me. Which isn't to say we shouldn't think about it. But technological disavowal feels tired in a way that recalls my Shibari teacher's consistent refrain (following Derrida) that "there is no outside to context". So, how might we enter the text of algorithmic address to better account for network culture's distribution of subjectivity? Is it possible to map something like context collapse? I wonder if the smooth movement of information, the material weight of which undercuts fluidity, can produce a transposability of ethics, diagnoses, micro-identities? Old socialities dissolve. Do new bonds form?

Password

ROWAN MELLING

Everyone's first email address was embarrassing. I don't want to tell you mine. But I remember my older sister's boyfriend's from the time when people still used their first email addresses: slayer_69@hotmail.com. Passwords then were dumb little intimacies or sex jokes. Everyone's password had "69" in it. My ex's password was "boobs2." I got my first ATM code when I was maybe ten, and it was my best friend Jim Casey's birthday. Actually it still is—and I haven't talked to him in probably fifteen years. These days passwords are not enough. Now there is multifactorial authentication. It happens through an app on your smartphone, generating six random digits that must be input before the clock runs out. It only rarely has "69" in it (and only by chance). Even when it does, it's not funny or hot because the clock is ticking. These passwords aren't mine and, when I forget my phone, I'm locked out. Sometimes even reaching across the room for the phone is too much: you get stuck between the first password and the multifactorial authentication code. These tiny machinic demands for attention and input build up. I tip back in my fraying, navy blue office chair and groan my tiny refusal.

Passwords must be changed. My friend Britta just adds a number to her password. The School Board makes her change it every few months. Last I checked it ended in "12." The growing number is a small catalogue of futility, a small snub to the bureaucratic demand that we care about security. How large will Britta's password grow before she retires from teaching in thirty years?

In the future there will be more passwords, cross-checked with more devices. Sometimes, I think the point may just become the inputting of passwords. What we are accessing will become uncertain. Codes will link to new codes, the input of which will whirr the apparatus of checking and referencing along. Friction at gates that lead nowhere will generate heat in the system. My password is fa!!ADA19*#. I changed it from s6kb^ZAS! the last time a machine told me to. Every now and then I still meet someone with an old password. Like my girlfriend whose password is "hair69." On her phone it's just 6969.

Format

MATHEW ARTHUR

LP, VHS, CD, DVD, Mp3, Mp4—or that brief window when rich kids' parents had LaserDisc: not quite a vinyl record, like a king-sized DVD. Chicago, MLA, APA. Formatting is scrolling endlessly through fonts and footnotes, making selections that align to a dream job, bad boss, or just to pay rent. It's how bodies become anatomical in diagrams or machines that diagnose then dissect, bringing flesh and blood back into known shape. Formatting is an architectonics: how matter is coded into zoning maps and material specifications. How rails, walls, and roads shape access and chance. How texture formats sense and the other way around: braille dots placed just above reach on an elevator control panel. Or smartphone screen haptics that draw attention to angry texting or a Wikipedia vortex. A room can be formatted by the choreography of furniture or bodies, placing trinkets or higher-brow things like so. Alone or clustered. Just there. Format opinionates content: like a file format's compression or the rules of the road. But it also gets the vibe right, lights dimmed or all the way up, patterns cut to cinch a slutty or million-dollar look.

Practice

SARAH LAW 婉雯

Practice makes perfect. I learned this at a piano bench: metal ruler hovering above my hands waiting to strike, faceless body blurred behind me, reflected in black gloss paint like a funhouse mirror. My back is tense. Shoulders clenched. I chew the inside of my mouth. Waiting for my hands to falter, for the metal to drop. Four hours a day, every day for twelve years. Almost half my life spent on this practice. Like an endurance athlete, my fingers would run across black and white keys made of wood and ivory. When the page in front of me demanded a crescendo in *ff*, fortissimo, my heart pounded louder than my hands on the keys. Holiday weekends were spent racing from lessons to recitals to competitions. Hours sitting in plastic chairs, scratchy dresses stuck to my legs. *Back straight. Don't scratch. Don't swing your legs. It's only a couple more hours. We'll be home soon, you can listen to the tape and work on your mistakes.* I just wanted to eat dinner together. I don't practice piano anymore. Now, I practice on a different set of keys, ones made of plastic. The letters light up. I write about feelings and climate change. I tell people my work is about climate grief because, "I don't do anxiety." If I said this to my therapist or close friends, they'd laugh. I do anxiety a lot. It may even be my longest practice. It textures my lower back pain, the clicks when I roll my neck. It textures each song I hear: those black and white keys, notes and melodies. Piano practice textures my writing, every word a sound, a colour, a note, a major or minor key, a feeling, a surface to touch. In this practice, mistakes aren't met with a lashing. But my fingers still freeze in anticipation of that silver whoosh. Is someone hovering behind me?

Fieldnotes

MORGAINEE LEE

Jenny said, “write your fieldnotes immediately.” Cristina said it, too. I didn’t heed their admonition. Life things come hurling at you and stretch the memories thin: encounters, events, planting sunflowers, going on strike, baking cherry pies. Reaching for ideas and feelings, with love and appreciation for what they taught me, this is what I remember:

SpiderSong¹

The pitter-patter of the drum was cadenced with an ephemeral sort of magic. I regret that I trapped a spider under a plastic container. I regret that it’s still there a week later, just in case. We do science because we think things are beautiful. I think that’s really lovely. The vibrations of sound that wooshed like a starship felt nice, exciting, and satisfying through the speakers embedded into the walls and floor. It is enough to want to make something that’s beautiful.

BirdSong

The biologist studied birdsong and wanted to know why they make mistakes. What neurons fired and why. What *is* a mistake? Does the bird’s stomach sink in embarrassment after belting out a melody made with its whole little body? “We need more scientists to admit they care about their work and think it’s beautiful,” they said.

1. Mendel Skulski’s *Spiders Song: The Music of Evolution* is a spatial audio artwork about “the grandest symphony on Earth: the music of evolution.” <https://lobestudio.ca/new-events/spiders-song-the-music-of-evolution-mendel-skulski>.

MetaFauna²

As the characters of life evolving swayed, stilts swinging below the scaffolding, I swayed too. Then I stopped. Why don't I want to be witnessed being moved? PVC bones clinked with every body, flip and flop. The movement was gentle, more so than I anticipated. Perhaps the evolution of megafauna had a gentleness to it, too. I miss dancing, I wish I was dancing. You can feel the dancers breathing in every movement, their bodies infused with intent, aliveness. Do the microbes that dangle from the cloth hung along the proscenium feel the rhythm? Are the bacteria on the dancers' hands, feet, and bellies swaying, too? Do they stop if they feel seen?

2. Inspired by Haraway's cyborg, Isabelle Kirouac's performance work *Meta/fauna* incorporates contemporary dance, contact improvisation, acrobatic stilts, and physical theatre to portray chimeric flora and fauna. See <https://threelittlereddots.org/megafauna/>.

Taichi

CEALL QUINN

Tinted glass reflects motion: a body's integrated movement. Grip ground, smooth arc of leg driving shoulder, elbow, wrists towards heaven. Each repetition cycles weight through sole yielding untrained footache instantly. The first two times threw off my Vans, preferring rough concrete to constraint. Alex says his feet are so powerful, they destroyed innumerable sets of shoes. On Wednesdays when Robson Square ice rink is drained, dancers are drawn to the space. Competing rhythms, styles, and tunes sonically clash. Teenagers carrying bottles of Jack Daniels congregate away from parental eyes. They are amused by our practice—some come stand with us as we hold *Zhan zhuang*, stoically until they burst out laughing. We must seem funny to them: stationary old people gathering in the square. Yet amidst these cacophonous choreographies, holding and learning to organize the body, each time I am gripped by a growing awareness of motion held in stillness. How do you learn to hold your body as if density is evenly distributed? How can your legs support your arms as you reach to the heavens for twenty minutes or longer? From the living reference of posture, what expressive movements come to life?

Calendar

MATHEW ARTHUR

Time grids into view: all the Mondays and weekends stacked in perfect columns, even though it doesn't feel that way. Small numbers with spaces where things happen or feel guilty. Little multi-coloured events like sprinkles: Columbus Day, a dentist appointment, payday, the coronation of King Charles II, restaurant reservations, cancel my free trial, Daylight Savings Time, geolocations—you were here on this day. Reminders that keep coming up well after they're gone. The next month edging in on the current one to keep the interface pristine. Swiping between hours, days, months, years as if it all happens at the same time.

Outtakes

MATHEW ARTHUR

I. Guys in combat boots and utility pants, cuffs tucked into khaki socks, digital camouflage gridding olive-grey pixels over a twilled field jacket. It's a drone operator in Kandahar or TikTok fashion influencer wearing 80s Issey Miyake. Something rustles in the brush and it's a midwest dad with a 12-gauge aimed at unlucky waterfowl. You can hunt for terrorists, fauna, or trends.

II. White people like Japanese writing. Or Chinese. Each character like a torii gate or ornamented pagoda—criss-crossed lines making little worlds. Words like buildings, sentences like cityscapes. People get “joy” or “luck” tattoos. Or some bad misspelling that circulates as a meme. Stuck in the 80s, video games are worlded with neon signs that scream “urban” like Shibuya crossing or vapourwave. Logograms look like Nike swooshes or heiroglyphs: a kind of streetwear orientalism.

III. The interstitial spaces of public life are always one long tiled hallway: a muted off-white expanse of doors marked “authorized personnel only” with a pop of neon yellow or red as occasional wayfinding. Maybe it's a mall hallway—where the bathrooms are, parkade stairwells, or the in-between of airport terminals. Stretches of nothing that are walked on the way between shops, offices, waiting rooms, and service desks. The backrooms are a design feat, non-space made from reams of concrete, metal, and glass carved out of someplace else.

LAB 1

DOING
STS

CLIMATE MOURNING, SLOW AND SOFT

The climate crisis elicits grief. In this workshop we'll explore practices of care, mourning, and rest through theories of disability justice and abolition feminism.

Through meditation, collage, and writing we'll explore how white supremacy replicates in the management of emotions and crisis.

Free public event

Led by Sarah Law 婉雯

1–4pm, June 3rd, 2023

Room 1315

SFU Harbour Centre

doingsts.com

WRITELAB

Climate Mourning, Slow and Soft

SARAH LAW 婉雯

WHAT CAN THEORY DO?

Theory is more than written word. Theory is found and felt in daily life. It transcends academic journals, books, notes apps, and Word docs. Theory is not immaterial to living, breathing, dying, or sensing. It is the extraordinary ordinary that Kathleen Stewart asks us to attune to. Theory can be a tool for mobilizing better futures, used in practical and emancipatory ways beyond academic capital. When we find theory in the everyday, it foregrounds forms of intimacy and imagination. Theory holds us and makes life legible. This is what theory can do.

Ecological grief is often understood as a psychological response to experienced and anticipated losses due to climate change. Most theories of eco grief are found in ecopsychology literature and relate to the mental health impacts of climate change. As a sociologist, naturally I come at this from a different angle. As a sociopolitically and culturally informed response to climate crisis, I offer an understanding of ecological grief through affect studies. I frame grief as a more-than-individual phenomenon, looking to the sociality of emotion as a cycle that is active—that moves and pulls us towards each other.

I have developed and iterated a model of ecological grief. The most current model (fig. 1) shows how each phase of grief fits into a cycle of practice: an embodied response that moves with us as we witness and anticipate climate-related loss. As such, my work frames grief not as a journey toward acceptance, but as a social practice of mourning where acceptance is continuous and not limited to environmental ruin—a process that holds the multitude of emotions that overlap and shape grief. This includes the loss of hope, faith in market-based solutions, resentment against institutions, frustration with political inaction, and the betrayal of greenwashing. I offer an understanding of “flat” affects (grief, depression, loneliness, sadness) as more than an individual, psychological, or diagnostic phenomenon in which grief is social and active. Grief informs and shapes how we understand climate crisis as a systemic problem that requires mourning ideas of the future and deeply held beliefs about our social realities.

WORLDMAKING

Late capitalist culture is marked by living with a sense of impending crisis: we come to learn how to live with the losses. This does not mean we learn to accept them. Climate justice is a movement that seeks a just future where no one is disposable or left behind. We fight for the equitable redistribution of wealth, the return of Indigenous lands, and the abolition of systems of extraction and incarceration such that all species might thrive and have a secure future. Climate justice is the death of capitalism, settler-colonial occupation, prisons, fossil fuels, and liberalism. It is the death of this world—the world we live in. But when this world dies, what are we left with? What do we have right now that we want to keep?



Figure 1. Model of Ecological grief

Mark Fisher opens *Capitalist Realism* with “it is easier to imagine the end of the world than it is to imagine the end of capitalism.” I turn to him often because his work makes me feel seen. His suicide left me feeling naked. As jarring as this quote is, it is critical to remember that the end of this world is not the end of the world. It is the end of a world; and other worlds are possible—some of which exist now. What Fisher teaches us is invaluable. His work is salient to the feelings of burnout that have risen so severely in recent years. His urgent call to politicize mental health—rather than its pathologized liberal psychol-





ogies and medicalizations—is a relentless ringing in my ear. I wonder what would change about his work if it engaged more seriously with Black feminist theories, crip theories, Indigenous knowledges, and other critical feminist theories of abolition? When I read his work around environment, mental health, and bureaucracy (as three capitalist “reals” where systemic change might happen), adrienne maree brown, Angela Davis, Gina Dent, Alexis Pauline Gumbs, Donna Haraway, Tricia Hersey, bell hooks, Leanne Simpson, Anna Tsing, Jackie Wang, and Amanda Watson tug on my sleeve.

What we learn from feminist, decolonial, and abolitionist scholars and theories is the importance of carework: kinship, relationality, feeling, interspecies interdependence. Love, leisure, and pleasure are the care practices of capitalist world-ending and worldmaking. These scholar’s work is my theoretical axis for understanding the world around me. I offer it up as a way to think about emotion and worldmaking, broadly, and about political mourning and eco grief. This is also what affect theories can help us do.

INVISIBLE LABOUR

The question is not “what is theory?” but “what can theory do?” I borrow this from Sara Ahmed who asks what emotions do—rather than what they are. She turns towards the sociality of emotion, shifting away from emotions as things that individual people “have.” I read this work alongside other anti-positivist pedagogies of feeling like Lauren Berlant’s *Cruel Optimism*, in which every sense of depression, anxiety, fear, bedtime routine, insecurity, flinch, love affair, or ounce of hope traces back to economic, political, and social climates of late capitalism.

Stay Safe!!!



STS is relatively new terrain for my work, but thankfully John Law makes a clear links with sociology: STS is the very matter of the social world. It is receiving a bouquet of flowers as a gift from a friend, holding its stems in my hand, thinking about its materiality and its sociality.

Where do these flowers come from? What did it take to put them in my hands? Where did my friend get the flowers from? Where did they grow? Were they bought? What is the economy of cut flowers? Its industry? What went into growing them? Whose labour, what systems, what science, what technologies make this social exchange possible? How are these practices interconnected? When I go home and place the stems in a vase, where does the water from my tap come from? The glassware? In my everyday life, chains of people's labours to plant, grow, pick, cut, and ship these flowers shape how I feel, act, and think when I sit by my coffee table where this bouquet keeps me company.

Sociology and STS make these processes analyzable and visible. And affect is the sense and feeling of attuning to these processes. It is stopping to look at plants that grow in grooves and cracks of cement sidewalks. It is pulling out invasive species on a walk. It is being late to dinner plans because I stop to look up at leaves and branches. It is smelling my neighbour's lilacs—now blooming earlier every year as spring gets hotter faster.

It is when the bouquet of flowers inevitably begins to wilt, and I hang the stems upside-down to dry or pick the first few dying petals and leaves to press. I decorate my home with things from people who I love and refuse to forget. When I craft with dead and dying matter, I make anew with these invisible labours: threads of science, histories of preservation. What I sense has never been only mine to feel.



Photo: Sarah Law

“I DON’T DO ANXIETY”

Fisher urged for mental health to be politicized in a way that cannot be reduced to including therapy in free healthcare. What he calls for, what I too am looking for, is what affect studies give us: a structural understanding and analysis of what composes our “mental health crisis.”

Every time I get an email that asks me to do an interview, join a panel, or host a workshop on “climate anxiety” I cringe. I reply: “I don’t do anxiety. I do grief.” My insistence on grief rather than anxiety is theoretical and pedagogical. I fear the impact of pathologizing climate emotions—of making them solely medical and individual. We cannot shop our way out of the climate crisis. Nor can we meditate, therapize, or medicate our way out. Injury, trauma, and illness are not healed by treating symptoms. I am not against therapy, it is a needed tool for coping with late capitalism. But therapy for the emotional impact of climate crisis will not liberate us.

As Ann Cvetkovich, Eva Illouz, Byung Chul Han, Dian Million, and Jie Yang have shown, therapeutic language, wellness culture, and liberal pop-psychology is a darling of neoliberal settler governance across Turtle Island and beyond—and not because of an ethic of care. What their work makes legible is how therapeutic practices and the language of healing are tools of maintaining regimes of settler occupation, violence, and capitalist production. To borrow from Audre Lorde, therapeutics have become a tool of the master’s house. They will not set us free.

I would argue that we should not necessarily want to avoid our grief either. It is an unrelenting intimacy with the world that shapes us. To pathologize and individualize political grief is to risk what we have seen happen with emotion:

that it is pitted against “reason” as a kind of weakness. Kelly Fritsch, Michel Foucault, Alexis Pauline Gumbs, Tema Okun, Alexis Shotwell, and Sylvia Wynter remind us that deviations from the settler-capitalist project of exploiting bodies and lands are moralized and criminalized. Those that are not white or able-bodied are othered along racial, gendered, sexual, disabled, or mentally ill lines. These same systems, moral politics, and logics of white supremacy have lead us to believe that what is slow (like grief, mourning, or rest) and soft (like care, pleasure, and dependency) are to be avoided.

PRACTICE AND PUBLIC MOURNING

How might we sit with the soft and slow?

1. What would it mean to sit with the soft and the slow in a world that does not allow for it?
2. What would a world look like without capitalism or climate collapse?
3. What does a just climate future look like?
4. How do we rise to Donna Haraway’s call to stay with the trouble of living and dying together on a damaged planet?
5. What would these practices of sitting with and imagining otherwise look like materially, relationally, economically, politically, ecologically, and interpersonally?

This is a lot to ask. These are big questions. I want to offer a way of thinking about alternatives to capitalism, worldmaking, and liberation through theory and practice in the everyday. When we access the ordinary, what can our senses teach us? I hope to show you how uncomplicated these questions can be when we use our senses and everyday experiences to get at the heart of worldmaking: hope, imagination, ordinary practices.











CRAFTING AND FORAGING

Collaging is a kind of scavenging practice. I forage for, grow, receive, and find flowers to press and preserve. I create with them through paper mâché, resin, canvas, paper, glass, and other recycled, found, and reused materials. It is a practice of making do with what you have and finding joy, pleasure, and beauty in working with dead and used matter. It is also a practice of grieving and imagination that moves me to pay attention to place by foraging, noticing growing patterns and irregularities, attuning to invasive species in my area, engaging respectful picking practices, identifying plants on walks, feeling the changes in the seasons when gardening, caring for plants, and preserving bouquets of flowers that I receive as gifts. These practices often require multiple days if not weeks and months. In my everyday life, these durational habits orient me to the world around me. They are not methods of extraction, production, or consumption. I work with what I already have, what I am gifted, and what can be reused.

PRACTICE: STICKY NOTES

I invite you to think about what makes things soft or slow (and fast or hard) when it comes to politics, economy, labour, emotion, and feeling. Take 5 to 10 minutes to write what comes to mind on sticky notes. Reflect on the following questions.

QUESTIONS

1. What are slow and soft practices in everyday life? What makes them feel this way?
2. How can theories of disability justice, political economy, abolition feminism, and ecology help us to understand how the slow and soft are seen in capitalist culture?
3. What are the moral associations of words like lazy, dependent, or submissive?

4. How are such associations crafted using logics of white supremacy, patriarchy, and ableism?
5. Where and how does nature show us that the fast and urgent pace of capitalist production is not as inevitable or “natural” as it has been made to appear?

PRACTICE: DEAD MATTER ANEW

Choose a keyword below to write with: how does the word texture your visions? You can write a burst of theory, a story, poetry, a list. Whatever comes to mind. Write for 15 to 20 minutes, then begin to use your writing for a collage piece. You can use any of the materials provided (including your writing) to create a mixed medium piece to express, reflect, and materialize your vision. In a workshop context, we do not have weeks or months to craft together. But just as I might forage in my garden, a patch of grass, on a walk, or in a park, you might “forage” for meaning, representation, and materials in collage materials: magazines, scraps, odds and ends.

KEYWORDS

| | | | |
|-------------|---------------|-------------|------------|
| Anxiety | Drown | Lean | Public |
| Bargain | Drying | Leave | Rage |
| Beginning | Dying | Living | Repetition |
| Bouquet | Dysregulation | Mourning | Resist |
| Burn | Emergence | Movement | Ruin |
| Collapse | Ending | Panic | Scavenge |
| Compromise | Extraction | Pattern | Searching |
| Cracks | Feeling | Permanence | Senses |
| Crafting | Flower | Petal | Slow |
| Crisis | Gift | Possibility | Soft |
| Dead | Grief | Practice | Urgency |
| Death | Heat | Preserve | Wave |
| Disruption | Imagination | Press | |
| Distraction | Invasive | Private | |





Pressed flowers and flowers in resin, Sarah Law

THINKING WITH

Accidental alliterations

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Daydreaming out loud

Doing STS Team

Dr. Amanda Watson

Dr. Coleman Nye

Dr. Jie Yang

Dr. Kyle Willmott

Dying and drying lilies on my coffee table

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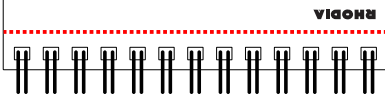
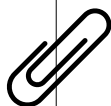
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- Invasive species (especially attuned to morning glory, bluebells, and devils' ivy)
- Keeping, pressing, and drying gifted bouquets of flowers
- Lists
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- My graveyard of grief
- My therapist
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- Pacing
- Petal preservation and pressing purity politics.
- Plant identification app

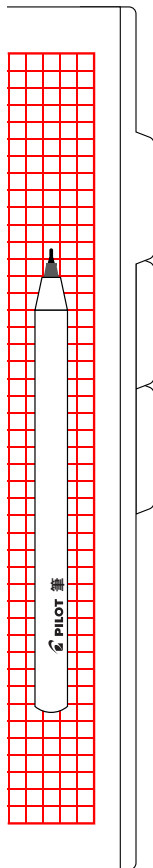
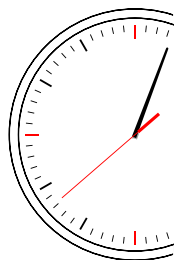
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LAB 1



SESSION NOTES

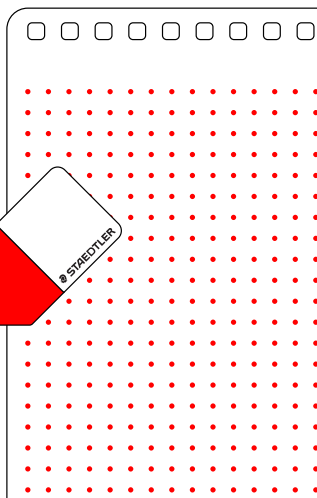


Join us for a special WriteLab with Coleman Nye, Lindsey Freeman, and Amanda Watson (SFU).

“A session is a singular episode in a durational practice. We bring for the first time our notes on our individual sessions—what we are working in and thorough in our particular research projects—to each other and to you to explore the sessionability of writing and thinking together”

Coleman’s session notes take up caring for her dead father’s body, Lindsey thinks and writes about running, and Amanda reflects on the process of writing interview notes in the car. Session notes are a sketch of the feelings and haptics that run with and alongside something we might call “effort.”

Free public event
7–9pm, July 10th, 2023
Unit 17, 2414 Main Street
Text (604) 842-4412
For entry



doingsts.com

WRITELAB

SESSION NOTES

LINDSEY A. FREEMAN, COLEMAN NYE & AMANDA D. WATSON

In one sense, a session is a singular episode in a durational practice. In another, a session can also be a useful palaver, a coming together of a group for an exchange of ideas for the purpose of exploring something. When we think of something as sessionable, like lower alcohol beers, it means that we can let it work on us for a while, we can stay with it. We think of writing with and through theory as a sessionable practice. In this exercise for Doing STS, we bring for the first time our notes on our individual sessions—what we are working in and thorough in our particular research projects—to each other and to you to explore individual sessions, palavers, and the sessionability of writing and thinking together.

Coleman's session notes take up caring for her dead father's body, Amanda writes interview notes in the car, and Lindsey is still thinking and writing about running and the work that session notes can do not only as a record of times and distances, but also when taken up together, as a conspectus of the feelings and haptics that run with and alongside something we can call for simplicity sake, effort.

Session Notes

LINDSEY A. FREEMAN

A practice is something you are invested in enough to repeat over and over. What you practice adds texture and rhythm to your daily life, becomes part of your personality. Session notes are a complementary practice to a practice. They are their own method and microgenre, a research style and form of writing jotted down in a notebook or tapped into a phone while still feeling the high, exhaustion, boredom, or frustration of a period of effort. I've been thinking about what these kinds of notes can do for a practice, what they might pop open or set spinning, especially when shared. Session notes are a way to love the rhythms of the desire for activity and exertion, even if those efforts are not bringing you to where you want to be. They are useful for staying attuned, they help to "keep the faculty of effort alive," as William James writes in *Habit*. Session notes also allow for catching a feeling in its complexity before the compulsion to story, to fully explain. They can fix a fatigue before it becomes narratological or hold a pang of pleasure felt in the body so that it resists being contextualized in a ready-made explanation. Session notes written over a collection of sessions or across a group of people even in a single session form a concatenation of resonances, individual and collective affects, insights, and confusions. They can evidence hapticality or compersion and they can show you what is shared and what is lonely.

Peppy

COLEMAN NYE

My brother and I aren't religious people. We didn't have a ritual at the ready to help us care for our father when he stopped breathing. Noses dripping tears, we packed up our takeout containers and leftover beer cans in the darkness. I remember walking through the bright corridor leaving him behind. The hospital kept moving as if my father wasn't lying dead down the hall. I felt ashamed of how messy my grief was and angry that there wasn't space for it and so terrible leaving my dad there, helpless and alone, waiting for strangers to handle him as work. I kept apologizing to him and searching for the window of his room as we pulled out of the parking lot in my stepsister's shitty red Honda civic that had every dashboard light on. I keep returning to this night and making notes. I grope for words that can enfold my father's bruised flesh and aching lungs, that can hold this complicated and gentle man, who had been breathing underwater, slowly drowning in lungs that could once make a horn scream with music, that could still make me scream with laughter. I try to wrap him in my words, tenderly removing the tubes from his tired arms and chest, lying beside his still-warm, bony frame, caressing his patient hands and rosy cheeks with a warm cloth. And I dress him warmly, bundling him up in his soft green sleeping cap, his now too-big hoodie, and worn gray slippers, to offer some protection against the cold efficiencies of death that are to come.



Flextime

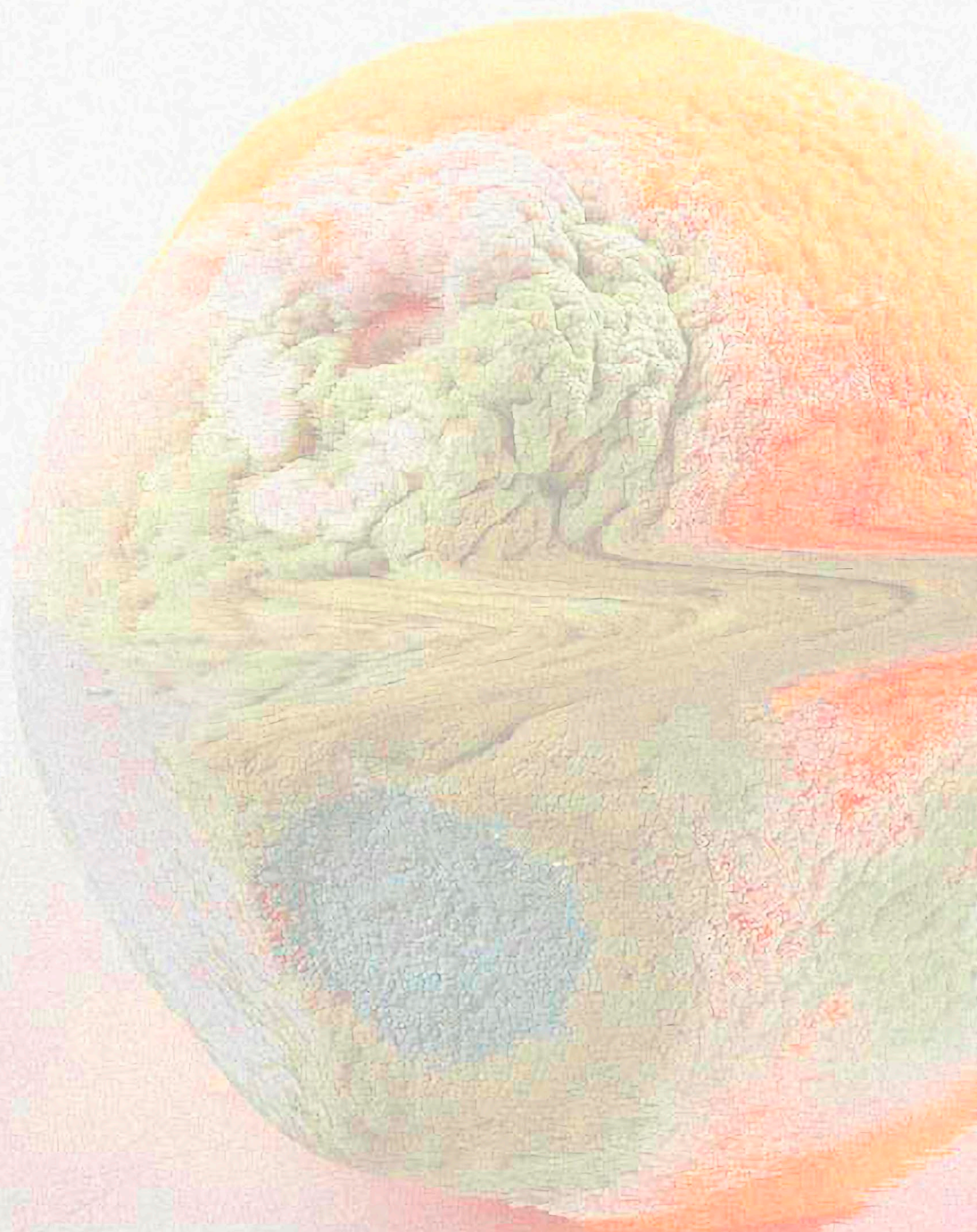
AMANDA D. WATSON

It takes a village and you need to build it or buy it, she says. I wonder when she learned that. We value quality time, she says. She used to be a ballerina. Angles in a leather club chair, one hand pulls her calf to her ear as she lifts tea to her lips with the other, sipping without moving her jaw. She tells me how she fills the cup of her Deeply Feeling Kid. We are the same age and so are our kids, but money is funny. She lets me walk my teabag to the compost under the farmhouse sink where I find it unused. Not a stuck strawberry top or slime of coffee grounds, not even a smell. I need a haircut, my socks have sand in them, my teeth are stained. Still extended to the sky, her hamstring looks pleated like the underside of a whale. They always eat dinner together. The bedtime ritual is the same each night while the nanny cleans up downstairs. Her behind-the-house neighbour thinks Joe Biden sniffs the heads of children. Too far gone, she says, but we must hold other people to account if we want to be fully held ourselves. She takes LandBack and the hopes and dreams of rednecks seriously all while criticizing EDI-washing. She just has a whole lot of space for other people. A tangle of dust falls from the skylight above and we both panic. Did something just drop? Just dust, I say. Impossible to clean.



မိမိတို့၏အနာဂတ်

SECTION TWO



Smellworlds: A Critical Perfuming Primer

MATHEW ARTHUR

Smellworlds are everywhere. Intimate or atmospheric, sometimes imperceptible. They seep and linger. Scents are vibes: danger, sex, sickness, status, luxury, leisure, industry, death. They harness bodies into movement, luring or repelling. They are feral and highly regulated, tangled up in appetites and governance architectures. A lover's sweatshirt. An antiseptic hospital corridor. Gasoline. Bubblegum. The censer clutched in a priest's smoke-shrouded hand. Rain on concrete. Old or new books. Sunscreen. Piss. We feel smell. It moves us. Yet olfaction is notoriously misunderstood. Over-associated with memory, it has been psychologized into stage or drive theories and biochemically diagrammed to abstraction. It exudes and eludes. Neuroevolutionary approaches propose that olfaction resources have shrunk in the neocortex over the ages. This makes smell a minor sense, ostensibly weak on post-perceptual processing. It *is* tricky to conjure an already-experienced or imaginary smell in the mind's "nose."¹ Chlorine and sweat. Wheatfields and asphalt. Alien terrain.

1. Richard J. Stevenson and Tuki Attuquayefio, "Human Olfactory Consciousness and Cognition: Its Unusual Features may not Result from Unusual Functions but from Limited Neocortical Processing Resources," *Frontiers in Psychology* 4, no. 819 (2013).



Olfactory knowing and recall are at once familiar and ungraspable, chained to memory and proximity but synaesthetically filtered through taste, colour, analogy, or poetry. One only has to look to the perfumer to know scent's recursion—new smells always at the descriptive mercy of what is known. But despite scientific hyperfocus on cognition and language, smell does not submit to the neurotypical modest witness² who disciplines his sense reactions in the moral, mood, and methodological hygienes proper to the production of evidence. Roaming stench or surprise olfactory joy undermine the sovereign urge to quash sensory mutability, to engineer for intelligibility.³ Even as theories of human olfaction rely on a stable sensory subject (the opposite of animality), the scientist's material exertions radically alter the sensorium: toxic or endocrine-disrupting smellscape. Or, Covid-19 proliferates anosmia and other chemosensory effects.⁴ But amidst ruin, its technoscientific fixes and viralities, smell's extravagance is nonsovereign. It favours distributed subjectivity. It congeals more-than-human kinships. Smell is learned in utero via amniotic fluid. To smell is to ingest another's chemical production. Rats smell in stereo, each nostril a world.⁵ The initiating proposition of smellworlds is compositional: that scent (or its absence) assembles, pulling things into consistency. Smell's regionality "jumps between landscapes and bodies of all kinds."⁶ To smell is to imbibe or diffuse place—its matters and multiple histories, technicalities, vulnerabilities, and violences. Scent infrastructures gain texture around questions of subjectivity and animality, civility

2. Donna J. Haraway, *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse™: Feminism and Technoscience* (New York: Routledge, 1997).

3. For example Lauren Berlant, *Cruel Optimism* (Durham: Duke University Press, 2012), 52–53.

4. See Michael Marshall, "Covid and Smell Loss: Answers Begin to Emerge," *Nature* 606 (2022): 631–632.

5. Aimee Fountain, "Lingering Questions About Human Smell," *Lumosity* (2020), <https://www.lumosity.com/en/blog/lingering-questions-about-human-smell>.

6. Kathleen Stewart, "Regionality," *Geographical Review* 103, no. 2 (2013), 275.

and odour, design and desire, utility and glitch. They register invisible and non-consensual chemical relations while defying Western-scientific ways of knowing.⁷ It is no surprise that imperial histories are tales of deodorization. What smells good is as much about pleasure as it is a bodily pedagogy of good-life fantasies. The colonial project is a toning of sense: how anthropocentrism, whiteness, and settler nationalism come with cultivated habits of smell and predictable smellscape. New car. The spa. Smog. Respectabilities of body odour. The acridity of paper money. Electrical fire. Laundry. Rubber.

Critical engagements with smell are many and few. The literature homes in on cultural histories, neurophysiology, sensory mapping or smellwalk methods, and notions of toxicity and risk. Instead, I propose DIY perfumery as a way into the worldly atmospherics of smell—how smell connects and move. Bodily, emotionally, wafting here and there. DIY perfumery rehearses questions of material purity and provenance, identification and classification, harvest and extraction, replicability and trade, temperature, duration, toxicity, and mood. While industrial histories of perfuming map onto spice and slave trade routes and repeat the extractive impetus of sciences, DIY practice slows down to forage, tincture, and age. The amateur perfumer attunes to seasons or yields and rests with the unruliness of care and growth. A tincture can take years. Enfleurage wrestles volatility with a tedium of hand-plucked petals. Steam distillation presences the fraught ratio between input and output—all from the kitchen's hearth. Playing with synthetic aroma chemicals is a training in the overlap of lab-grown purities and the plantation yields required to produce what counts as "natural." DIY perfuming practices ethical unknowabilities

7. Mathew Arthur and Coleman Nye, "Scenting Relations: Exploring Smell-Worlds through Zine-Making," Society for Social Studies of Science (4S) Annual Meeting, University of Toronto (2020).

and patterns durational relationships with microbes, molecules, plants, animals, and elements. It orchestrates its practitioner as an ecology of experimental practice,⁸ feels out “forces of composition,”⁹ and dramatizes habits of care. What follows is a series of scores for doing it yourself: to play with, remix, or fail at. Practices to notice and care with. A try at smelling out otherwise worlds.

8. A non-neutral “tool for thinking through what is happening” or a “science of matter, which, rather than being anchored in a given institution, position, network or subjectivity, creates alternative conditions of existence.” See Isabelle Stengers, “Introductory Notes on an Ecology of Practices,” *Cultural Studies Review* 11, no. 1 (2005), 185; Dimitris Papadopolous, “Alter-Ontologies: Towards a Constituent Politics in Technoscience,” *Social Studies of Science* 41, no. 2 (2011), 195.

9. Erin Manning, “Creative Propositions for Thought in Motion,” *Inflexions* 1, no. 1 (2018), 22.



TINCTURING

Tinctures like cocktail bitters or amber-bottled herbal apothecary fare are commonplace. Perfume materials can be tinctured in the same way—medicinal and scented volatile compounds soluble in alcohol or oil. Organic matter is covered with grain alcohol or a neutral oil in a glass jar, shaken occasionally, and left to soak for months or even years. From weeds, moss, seaweed, and honeycomb to dirt, earwax, human hair, or pencil shavings, anything can be tinctured: foliage, petals, seeds, bark, resins, roots, rhizomes, rinds, spores. Botanical matter contains sugar and starches that act as a fixative, trapping scent molecules and slowing evaporation. The simplest method of tincturing is maceration. Materials are chopped, crushed, or powdered and covered with solvent, aged, and eventually strained. A percolation tincture is similar to brewing coffee: materials are packed into a cone and solvent is dripped through.

YOU WILL NEED

Fresh or dried aromatic materials

A Mason jar or other glass container

Grain alcohol, vodka, or rum (80 to 190 proof)

Cheesecloth or a coffee filter

HOW TO

Use the highest proof alcohol available—Everclear, for example. 151 proof rum can be run through a Brita filter to reduce its scent. 80% ethanol hand sanitizer without additives (traces of peroxide or glycerine are fine) can be used. While it is possible to make medicinal tinctures with oil, they are unsuitable for use in alcohol-based spray perfumes. Pack a glass container halfway with aromatic materials and fill the remaining space

with alcohol. Dried materials will expand as they absorb the solvent. Cover with a non-plastic lid. Agitate daily or at least weekly. Make sure to keep materials fully submerged so they do not mould. Highly volatile scent compounds will extract in a matter of days; less-volatile compounds might take several months. Some less-fragrant botanicals may need to be strained out and replaced occasionally. Eventually the alcohol will reach its saturation point. Sample at various stages using paper strips. Strain through cheesecloth or a coffee filter and remove spent material.

IDEAS

Bee propolis, clay, tarragon, tomato leaves, sap, pine needles, tea, coffee grounds, tonka beans, ginger, moss, cardamom

ENFLEURAGE

Some materials are too delicate for tincture or distillation. After harvest, for example, jasmine flowers continue to produce volatile oils that are destroyed by harsh solvents or heat. While commercial absolute extraction uses hexane and other hydrocarbons or supercritical CO₂, moody florals like jasmine, tuberose, or lilac can be captured via enfleurage. Newly opened and fragrant flowers are picked, separated from their calyxes, and layed on a tray of menstruum like lard, shea butter, or other fat (19th-century French perfumeries used tallow). The fat captures volatile scent compounds. Daily, the spent flowers must be replaced with fresh material. This process is repeated up to 30 times to create a scented fat or pommade which can then tinctured in alcohol—and the fat eventually strained out.



YOU WILL NEED

Fresh aromatic materials

Fat like coconut oil, Crisco, or shea butter

A glass tray or baking dish

A Mason jar or other glass container

Grain alcohol, vodka, or rum (80 to 190 proof)

HOW TO

Prepare a glass tray with a thin layer of fat (around 1" maximum). Use a fat that is solid at room temperature. Gather fresh flowers or leaves and place face-down in a single layer on the fat. Each day, remove the old flowers and replace with fresh material. The number of "recharges" needed varies wildly by plant. Generally, at least a dozen repetitions will be required to capture any meaningful scent. When the fat is loaded with scent, remove the remaining plant matter and transfer the fat to a glass jar. Cover with high-proof alcohol. The scent compounds are soluble in alcohol and will transfer from the fat over time, leaving it unscented. To strain off the fat, place the jar in the freezer to form a solid disc that can be lifted off the alcohol tincture.

IDEAS

Lilac, tansy weed, a storebought bouquet, marigold, geranium, jasmine, mimosa, acacia, hyacinth, violet, gardenia, linden, peony, magnolia, lily of the valley, tulip, blue bells, black walnut, shiitake mushroom, pineapple weed buds, currant, soapberry

ENFUMAGE

Enfumage is a neologism for the process of tincturing smoke. Incense or plant matter burned over charcoal is captured in an upside-down bowl covered in fat. This process can be repeated to load the fat with scent compounds. The fat is then tinctured in alcohol. The resulting tincture may be carcinogenic.

YOU WILL NEED

- Dried aromatic materials
- A self-igniting charcoal disc
- A large glass or metal bowl
- Coconut oil or lard
- A Ziploc bag of ice cubes
- A Mason jar or other glass container
- Grain alcohol, vodka, or rum (80 to 190 proof)

HOW TO

Coat the bowl in a thin layer of fat. Use a fat that is solid at room temperature. Ignite the charcoal disk and cover with loose incense, woodchips, conifer needles, or other dried plant matter. Cover with the (inverted) bowl. Place a bag of ice on top to prevent the fat from melting. Check occasionally and add more material or replace ice. When done, place the bowl right-side up in warm water to melt the fat. Pour fat into a glass jar and cover with high-proof alcohol. To strain off the fat, place the jar in the freezer to form a solid disc that can be lifted off the alcohol tincture.

IDEAS

Trappist incense, cedar shavings, sawdust, sage, palo santo, sichuan peppercorns, black cardamom pods, Christmas tree needles, black tea, piñon resin, frankincense, brown sugar, juniper berries, beeswax, oat straw, sweetgrass

DISTILLATION

Steam distillation is used to extract essential oils from organics and to distill alcohol (from wine, cider, mead, or fermented mash). The still's column is packed with material. Boiling water in a chamber below directs steam upward, passing through the material to release essential oil molecules. The steam and oil are pushed through to a coil or cooling unit where they condense and empty into a collection vessel. Distillate contains mostly water—called hydrolat, hydrosol, or flower water. It yields a small amount of essential oil. Oil is separated off using a pipette, separatory funnel, or Florentine separator. Hydrosol can also be made without a still. Pack material into a large stockpot with a heat-safe bowl or tin can placed in the bottom. Cover material with water below the level of the centre bowl. Put the lid on upside-down and fill with ice. As the pot simmers, the inverted, cooled lid will direct condensation downward into the bowl.

YOU WILL NEED

Fresh or dried aromatic materials
A copper alembic still
A low-flow aquarium pump or ice
Clear vinyl tubing

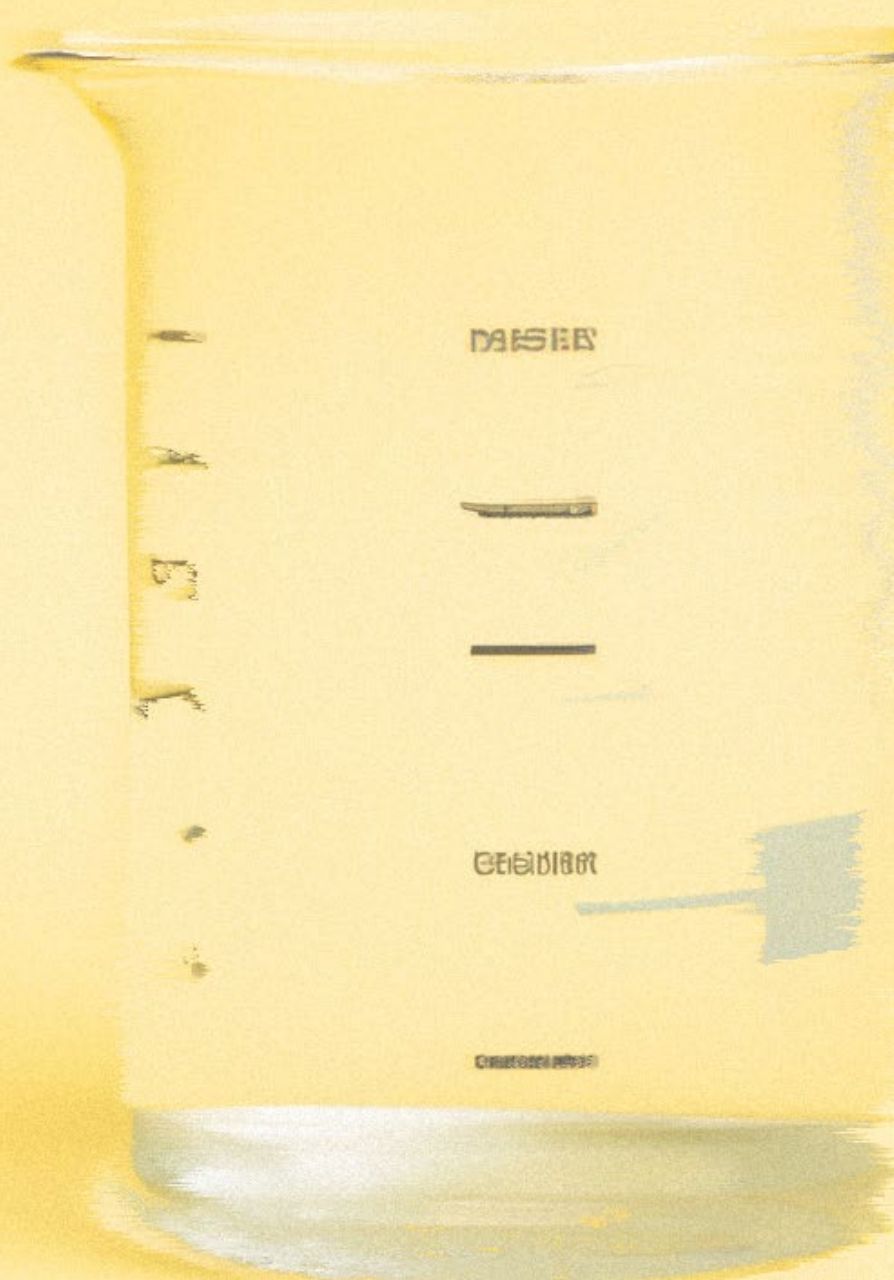


A plastic tub or bucket
Graduated cylinder or glass jar
Pipette or separatory funnel

HOW TO

A copper alembic still has four components: a pot for boiling water, a column which sits on top of the pot and holds materials, a cap covering the column to direct vapour down the condenser coil, and the coil unit itself. An additional tube may be included that sits between the cap and the coil. First, fill the still's pot with water. Leave an inch of headroom. Pack the column loosely with materials. Do not use powdered material—the cap can clog and cause an explosion. Connect vinyl tubing to the bottom spout on the back of the condenser coil. Affix the other end to the outflow of the aquarium pump which is to be placed in a large tub or bucket filled with cold water. The pump will push water up through the bottom of the condenser and overflow from the second spout above. Instead of a pump, you can manually feed ice or cold water into the condenser—but must do so continuously during distillation. Connect another piece of tubing to the top spout with the free end draining into the tub. Finally, place a glass collection vessel below the outflow spout on the coil unit. Teflon can be used to further seal the joints between components. Now, bring the pot to a boil and watch for the distillate. Monitor closely to ensure the still does not clog or run out of water. Separate the oil from the hydrosol using a pipette or separatory funnel. The oil can be used in any oil or alcohol-based perfume formula. Hydrosol is used alone and should be refrigerated.





DISEB

GEBIDIR

© 2000/2001/2002

SYNTHETICS

Synthetics are lab-engineered single molecules. Some are natural isolates extracted from plants or animals. Most are made from hydrogen, oxygen, nitrogen, and sulfur obtained from petroleum using heat or enzymes. Aroma chemicals are engineered for stability, both in terms of replicable perfume formulae and in ensuring a global fragrance supply chain unaffected by crop variations. Most synthetics are characteristic of a specific odor. Rhubofix smells like rhubarb. Benzyl Cinnamate smells like cinnamon. Synthetics are classed by chemical structure and generally share similar organoleptic or sense-experience properties. Alcohols smell green, herbaceous, or minty. Cis-3-Hexen-1-ol, for example, conjures fresh cut grass. Esters are fruity. Terpenes range from citrusy to woody—even spicy. Aldehydes are soapy, waxy, and ozonic. Ketones are musky and animalic: Oct-1-en-3-one smells like blood and mushrooms, 2-Acetyl-1-pyrroline like yeast or jasmine rice. Lactones are milky, ranging from butter to coconut or apricot. A commercial perfume formula might use dozens of synthetics in varying and trace amounts (see p. 26). Synthetics must be handled carefully. They can cause rashes, migraine headaches, and respiratory problems. Smell in dilution or on paper strips. Synthetics alongside naturals are mixed with alcohol to create perfume, see “Formulation” below.

The IFRA Standards Library lists regulated materials with details about toxicity, allergy, and sensitivity:

<https://ifrafragrance.org/safe-use/library>

Synthetics can be ordered from:

<https://shop.perfumersapprentice.com>

<https://pellwall.com>

FORMULATION

A perfume consists of a concentrate of synthetics and naturals diluted in high-proof alcohol. The ratio of total materials to alcohol determines the type of perfume. A 20–40% concentration of materials is a Parfum, 15–20% an Eau de Parfum, and 5–15% an Eau de Toilette. Eau de Cologne and Eau Fraîche are even smaller concentrations. A perfume can include dozens, even hundreds of notes. “Note” refers to both the identifiable scents in a perfume and to the scent produced by a single aromatic material. But not all scents can be replicated using a single material. Multiple naturals and synthetics are built into accords: multiple notes combined. Aroma notes are often categorized as top, middle, and bass (see p. 25), which refers to volatility or how quickly an aroma dissipates.

YOU WILL NEED

Natural and synthetic aromatic materials

Perfumer’s or other high-proof alcohol

Pipettes and paper test strips

A 0.01g precision digital scale

Glass vessels for mixing

HOW TO

Use either a scale or pipettes to measure out your formula components in grams or drops. A scale is only important if you wish to reproduce your scent. Check <http://www.thegoodscentscompany.com> for note descriptions for each material, IFRA safe use limits, and lists of potential blenders. Once you have mixed your concentration, leave it to age and blend or add it immediately to alcohol using a concentration percentage (from the “Formulation” section above). Be cautious with ethanol, it is highly flammable. Shake and test with paper strips.

Perfumes change drastically over time, and many need months to age. If you have used resins or other naturals, you will need to filter your final product.

FILTRATION

Perfumes made with naturals can sometimes be sticky or stain clothes. Filter use a micron filter, coffee filter, or a pinch of diatomaceous earth in the tip of a paper filter. Like brewing, perfumes can be “cold-crashed.” This entails putting the solution in the freezer overnight. Oils and contaminants will solidify and can then be more easily filtered out using any method above.

RESOURCES

Institute for Art and Olfaction

<https://artandolfaction.com>

Open Source Smell Culture

<https://opensourcescent.org>

The Good Scents Company Information System

<http://www.thegoodscentcompany.com/search2.html>

Smellwalks

<https://smellandthecity.wordpress.com>

Sensory Mapping

<http://sensorymaps.blogspot.com>

POLLINATOR SMELLWALK



Pollinator Smellwalk

CEALL QUINN

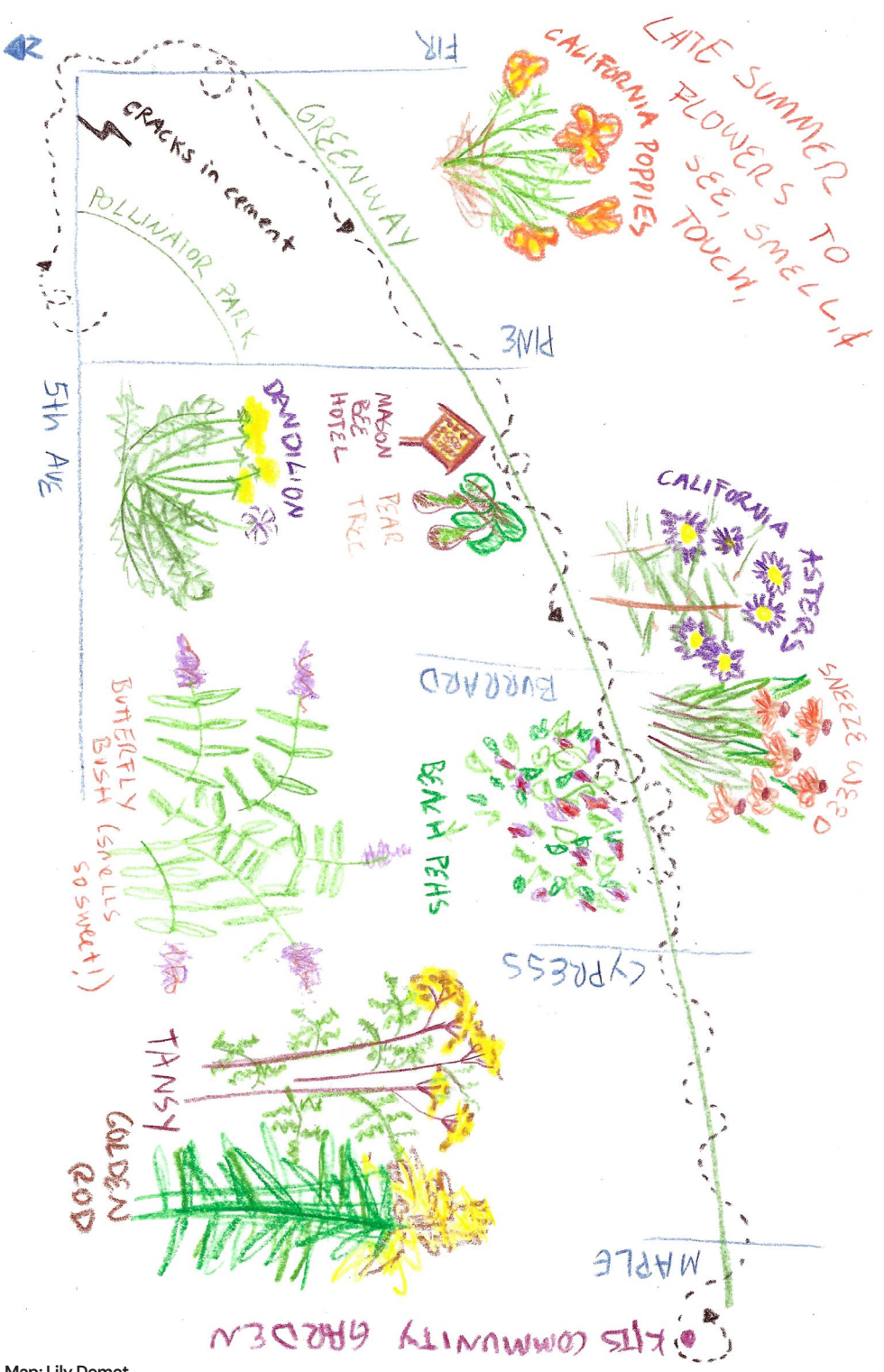
But smell, unlike air, is a sign of the presence of another, to which we are already responding . . . Might smell, in its confusing mix of elusiveness and certainty, be a useful guide to the indeterminacy of encounter?

—Anna Tsing, *The Mushroom at the End of the World*

LET'S TAKE A WALK

Walking brings us into place. The pace of walking invites observation as bodies and surroundings interface. Noticings become associations as memories attach to presence and absence. Repeatedly walking a route is a way of registering change over time.

The profundity of being here can easily dissolve in the flux of the everyday—hustling to work, paying bills, rushing to appointments. But any geographer worth their salt is quick to opine about the ways place discloses valuable information about how lives are lived, even as broader economic, imaginative, political, and ecological structures impress upon them. Places speak; they are diffuse with meaning. How then does one learn to listen and respond?



Map: Lily Demet

Entering into dialogue with place can be as simple as noticing your surroundings while intentionally expanding perceptual scope beyond solely human references. Ask questions like: What beings are around? What are they doing? How might they experience their share of the world? How do we inform the shape of each other's lives, and what are the stakes of that shaping? To perceive oneself as sensor in a common field co-composed with a multiplicity of others is a step towards nourishing an ecological subjectivity that maintains a respectful balance between the continuity and difference of self and others. Attuning to the co-participants that collectively produce place while walking is a primer to the delight, strangeness, and potential transformations that flow from encounter.

I invite you to slow down together as we hone our arts of attention to participate in the "open-ended gathering" (Tsing 2015, 23) that is the urban everyday. We will do so through engaging our sensorium, and specifically honing into the affordances of olfaction, AKA smell, in relation to pollinators and their floral partners.

Smellscales in the city are redolent of political ecologies. Urban planning and aesthetics, the management of flora and fauna, and the unruly persistence of lives all bear the signatures of scent. They are organized by certain imaginaries where power relations mark out who and what belongs in place. A whiff indicates presence, indexes relational networks, registers differentially across multispecies sensoria. Attending to the olfactory invites a consideration into the more-than-human relationships that constitute the life of cities.

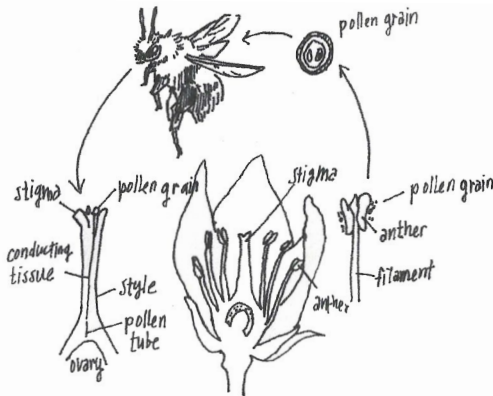
While the urban is often withdrawn from ecological imaginaries, attending to city smellscape can restore a felt sense of multispecies co-habitation, or, an attunement towards the diverse lifeways that compose the pulse of shared place. The city is an accretion of disjunctive processes. In Vancouver we find a gathering of climate, geology, biology, coloniality, imagination, economy, development, migration, and more—all mixed up in the present and in contested visions of the future. What would it mean to assert a multispecies right to the city? Can olfactory approaches reconfigure the ways ecological imaginaries interface with the urban? How might attentive scent practices invite a conscious registering of the more-than-human everyday? And, what can smellworlds tell us about how pollinator relations unfold in urban ecologies?

CONSIDERATIONS

1. How do you think of your relationship between walking and place?
2. How does walking oblige you to notice embodiment—yours and (Earth) others?
3. What are some of the noticing practices you employ in your everyday navigations?
4. What possibilities are contained in encounter? What might encounters tell us about how the intimate and the enormous rub up against one another?
5. Can you locate the source of a smell you detect?
6. What might this tell us about how desire and planning organize place? How space is shared among many beings?

WHAT IS POLLINATION?

A key process in plant reproduction, pollination is the transfer of a pollen grain from a plant's anther to its receptive stigma. A pollinator is an animal that moves pollen between conspecific plants.

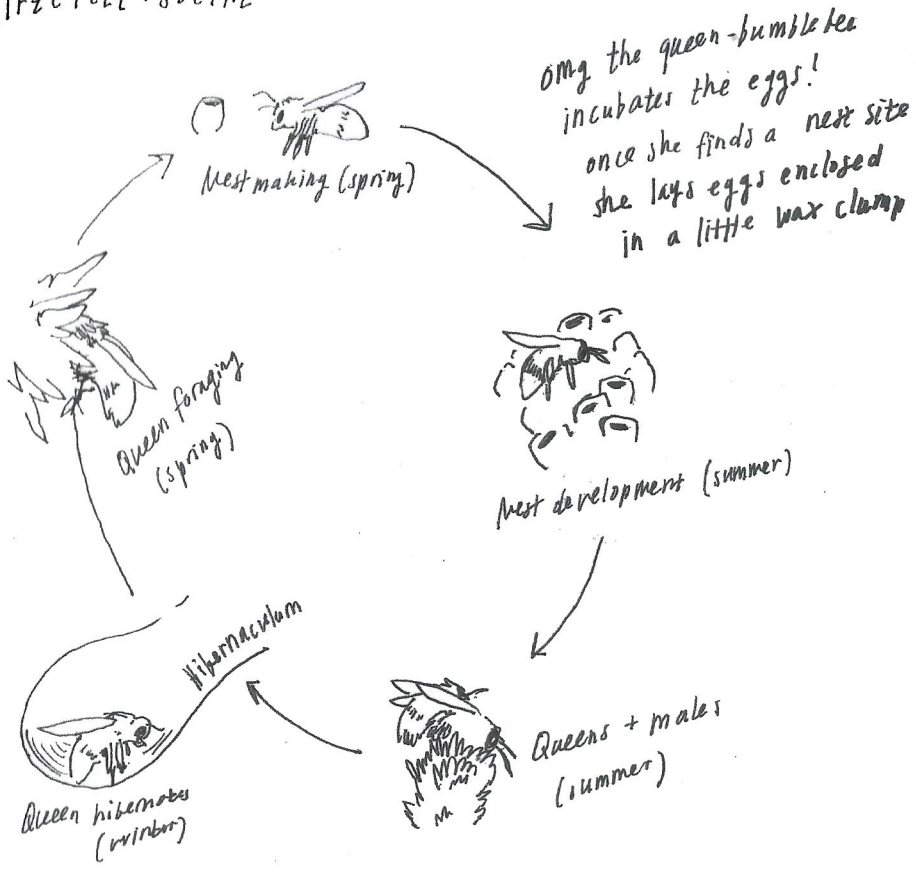


4. around 90% of all flowering plants are animal pollinated.

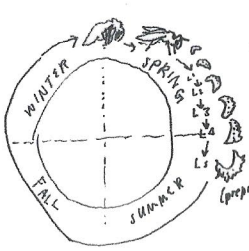
WHAT ARE BEES?

The explosion of flowering plant species in the Cretaceous period (between 125 and 65 million years ago) correlates to the emergence of bees. A carnivorous wasp started collecting pollen for protein, eventually converting to a strictly vegetarian lifestyle, becoming what we know as bees. There are over 20,000 known species of bees globally with nearly 500 described in so-called British Columbia. Bees are foragers, and their physiology and development reflects this. They are fantastic pollinators because the entirety of their life cycle is dependent on the pollination event. Their larva only consume pollen, so adults collect large quantities, moving it from flower to flower in the process. They have evolved specialized morphological structures to aid in the transportation of pollen like pollen-carrying structures and hairs, combs, brushes, specialized mouth-parts and tongues—and a positive charge that draws negatively charged pollen grains to them.

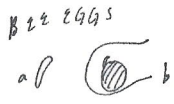
LIFECYCLE: SOCIAL



FROM EGGS TO ADULT - growth + dev of s. bees



← life cycle of a typical solitary bee in a calendar yr.
 - adults active for short time - emerge, mate, construct + provision nests, die
 - 5 larval instars that develop in brood cells
 - last instar (prepupa) undergoes diapause
 - pupation takes place early in the season when conditions are favorable + adults emerge thereafter



BROOD-CELL, egg + pollen loaf

1.5 BEE SOCIALITY

SOLITARY - most are solitary in MA! "she is the full package" - worker & queen

AGGREGATIONS - some solitary bees nest in aggregations - many nests found together

COMMUNAL - some species of solitary bee / individuals in a species nest communally
- sharing same entrance

or **FACULTATIVE SOCIALITY** - see pg. 36

SEMISOCIAL - use same nest + cooperatively provide for offspring

EUSOCIAL - all individuals share a nest, mother works alongside daughters, split nest-making + reproductive duties, they comprise mother + daughters (she meets her daughters!)



→ many bees fall between social + solitary & there are species that fall between the two depending on factors like environmental conditions. those bees are called facultatively social + sweat bees are particularly known for this

ex. an original reproductive female establishes colony (original queen) + produces offspring.

some things that can happen... → offspring stay in her colony + function as her workers. colonies w/ workers will build + become larger overtime, mb over year to year. when original queen dies, daughter might become new repro for colony

→ another thing that can happen is that offspring, they may leave + go join another colony nearby

→ lastly, offspring may leave nest + start nest elsewhere, acting as solitary females

NESTING

Most bees (around 70%) nest in holes in the ground.

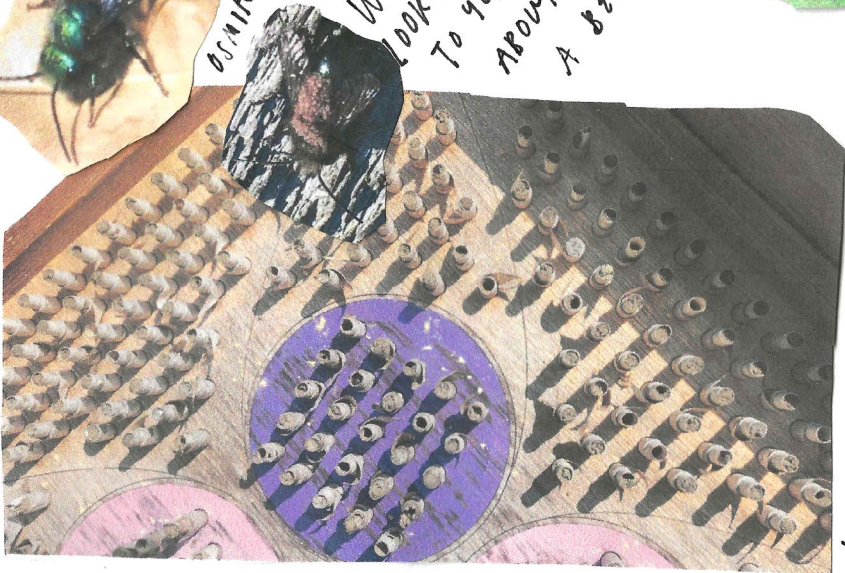
Those that don't nest in the ground choose pre-existing holes (hollowed out twigs, pock-marks in rocks, tiny holes in bricks).

Some bees use a waxy/cellophane substance to line walls to keep out bacteria + moisture.

Other bees line their nests with pieces of leaves, flower petals, and the hairs that coat leaves.



Ulmia covered in mites from unmaintained tree hotel in
WHICH HOUSING LOOKS MORE INVITING TO YOU? HOW ABOUT A BEE? P.



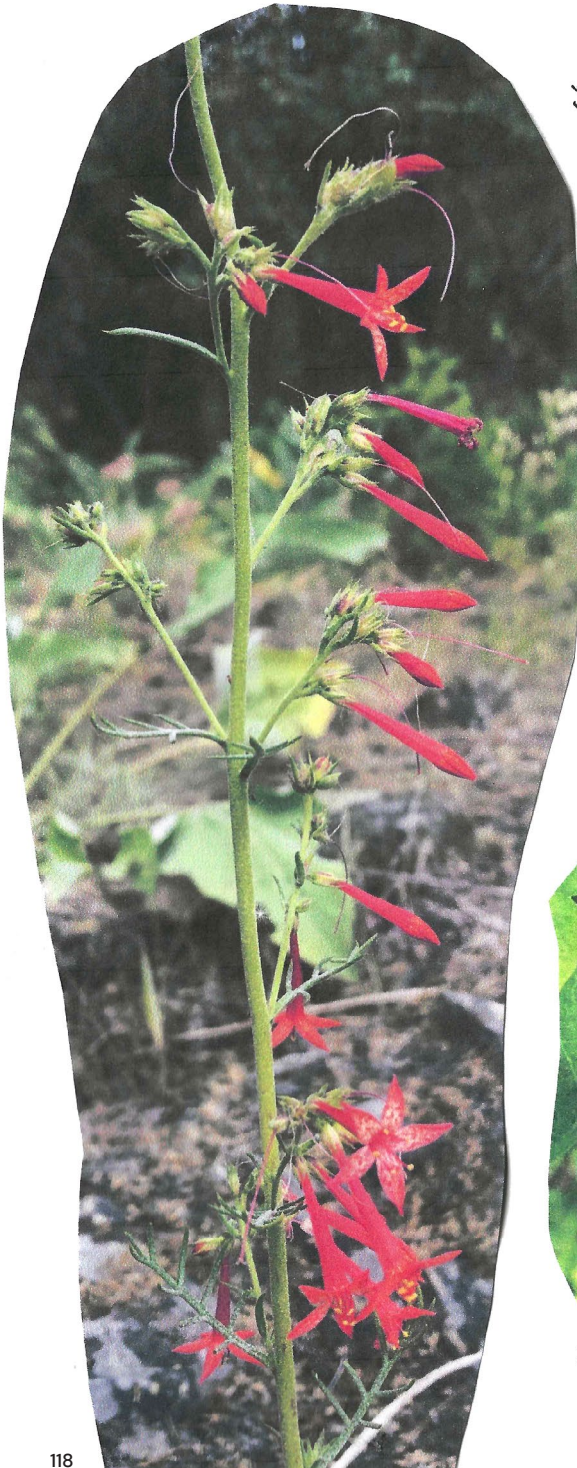
Bees need social distancing too!

Olfaction is the sensation of smell that results from the detection of odorous substances aerosolized in the environment. In bees these chemical compounds bind to receptors located inside thin hairs—sensilla—on the antennae. Bees utilize scent as cues to distinguish their nests from others. In eusocial species, scent plays a role in kin recognition between nestmates.

Plants emit volatile organic compounds (VOCs) to dialogue with organisms in their environments. They communicate a variety of messages, ranging from defensive to alluring. In pollination “highly specific associations between flowers and insects are typically mediated by chemical signals, that act as floral filters together with visual signals, floral morphology and specific types of reward” (Bowmeester 2019, 895).



Studies have shown that specialists use a highly attuned sense of smell to locate their hosts. For example, *Andrena vaga* shows a strong response to 4-Oxoisophorone, a common constituent in the scent of its host, *Salix spp.* Honeybees do not respond to this compound (Ramirez et al. 2023).



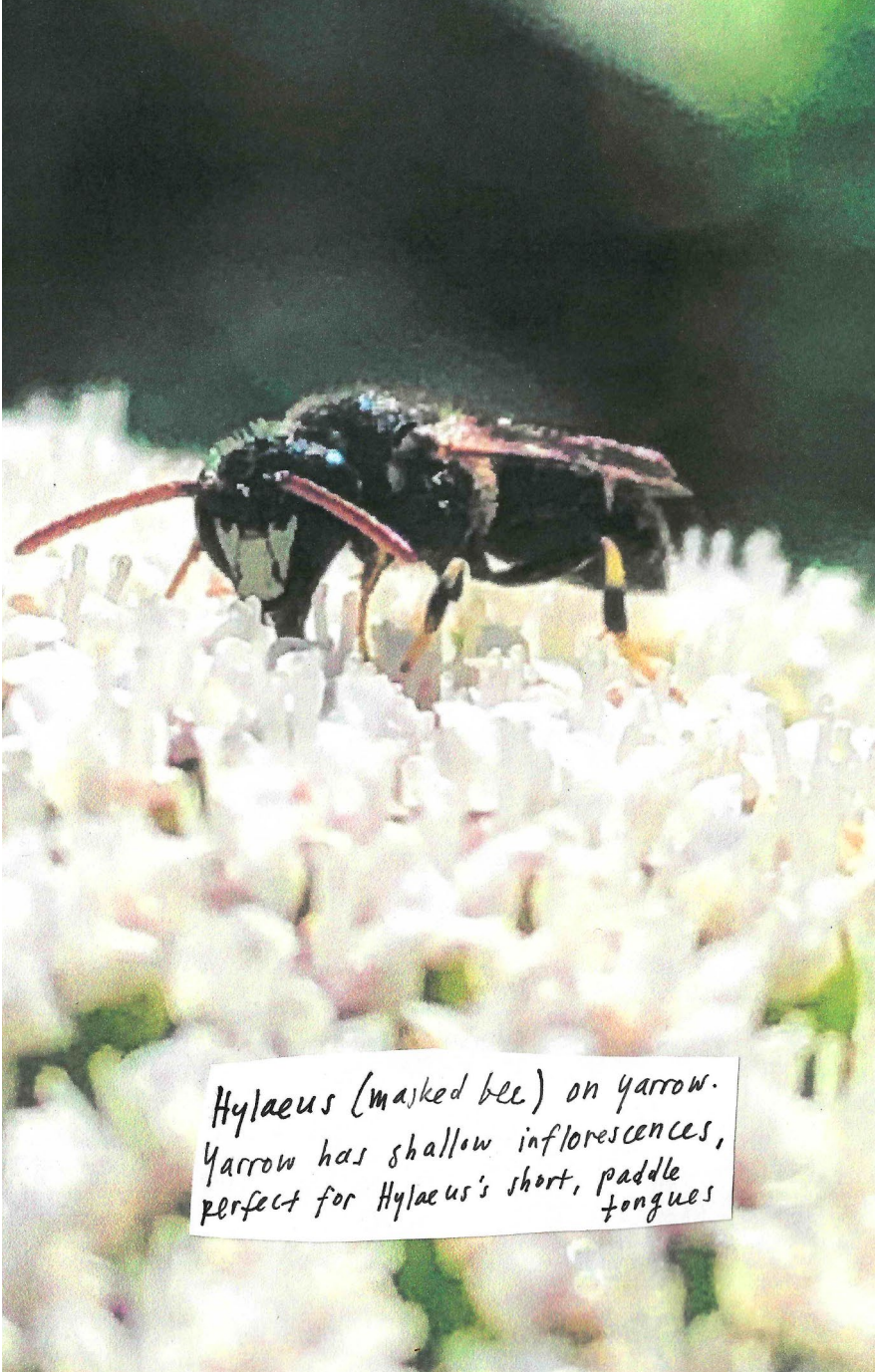
SCARLET GILIA - CHECK OUT THOSE
CORDILLAS!

FLORAL SHAPES INVITE DIFFERENT BEES.
BUMBLE BEES HAVE LONG TONGUES & CAN
ACCESS NECTAR IN A DEEP TUBE (THOUGH
SOME HAVE SHORTER TONGUES & RESORT TO THIEVERY
THROUGH BITING A HOLE IN PETALS CLOSE TO THE NECTARY)



WHITE SHOULDERS BUMBLEBEE

+ SNOWBERRY



Hylaeus (masked bee) on yarrow.
Yarrow has shallow inflorescences,
perfect for Hylaeus's short, paddle
tongues



SMELLWORDS

PUNGENT

YEASTY

FLORAL

SULFUR

MOULDY

BURNT

NUTTY

CARAMEL

GREEN

SOUR

FISHY

STALE

DANK

LEATHERY

FRAGRANT

MEDICINAL

SAVORY

MUSKY

SPICY

BERRY

CITRUS

PETROLEUM

EARTHY

RESIN

SWEET

HERBACEOUS

SWEET

OAK

GRASSY

ROTTEN

RAINY

PINEY

ACRID

BITTER

MINTY

FRESH

TINCTURES

Tincturing archives place through scent. Through covering organic materials in grain alcohol, sugars and starches “act as a fixative, trapping scent molecules and slowing evaporation” (Arthur 2023, 7). Collecting smells over a season and letting them extract and saturate alcohol over time is one way the ephemerality of smell might be isolated, preserved, and transformed. Returning to tinctures as they age enables a kind of return, evoking place, the organic entity, and seasonality all mixed together with a practice derived from portable acts of attention. This capture and conversion can then be shared.

See Smellworlds for a DIY tincturing guide.



QUESTIONS

1. How does the practice of tincturing invite arts of attention?
2. What is condensed in the scent archive of tinctures?
3. Might considering sensoria across difference aid in place-making that aims towards multispecies flourishing?
4. What do scent politics tell us about inclusion/exclusion? How do these demarcations cut across species lines?

INVOLUTIONARY MOMENTUM

Hustak and Myers (2012) offer the concept of involution as a companion and departure from hierarchical, reductionist, and functionalist tendencies in theories of natural selection and strands of chemical ecology. Rather than the vast timespans that inhere in genetic, evolutionary time that sees populations as vehicles of gene transfer but misses everyday interactions, the authors turn to present encounters and reconstrue flowers and insects as practitioners that express desire, play, experimentation, and improvisation in their relations with one another. Involution asks how species are drawn towards one another, how lives are folded inwards.



Critiques of anthropomorphism (making 'human like') might guard against human projections of subjectivity onto the lives of earth others, but are there ways that this perspective performs a stripping of agency, creativity, and understanding of the more-than-human? How might formalized rhetorics constrain narratives and imagination of interspecies relating?

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LAB 2

DOING
STS

POLLINATOR SMELLWALK

How can we develop an ecological self in urban settings? What forms of attention can we deploy to cultivate nonhuman kinships? Approaching pollinator worlds, we'll ask these questions from the perspective of the amateur: "one who loves."

Participants are invited to dabble and pause in a space of non-instrumental bee noticing. With scraps of more-than-human ethnography, urban political ecology, and the science of bee and floral perception as guides, we'll gather for a bee smellwalk.

Free public event
Led by Ceall Quinn

1-4pm, August 27th, 2023

Pollinator Park
West 5th and Pine

doingsts.com











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OTHERWISE TASTES

SECTION THREE



GOU QI ZI (GOJI), JUE HING ZI
(CASSIA SEED), JU HUA (CHRYSE.)
SANG YE (WHITE MULBERRY LF)
LIAN CAO (LIC.), ROOIBOS VIN.

Alternative Empirics

MATHEW ARTHUR

Since the dawn of allopathic medicine, surgeons have cut open bodies to learn about and repair anatomy and function, privileging distinct, identifiable organs and visible bodily structures as sites of discovery about disease. They would aggressively cut through and rip out the fascia or connective tissue and toss it for disposal on the operating room floor. All because a way of seeing and valuing was maintained in a set of practices, including medical education textbooks, anatomical drawings, surgical tools and procedures, and so on. Now we know that the fascia are like the mycorrhizal layer of the forest floor that sends signals and nutrients between trees. Fascia communicates with organs, holding the body together, supporting and protecting its complex balance.

Traditional Chinese Medicine, largely seen as a “complimentary” approach by Western biosciences, has understood this kind of affectivity for millennia—without complex medical imaging technologies, through careful multisensory observation, and through touch. The difference between Western and Chinese medicine is the distinction between examination or “yàn” and pattern or “lǐ” (馬光亞 [1998] in Law & Lin 2014). The examination looks at everything in the greatest detail (think of electron microscopes, for example) while, by contrast, Chinese medi-

cine is all about patterns accumulated from experience (like different rhythms or tones of pulse). Unlike Western anatomical drawings, Traditional Chinese medical charts are not read as a realist, one-to-one rendering of visible objects, but rather as a symbolic map for ongoing knowledge acquisition in the face of constant change. When we decenter our own units of measurement, conceptual terms, and ways of representing, we're forced to pay attention to shifting relationships.

Similarly, Blackfoot theorists Leroy Little Bear and Ryan Heavy Head observe that mainstream Western knowledge practices are anatomic at base, targeting the “consistent composition and behaviour of solids within solids” (2004). But there are other ways to move with matter, other registers of practice that hatch forms of anticolonial resistance. Otherwise Tastes, our series of critical herbalism and fermentation workshops explored alternative empirics. Instead of taking technology as high-tech and high-definition, we looked to subtle qualities of light, touch, tone—the particular effervescence of a ferment, the warming or cooling attributes of herbs. Instead of dissective and extractive anatomies, we used scent, taste, colour, palpation, and other so-called surface modes of appraisal that blur where bodies start and end.

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Critical Herbalism

HAYDEN OSTROM

MONAD

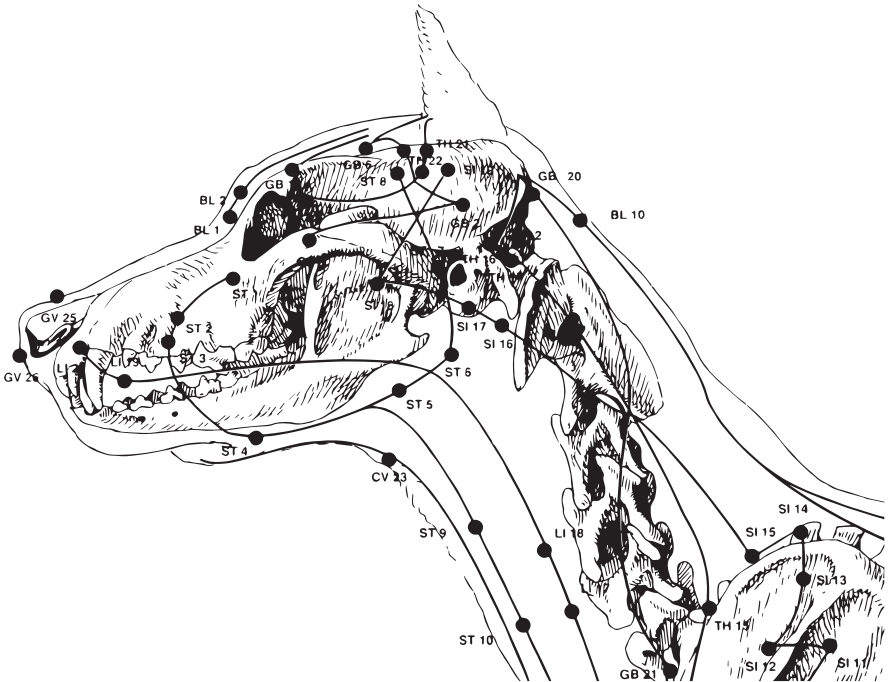
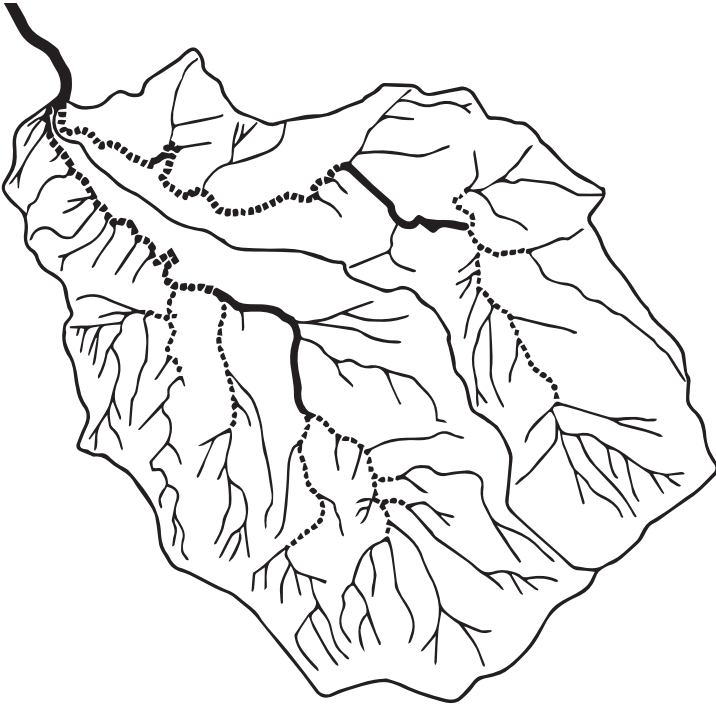
Daodejing begins with: “The Dao that can be told is not eternal Dao.” That which is itself is already articulating in entirety. Everything is Qi. A pure vacillating movement: matter to energy, energy to matter. A flux of potentials along the multidimensional plane of Qi. That from which all vacillates.

DYAD

Qi is made legible through Yin and Yang. Both are fundamentally still Qi. They have different properties and can be thought of as demarcating two fundamental categories. From there, everything in the all is either Yin or Yang: a metaphysical binary.

TRIAD

Through the concept of Qi (vacillating matter-energy), Chinese medicine opens thinking about body, land, and cosmos as inextricably linked—scalable. It follows immanently that body-mind-soul are a triad, each one producing and affecting the other: 道.



MERIDIAN

Just as we talk about a river in an ecosystem, we can speak of meridians. They are made of the same thing: Qi. Body is land and the land is our body. The six channels are internally and externally linked. Dogs have meridians. Plants have meridians. Even a river has a Xi (cleft) point. When we come into balance we bring the world into balance. Much like a terrestrial ecosystem needs soil and its intermediaries—minerals, carbon, nitrogen, fungi, bacteria—we too need the same. Our bodies, for example, rely upon hemoglobin proteins to oxygenate blood and allow for cellular respiration. At the centre of hemoglobin, acting almost like an organic crystal, an iron ion charges, facilitates binding to oxygen. Similarly, plants rely on chlorophyll to accomplish a similar binding: magnesium and carbon dioxide. Mirroring bodies. We can couple relationships of body and land through herbal medicine.

PAO DING JIE NIU

Ding was King Liang Hui's butcher. Wherever his hands touched or feet stomped, the sound of skin-and-bones separating followed—loud, like the Mulberry Woods Dance. Liang Huiwang asked, "How can your skills be so brilliant?" Pao Ding replied, "What the minister inquires about is the law of things, it exceeds the slaughter of cattle. When I started butchering, I saw nothing but the whole ox. After three years, I no longer saw the whole ox. I follow the Dao, striking apart large gaps, moving toward openings, following the natural structure. Even tendons webbed to bones give no resistance. A good cook goes through a knife in a year because he cuts. An average cook one a month—he hacks. My knife is nineteen years old. It has butchered thousands of oxen. But the blade is like new.

—Zhuangzi

GAP

Gaps depend on the object they separate. Is a separation the same as a gap? A gap is a temporal disjunction, a spatial cleaving, a lingering lack of movement in a stream of what is, was, or might be. A hole in the whole. In its fading, a gap produces something more. An absence that potentiates. Gaps hold rhythm—movement created through the punctuation of space. They ask: does movement create space, or space create movement? Chinese medicine is about potential movements that create space. Gaps occur. They make boundaries between ideas, tissues, bodies, words, musical notes, mountains, and crowds. Acupuncture points or their meridians are found in the gaps of interstitial fluids, tissues, vessels, fascia, and lymph as they overlap and populate the body. Not all gaps are the same. Some occur suddenly. Some murmur in presence before their inevitable collapse. Others are barely perceptible. Like the geography of meridians, a landscape's form informs which gap presents. Things move through gaps. They do not linger—marked only by an absence: the gap. Gaps are connections. Plants fill the gaps between sunlight and shade, earth and sky. Plants are native gap dwellers; herbal medicine shifts what's agape. When something is agape, it is connected. It must change.

LAB 3

**DOING
STS**

CRITICAL HERBALISM

If we are tangled up
in more-than-human
worlds, what counts
as good health?
How can we cultivate
reciprocity in health
practices?

Join herbalist
Hayden Ostrom
for a DIY herbalism
workshop.

1–4pm, May 6th, 2023

Studio Utopia
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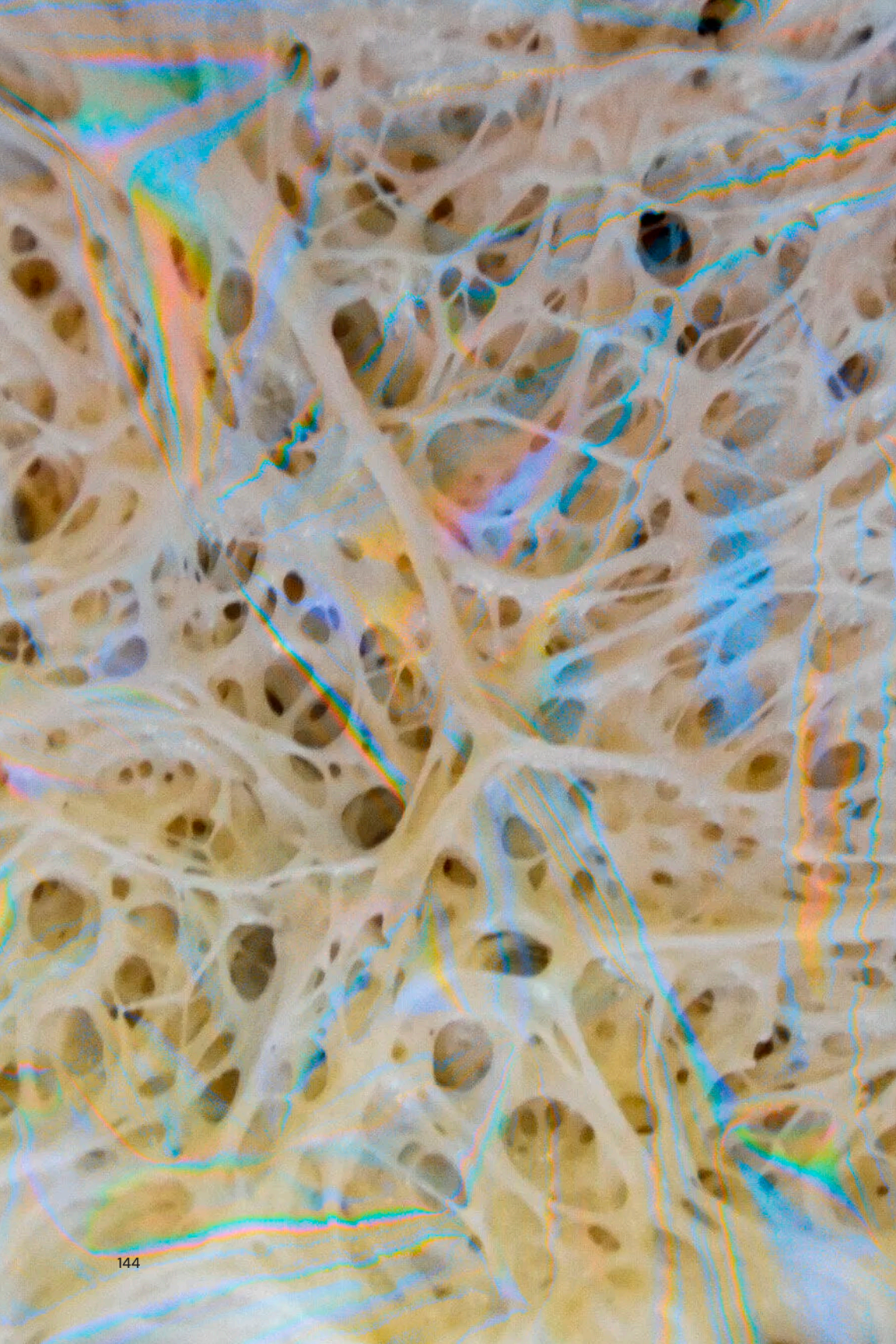
doingsts.com

**OTHERWISE
TASTES**









My Starter and I as Cyborg Holobiont

ROWAN MELLING

When I become intimate enough with someone for them to meet my family, I also feel compelled to introduce them to my sourdough culture. My bacterial friends and I have a long and deep relationship, closer in some regards than I have with most humans, as our bodies continually merge with and nourish each other. In its relation to me, the sourdough culture also becomes a technology; indeed, it is one of the most ancient biotechnologies for processing grains.

When a technology is also a living thing, it throws into relief the relational nature of all technology. Separated from me, the starter exists in its own being as bacteria; but in relation to me and my activities it becomes something technological. I sometimes think about a world after humans, in which the objects that currently seem technological in essence (iPhones, laptops, tow-trucks, cash registers, cranes) would slowly fade into their being in relation to nonhumans, ceasing to be technology and becoming metal, glass, glue, plastic, dust, hot surface for sun-bathing lizard, container for tide pool, barrier to worm, tall point for eagle nest. Speak-

ing from this peacefully-apocalyptic reverie, I would challenge the claim (from John Durham Peters [2015] and others) that “durability” marks something as technology and would emphasize relationality. Something technological only endures as such through human relationships. Indeed, the sourdough starter is a technology, but to think of it as a “thing” with durability is not quite right. It resists an individualizing gaze in its rhizomatic, emergent relatedness.

My sourdough starter’s technological being in its relationship to me opens questions about our awareness of each other. How does it feel about me? What does it know about me? Before answering, it’s important to actually locate the bacterial culture. Where is it, exactly? It is in an old cream cheese container in my fridge, indistinguishable from its bed of moist rye flour. It is waiting there to be brought forth and “activated,” not with an electric button, but with different forms of energy: flour, water, and heat. Yet, it is not just in the fridge; it is also all over my hands, always, and has been for years. Sourdough bakers’ hands’ biotic make-up mimics that of their starters; my starter has affected my microbial being. In this way, the sourdough starter is spatially dispersed, and its awareness of me is equally hard to pin down. Indeed, as it merges with my own microbial biome, it is hard to abstractly separate it from me: it may even form a part of my own awareness of its awareness. We form a holobiont.

Like all relationships, this one requires work and renewal. If I stopped baking bread, the culture in my fridge would slowly die, and the microbial biome of my hands would shift towards some new biotic bouquet. In this way, my sourdough starter is aware of my rhythms and has adjusted its life to them: it

knows each week it will come out of the fridge and merge with me again, that I will feed it, and give it warmth. It knows what I eat, it knows how warm my apartment is, it knows the kneading rhythm of my hands. It has adjusted its microbial content to favour dark rye flour, periods of dormancy, the fecund biome of human hands, abrupt changes in temperature. In this relationality, its knowledge of me and of itself are inseparable. It is productive to resist thinking of the sourdough culture as a “thing”: it is its relationships.

Its knowledge of the world at large is more mysterious. Here the “it” of the sourdough starter really finalizes its dissolution, as it (they?) steps into being as a kind of temporal-relational medium. The sourdough starter in some ways exists across time and space, and is in no way confined to my fridge and my hands. I was given a scoop of the sourdough starter in 2014 by a man named Jona, who in turn got a scoop from someone named Sina sometime before this in Germany. How old the starter is, is a mystery; and what parts of it are ancient and what new is equally uncertain. This invites the question: is the starter in my fridge of one being with the starter in Jona’s fridge, wherever he ended up in the world? Do our starters form similar holobionts with us, such that I become intimately related to Jona through the medium of the bacterial culture that we share on our hands? And all the people I have since passed the starter on to, Dave and Nixi, Amna, Nicola, Ermen, and so on...are they part of this meta-holobiont? What is the sourdough starter’s experience of the world, dispersed across countries and times, bonding people together through their nourishment?

I'm reminded of Hölderlin's poem "The Ister," in which the river forms a site for human settlement, relationships, connection, and technological being in a way that foreshadows current argument that environments are media. Like the sourdough starter, the river in the poem is a non-artifactual technology of human becoming...and "yet what that one does, the river, / Nobody knows."

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使いやすいパッケージ

スプーン印

上白糖

400g



幸せのちからになる
DM三井製糖

FUCK YOU CYRUS

LAB 3



DOING STS

PERCEPTUAL FERMENT

"Vinegar mother is both catalyst and remains. Leaving a cloudiness in her wake, she is a reminder of the dephasing from sugar water to vinegar, and of the fact that what is produced is always less a substance in itself than a relational milieu."

Doing STS hosts a lecture and Q+A with Erin Manning, followed by a hands-on DIY vinegar fermentation workshop. Tools and materials provided.

Free public event
1-4pm, June 5th, 2023
Unit 17, 2414 Main Street
Text (804) 842-4412
For entry



doingsts.com

OTHERWISE TASTES

TO MAKE THE BEST START WITH THE YEAST 20

Perceptual Ferment

ERIN MANNING

In the chemical breakdown of sugars by microorganisms, the ferment produces a transduction from sugar water to alcohol to vinegar. Effervescence is the perceptible effect of this process, heat and bubbling marking the initial dephasing from mango seed, sugar, water and yeast to fermented proto-alcoholic mixture, this irreducible interval—neither quite alcohol nor yet vinegar, carrying the echo of the sugar-water it once was as it is simultaneously transformed into the acidic milieu it will eventually become. As the new milieu phases into existence, a voyager tends to emerge: the mother, a symbiotic colony of yeast that ferments the sugar and acetobacter that will convert the mixture to vinegar. The mother—cellulose and acetic acid bacteria (*mycoderma aceti*)—feeds on the sugar in the mixture, thereby hastening the process of acetic transformation. This film, spongy yet firm to the touch, is one trace of a complex process of relation with oxygen as a key participant. Cut off the oxygen and the process stills, coming closer to the final form it will seem to have taken.

Mother is both catalyst and remains. Leaving a cloudiness in her wake, she is a reminder of the dephasing from sugar water to vinegar, and of the fact that what is produced is always less a substance in itself than a relational milieu. In an ethos

of a poetics of relation, the mother is the irreducible share of a process still underway. She is the trace the process produces and leaves behind. She can be excised from it, but the ensuing milieu will always carry the effects of her having been constituted by it. And when she is fed into new sugar solutions—new vinegars will be seeded by her metabolizing presence—she will continue to produce more of herself, which is to say, more potential for transduction, the activity of transformation whereby mixtures individuate, subsequently producing dephasings that activate new processes. And though products will emerge—vinegars with singular tastes, textures and perfumes—these (like all products) will never be able to be returned to the sum of their parts, will never be reducible to the sugar water they once were. They will always carry the effervescence that fostered their transduction.

Perceptual ferment is the expression of the exuberance of a process dephasing. To connect to the milieu of its individuation, abduction is necessary. Abduction, a concept proposed by Charles Sanders Peirce, necessitates what he calls “perceptual judgment”. Brian Massumi calls “perceptual judgment” “perceptual feeling.” A perceptual feeling, Massumi proposes, is a feeling “without the actual perception” (2011: 106). “They are judgments without the actual judgment: direct perceptions of the world’s acquired complexity, incoming, flush with the bare-active firstness of experience feeling its way into a next event” (Massumi 2011: 11).

Abduction is not inference—“a conclusion reached on the basis of evidence and reasoning” (OED). Active in the environment of what William James calls “pure experience,” perceptual judgment does its work in the immanent field of an activity’s coming to expression (James 1906). This “bare active firstness

of experience” into which abduction does its work is the welter in which all that is coming to expression has not yet parsed itself into category (Massumi 2011: 11).

Alfred North Whitehead has a vocabulary for the expressive force of the milieu in the parsing of the singularity of an actual occasion from the welter. He calls this causal efficacy. Brian Massumi and I have called it “entrainment” in an effort to amplify the relational force of its in-gathering gesture (2014). Across the entrainment, alongside and within it—inseparable, irreducible—is the activity of the field of sensation, or what Whitehead calls “presentational immediacy” (1927). Massumi and I have thought of this as “entertainment,” which is to say, “how the field entertains itself” (2014).

The terms causal efficacy and presentational immediacy are at the basis of Whitehead’s theory of perception, a theory that seeks to distance itself from any account of perception that depends on a traditional subject-object distinction and reifies what he calls the “misplaced concreteness” of “simple location” (1967). Perception is always abductive in Whitehead, composed in the lively interstices of a speculative pragmatism that is committed to the how of an activity in the pragmatism of its expression as occasion of experience as *well as* to the speculative quality of excess or more-than it carries.

What distinguishes Whitehead’s account of perception from most is that he doesn’t begin with a subject sensing. That is to say, he refuses an account of perception that would produce the perceptual vista through the reduction of experience to sense data, perception mediated. In this refusal, he is clear that an account that situates perception as a “mediation of our bodily sense-organs, such as eyes, palates, noses, ears, and the diffused bodily organization furnishing touches,

aches, and other bodily sensations by bodily sense-organs” reinforces the mistaken presupposition that “all percepts are bare *sensa*, in patterned connections, given in the immediate present [and] that our experience of a social world is an interpretative reaction wholly derivative from this perception” (1967: 177-178).

Instead of beginning with the sensory (as sense-presentation), Whitehead begins in the associated milieu of relation. Worlds are activated not through the channels of sense data mediated by impressions received by a subject, but through a directly relational agencement of a field tending toward an angle of activity. This is causal efficacy: the coming into itself, for itself, of a relational field. This relational field, in its very coming to be, is imbued with qualities that tend both toward its past inheritances in the minute intervals of the present-passing, and toward potential futurities. Imbricated in this spread of intensities coming into the relational feel of this singular entrainment is the thisness of its colour, its tone, its texture. This is presentational immediacy, or entertainment. By itself, if it could be separated out, presentational immediacy has no purchase on existence—it is “vivid, precise and barren” (1927: 23). It only entertains the occasion when it is entrained by it. The feel of the world does not precede the making of its relational milieu—they are made by each other, in the double articulation Whitehead calls symbolic reference.

Perception’s ferment is the agitation at the cusp where entrainment and entertainment come together. As the feel of what has not yet fully phased into form, it is the carrier of the differential that foments in the irreducibility of existence to itself. Here, where perception has not locked itself into inference, where presupposition is allayed, even if for the briefest

interval, the lively more-than of worlds coming into themselves can be felt. The “stimmigkeit of attended presences,” to borrow the vocabulary of Nikolaus Gansterer and Alex Arteaga, is at work here.

DeafBlind poet and essayist John Lee Clark has defined distantism as the operation through which the distant senses—vision and hearing—propel and police a “standing apart” that becomes inseparable from the normopathic and ableist value systems that hold up existence.¹

Distantism is built into inference: all inference presupposes not only a standing apart (between subject and object, or symbol and meaning) but also a “common” ground of reference that is considered to be a given for all experience. In the context of DeafBlind life, this means that there will always be a presupposition that the modes of conduct and perception used by hearing-seeing people are the ideal baseline for all: walk in the middle of the sidewalk even if that means you have no bearings (don’t crawl!); presuppose that what visually expresses itself in the surrounds is necessary to connect to them (feign interest in all that centers vision!); reduce or refuse touch that in any way challenges the normative standard of tact (stop reaching-toward!); learn to communicate in a language that by necessity excludes you (make sense of signs that chiefly operate in visual space!), and know the world only through the mediation of an intervention (hire an intervenor!). If this were “just” a practice, that would be bad enough. But this is the model of perception that is taken as the baseline of existence.

1. https://wordgathering.syr.edu/past_issues/issue43/essays/clark.html.

Whitehead's symbolic reference refuses this common ground and the presuppositions it normalizes, concerned instead with the emergent quality of a perception activated in the associated milieu of feeling where feeling is never reducible to a preexisting subject but is, rather, the lure that motors expressibility. Imbricated in the double articulation of an overlap unparseable, symbolic reference does not refer *to something*. It abducts a something-doing that perceives (or prehends) the world into act.

In its abductive logic, this prehensive force is never reducible to its-self. The qualities that populate it and the conduit that motivates it are inseparable and unparseable. Against distancism, perception is motored into activity by a double articulation that is born of the event's own agencement. There is no intervenor here.

At the cusp of entrainment and entertainment, in the interval of how a world fields and is fielded, in the activity of perceptual judgment, an impasse presents itself. How to consider notation even when understood as the conduit (and not the enforcer) of a certain account of what agitates experience without adding to it the intervention of a mediator? How to remain in the abductive potential of what transversally agitates at the interstices of the thinking-feeling of what happens of perceptual judgment? How to not reduce the lively atmosphere of experience as yet unformed to a form-taking that fosters a normopathic standing-apart?

Notation, Gansterer and Arteaga propose, "cannot be performed as an operation of 'apprehension,' 'grasping,' or 'capturing' because these operations can only be realized with phenomena that are clearly objectified presences." In its becoming-verb, notation notates "a contact with a non-objec-

tified presence” [implying] “the establishment of the necessary variety of contact that allows for producing organized signs in sensed coherence with the notation’s correlate.” The force of the lure for feeling is apparent here in the curiosity of what extends and escapes: notation becomes the contact zone for what is not quite capturable even as it refers back in “some organized form” to what it left behind. The aim: to “provide access,” to “allow for contact” in a “gesture of mediation, not representation.”²

In “Against Access,” Clark recognizes the role access plays in disability politics and the ways in which the fight for accessibility facilitates many of his everyday activities from crossing the street to typing an essay. And yet he warns: “the way those things are lobbied for, funded, designed, implemented, and used revolves around the assumption that there’s only one world and ignores realms of possibility nestled within those same modes.” In the presumption of the normopathic reduction of existence to the able body, which is always also to say, whiteness, the nestled differential is quickly written over by all that is deemed of value, and it is there that access tends to be situated. “The question I am asked most frequently by hearing and sighted people is ‘How can I make my [website, gallery exhibit, film, performance, concert, whatever] accessible to you.’” “The arrogance is astounding. Why is it always about them?”³

Access is a second-order operation that requires the sedimentation of the perceptual field into a normative framework for its translation into another realm. While generative in some circumstances, this is not a process of dephasing. There is no

2. <https://contingentagencies.net/conceptual-framework/>.

3. https://audio.mcsweeneys.net/transcripts/against_access.html.

transduction here. Nothing is shifted from the primary site of legibility in its translation for access in the context of disability politics. The aim is one to one without remains: this is that.

This strategy of displacing the perceptual field from one register to another presupposes an external agent mediating. In the DeafBlind community, there has been ample time to recognize the danger of this mediating presence which has as its endpoint to make DeafBlind life (deficiently) seeing and hearing by proxy.

The question is: what else can access be in the fielding of the world's immanent expressibility? Inference will happen. But it need not be valued as the model through which the world comes to expression. Or, put differently, an attunement to the normopathy of inference can amplify the affective contours of all that was missed, inferentially.

Perceptual feeling scintillates with intuition. Intuition here refers to the activity of fielding through which the thinking-feeling tunes toward a tendency.

Intuition does not have an object. It has a fielding. It comes with a field potential that is movingly thoughtfelt before its elements are consciously registered as the objects of a fully formed perception, and is immanent to what occurs as a function of that field. The immanence of this thinking-feeling can be parsed out, retrospectively, into different aspects or elements. But each of them can only figure because the others are there for it to figure with. They are mutually included in the energizing of the event, as cooperating factors in its playing-out" (Massumi 2015: 45).

Intuition moves into the world's immanent expressibility without mediation. It does so amodally, abductively. Beyond any conscious reasoning, before inference, in the milieu where

sensation is emergently relational, intuition fields the resonant forces of the event's tendencies. There is no distantism here, no standing apart looking in from outside: intuition is not motivated by a subject, moving instead always from the milieu out, *immediating*. In the perceptual feel of abductive reasoning, "the parts coming together have already made themselves felt without requiring reflective mediation; the *intensity* of the event is immediately and equally thought and felt—not through a practice of deliberation, understanding, reason, or analysis, but through a 'conceptually rigorous intuition'" (Massumi 2016, 125).

Intuition—which can extend to the activities that prolong it—is not what we bring to a process, it is how a process brings us with it. It is the activity of co-composition that propels us into our difference in the modality of the event's own expressibility.

Mediation requires the between-two of a perceiver and a perceived, their interactivity mobilized by a principle of access that binds the two together. This produces what Alfred North Whitehead calls a "knower-known" relation—activity on one side, receptivity on the other.

Perceptual ferment takes another approach, refusing mediation as the anchor of its logical differentiation. That is to say, perceptual ferment begins and remains in the associated milieu of the dephasing, producing a "symbolic reference" based not on a mediating externality but on the immediating quality of the transductive force as carried by what comes to be felt (Whitehead 1927).

Intuition's amodality, its untetheredness to a preexisting body schema, culls from the event its lived abstraction, its perceptual feeling. Agitated into act intuitively, perceptual feeling is that echo of the cusp itself that leaks into all it might come to refer to.

Symbolic reference carries the errant tendency of perception. In the cusping of the speculative and the pragmatic, where the pragmatic is tuned to the little absolute of what has come to pass and the speculative carries the force of the more-than, the pragmatic itself cannot err. What can err is the excess the event carries in the transduction. Symbolic reference includes this excess, reverberates with it. Born of excess in the more-than of all that still agitates in the coming to form, symbolic reference is immediating to the degree that it manifests a time-signature that spreads across registers of time unmoored. Symbolic reference is never a point on a line. And as such, there can no mediation of the field it produces. There is no mediating force that can single out one tendency from another in perceptual judgment. In the "thinking-feeling of what happens" meaning is not stable, or static. Perception is never reducible to the limited form inference registers (Massumi 2011).

The spread that immediates through the perceptual field in perceptual feeling is alive with nonsensuous perception. Nonsensuous perception, the direct perception of relation in the event, allays the tendency to make perception an activity reducible to human sensation that requires reflective consciousness. For Whitehead—as for Peirce—perceptual feeling is not conscious. It is a worlding that composes us at interstices alive with inheritances and potentialities, imbued with the affective tonality of all that is already moving through it and all that speculatively exceeds it, in advance of any capac-

ity for reflection on it. In the secondary process of returning to the event consciously to situate it in the realm of lived experience, there will always be a temptation to excise that speculative share that, though not actualized in the event, makes a difference in the cast it leaves behind. Whitehead calls this its “concern” for the event at hand.

The concern for all that is welling carries with it a certain attunement to its antecedents. Yellowness has a certain carrying-over, perhaps, of a spring afternoon, or, under other conditions, of a lemon-ginger vinegar. The spring afternoon and the vinegar have no relationship to one-another. But yellowness carries them both, in the concern for a certain quality of excess that inhabits it. In the relation, yellowness is imbued, in the future-presenting, with the amodality of an immediating relation. The fusing of sense-perception with nonsensuous perception pulls the relational field into symbolic reference with a concern for yellowness and its acidic aftertaste. There is no distantism here—perception cannot be transferred, only transduced into vinegary spring feelings. Entrainment is entertained with the thickness of all that relationally moved through it in the activity of being fielded in the event’s concern for its unfolding. This is the ethos of process philosophy: what is made, what comes to experience, what is transduced into new processes, carries with it the concern for a relation, a relation irreducible, unparseable. This, its poetics of relation, is its unwavering commitment to a modality of difference that cannot be summed up by the forms things take.

Symbolic reference—the vinegary feel of spring or the spring-like yellowing of perception’s ferment—cannot be reduced to inference. Inference has no relational complex, no unmoored (time)line, no spread, no concern for the differential that swerves experience into its “consent not to be a single being”

(Glissant). It is too bare a response to the complexity that has made itself felt in the activity of co-composition. Always more-than, symbolic reference's fallibility is its motor: symbolic reference is not a fact, it is a propositional field. In the errancy of its worldings, there is no preexisting primacy of meaning or symbol: "The nature of [the relationship between symbol and meaning] does not in itself determine which is symbol and meaning. There are no components of experience which are only symbols or only meanings" (1927: 10). Symbolic reference is made in the relational web of a milieu's own emergent expressibility.

What is perceived is never simply "a thing." What is perceived is the field of relation imbued with a tendency, an orientation, and angling. Perceptual judgment catches the tendency through an intuitive attunement to its affective tonality. A feel stands out, but not apart. This feel is not "ours." We are made in the feel, we are not masters of it. In the feel, it is the quality of perception's expressibility that is amplified. In force taking form, form carries the feel of its excess.

The feel is alive with perceptual ferment. Condiment, preservative, beverage, both culinary and medicinal, the slow-ferment of the age-old practice of making vinegar takes at least 75 days to metabolize the sugar and produce a high enough acid content to be considered acetic. But it is not a hard science. Mostly you go by taste. And in the tasting, there will necessarily be variation, imbued as the process of transduction is with the question of how to ascertain an absence. How to taste sugar's disappearance? How to feel what has dephased into its difference from itself? How to recognize the turn the mixture has taken as complete?

Transduction cannot be measured. There is no absolute point where one thing is itself and another thing becomes another. There is only ever the dephasing. And the mother. As expression of the dephasing it could be said that vinegar is the notational remains of the process of tending to water, mango seed, yeast and then to mother over a period of three months. And that the mother is the form the excess takes, the document of its dephasing. But the vinegar isn't reducible to its parts—it is an expression all its own, a “stimmigkeit with the attended presences” certainly, but only if the Stimmung has concern for the differential inflection activated in the transduction. The acidic mood of the event simply cannot be captured, let alone traced back. And the mother really is her own event, tending as she does toward new inflections on a vinegary spring day.

The question of notation returns here. Is the act of vinegaring, of verbing the atmosphere of transduction, still notation? Or has the vinegaring, in all its symbolic reference, propelled notation into another milieu? And if it has done so, if what is being recorded is not the aftermath of an encounter but the encounter itself with the force of resonance through which tonalities of experience reverberate—atmospheres differentially co-composing—what vocabulary do we have for catching in the act a perception without perception that fields us into a worlding?

Anarchiving is the term SenseLab has used to discuss the immediating force of what moves a process into its difference-from-itself such that it can seed new processes (Manning 2020). Transductive to the core, anarchiving is the curiosity for how what has been left behind, as a trace, is potentially taken up elsewhere (2016). Verb-like, always on its way, in the midst, anarchiving generates an adjacency in the

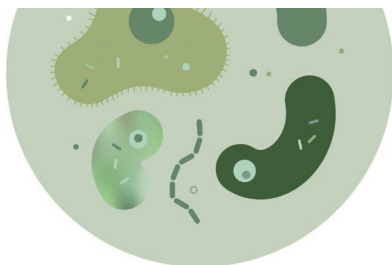
relational field that motivates a redirection by other means of the more-than that propelled the event into activity. It does so in the recognition that process takes form, and that this form matters even as the process cannot be reduced to it, or be determinately defined by it.

Symbolic reference does not emerge out of a vacuum. How things come to shape each other matters. Modes of valuation are everywhere present in the emergent couplings of perceptual judgments. But these are not valuations that enter into the process from the outside-in. They are immanent evaluations, sorting through the differential complexity to attune to tendencies in germ. “The components of experience are not a structureless collection indiscriminately brought together. Each component by its very nature stands in a certain potential scheme of relationships to the other components. It is the transformation of this potentiality into real unity which constitutes that actual concrete fact which is an act of experience” (Whitehead 1927: 86). In the transduction of symbolic reference, the anarchic share of that potential remains as inhibition, intensification, affect (Whitehead 1927: 86). To draw, to sound, to move into the wake of an atmosphere is to compose with these potentials not toward a standing apart, an access-to, but toward an adjacency, an approximation of proximity that propels the event into the cusp of its anarchival potential. In the overlap of a milieu without distances, we draw, we sound, we dance ourselves into act in the metatactility of a foment that never directs us back to where we came from because it is here that we are made, in the perceptual ferment.

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LAB 3



PERCEPTUAL FERMENT

“Vinegar mother is both catalyst and remains. Leaving a cloudiness in her wake, she is a reminder of the dephasing from sugar water to vinegar, and of the fact that what is produced is always less a substance in itself than a relational milieu.”

Doing STS hosts a lecture and Q+A with Erin Manning, followed by a hands-on DIY vinegar fermentation workshop.

Tools and materials provided.

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OTHERWISE TASTES







2 TBPS
SUGAR



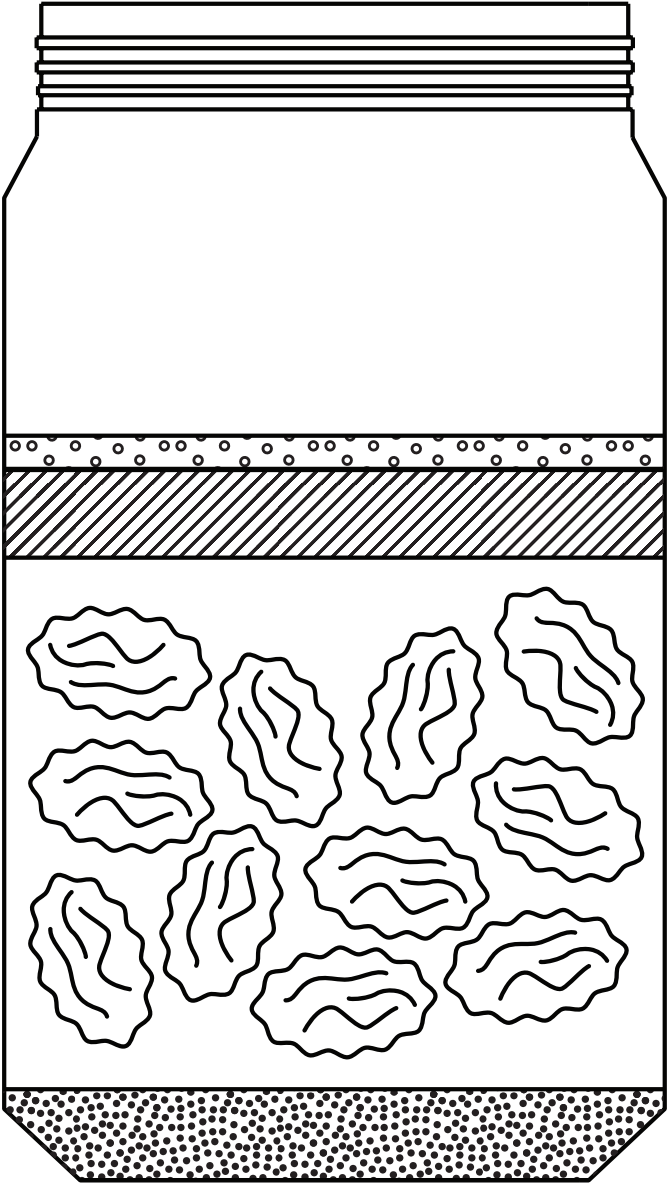
1 CUP
DRIED FRUIT



SPICES OR
DRIED HERBS



PINCH
OF YEAST





**EVERYONE
IS A SCIENTIST**

Outro

In the Lab

ROWAN MELLING

I began to notice that everything was calling itself a “lab” when I went to discount physiotherapy at a place called “Physiolab.” It had bubbly test tubes all over the window, oriented diagonally like little rockets blasting off. It was an austere place, with third-wave coffee clinical aesthetics, but I learned some exercises there that helped to solve one, but not all, of my body problems. From the bus I’d also seen a place called “Mudlab”—that’s a ceramics studio whose slogan is “GET MUDDY.” And my department at university has something called the Digital Democracies Lab, where all the kids who are gearing for academic prestige jobs work. They just call it “the lab.” Now, I’m in this thing called Writelab, where we write every week about STS and affect.

Goethe and Schiller had this argument about labs. It goes way back to the ancient Greeks and beyond. Basically Goethe says you can’t do science in a lab (he called it “putting nature on the rack”). If you do, then all you learn about is the lab itself. To do real science, you have to go out into the world. Schiller says labs are fine. Even though a lot of what Goethe said turned out to be “wrong,” I want to go with him. Maybe he’s just saying: don’t pretend your body is absent. Don’t pretend this doesn’t affect you. Don’t pretend the lab itself shouldn’t be studied. In hard science, the lab forms the endpoint of a potentially endless chain of looping studies. Receding in its sterile clinicity, it cuts off studies of the lab itself; and that

cuts off studies of those studies (and studies of studies of studies of labs). In the lab, we can say, “we are studying this object, and nothing else—not us, not the room, not the lab, just the thing.”

When shops call themselves “lab,” though, I think they are trying for something else. Unlike sterile science labs, they *want* to draw attention to their lab-ness. Physiolab, for instance, uses the lab to stick affective connotations of experimental-ity, innovation, and discovery to itself. It is more Romanticist than, for instance, a lab that invents new solvents for processing plastics, or that tests heart medications on monkeys. It’s trying, maybe, to capture a few drops of cultural value, trickling down from TEDx talks and Silicon Valley start-ups. But these fantasies of cool innovation start to melt as you wrap awkward rubber bands around your knees, pinching leg hair, and wonder, “when can I get out of here and why do I still feel so bad?” I want the lab to be different. I’m going to run with Goethe and say: we take the lab with us. It is that place of long and slow stillness where we gradually melt into the surround, each leaf interpenetrates us until we see them all. The science is how these things stick inside us when we walk away.

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Livabilities

MATHEW ARTHUR

If science was ordinary, anatomical charts wouldn't splay the body out as gruesome viscera like bad 80s horror gore. Arteries and veins wouldn't be blue and red—they'd pulse just below the surface, covered with ingrown hairs or tattoos, botoxed smooth. Touch would be diagnostic, and stories. Being crazy wouldn't be a curse of genetics or bad brain chemicals that lands you in a forever-loop of drab grey-green corridors with plastic cutlery and handleless locks. Instead of the DSM-V, we'd have manuals of care thick like a phonebook: techniques for holding difference gently. Labs and hospitals would be lush, moody, and contaminated—because life is. Machines wouldn't lord their complexity. No working parts would be black-boxed away for expert technicians. Studies, experiments, tools, and treatments would fail, variables skewed by sleepless nights and natural disasters, mistakes made in bad moods or putting things on hold to attend to what's pressing. There would be no cures, just livabilities, pills made instead of things rooted in the landscape. Doctors would be healers: like the rest of us, they'd weep or pray. Everyone would be a scientist.

Orange

BECCA SOFT

The bartender flames an orange peel before our eyes with one of those fancy torches. For a moment, our pupils become orange too. Then with careful precision, as if performing open heart surgery, he folds his body in half to find the right angle from which to place the peel, curve its shape over the two oversized ice cubes in the glass. The bartender slides the meticulously crafted cocktail toward my folded hands, and like two dancers performing a choreographed duet, I span my palms open like wings, catching it in a gentle grasp. “Thank you.” I sip slowly from the glass, the flavours magnetized to my tongue—as with any fine cocktail, the complexity parades around my mouth: exalting sensations in the before, now, and after.

Cycles

HAYDEN OSTROM

How does my grandmother always know when the sourdough is ready—when it needs more time fermenting? When my uncle takes me ice fishing, he can tell how thick the ice is from the sound his feet make. When we save seeds to replant we become geneticists. How could science not be based in our bodies. Thought is rooted in feeling: it is to flesh as inhalation and exhalation is to lungs. The kidneys control water in our bodies. The tide controls water. Cycles are inherent and fundamental. Why are we so concerned with replicability? Mainstream science lives in the syntactic confines of a question. How would a science of specific sense coalesce? Notice I didn't say "look like." I want deaf and blind science, queer science, decolonial science, particular and universal science.

Junk Drawer

DEBARAH BULFORD

What if we viewed life as a junk drawer, its contents an array and disarray of past, present and future? Some events are placed in clear view, seen upon opening. Others are set to the back or covered with scraps. You dig and shuffle to find them. The drawer holds discards: things distressing or experienced without yet knowing the “why?” A quick and convenient out-of-sight motion relieves the anxiety of forgetting. Items filed away are later retrieved as something to recycle or refurbish. Time adds character and makes a drawer’s mixed contents valuable. The dictionary defines junk as old or useless articles of little worth: “the cellars are full of junk.” But the adage “one person’s junk is another person’s treasure” approaches junk as a matter of relationship and connection. Like the junk drawer, a definition creates value by holding things together: an inventory of life’s bits and pieces, events and memories. Our drawers and words about junk are full of sizes and shapes, textures and weights. But also tones and emotions that imprint as an atmosphere.

Love

MORGAINEE LEE

The morning bird warbles, filling his whole body with the vibratory buzzing of love stuff, calling out to his soulmate. The scientist awakens enveloped in song, pulled in by the call to love. The biologist said they study birdsong to understand the sensation of song in the bird's body. The biologist traces tones along the soundwaves with their fingers, attuning to the resonances, rhythms, missed notes and off-beats—no mistakes. The biologist's body so deeply attuned that birdsong is felt swaying in the cells of their fingertips as they mark notations along a staff. The scientist does not work alone. The bird sings to the scientist, pulling science into a bellyful of care that joyfully fills in the details of a methodology section. The bird is a scientist, too, with method, rigour, and peer review. Their literature review is a dance, their results alive. Together, the bird and the biologist gently offer an honest account of how mutual care feels. After all, don't we do science because we care about things and think they are beautiful?

3D

REBECCA PENG

In the future, I'll be able to 3D print my feelings. There will be scanners, wires, electrodes, beepers. Something will nuzzle inside me like a dog's wet nose, excavate my mind with a persistent delicacy of light. The future will find feeling deep inside me, understand its dimensions, know me better than I know myself. I won't have to generate feels hunched over a screen, tweaking the pixel model, finessing the feeling's grey shape, its golf-ball texture. The feeling comes out stratified, full of tiny teathy ridges. But it's the future, so probably you'll be able to light up your feelings with a soft LED glow: something that asks politely, with pleasant novelty, for your attention. Nothing abrasive. Nothing too fluorescent. Solar-powered batteries, not AAs. My happiness is a bright and pulsing uranium green. It fits perfectly into the palm of my hand. Over time, its strange reptilian shape will be worried smooth, like a stone.

We will collect our printed feelings like particularly iridescent oyster shells. We will arrange them like crystals and speculate on their curative properties. Today, my anger is a ziggurat of pink. Tomorrow, my anger is a snake of pale, pale cornflower blue. When you stare at it, you're reminded of the enormity of sky. Touch it. It's good for focus, maybe libido. In the future, I will bring my feeling to the doctor. It's heavy, and maybe purple. I have to hold it with two hands. My bare legs dangle from the examination table. Best finest surgeon, come print me open. The doctor puts their cold stethoscope right over

my violet feeling (even though there aren't doctors in the future). The stethoscope is a little metal ear. Your hands are the stethoscope, listening. They slide around my feeling's lavender edges, stroke its amethyst core. You hold it, entire, in your cold, attentive hands. In the future, I still want the same things. I hold it out for you, bright and misshapen. You take it. You understand. You believe me.

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MATHEW ARTHUR directs Doing STS and is a PhD candidate in Gender Studies at Simon Fraser University. He is co-editor in chief of *Capacious: Journal for Emerging Affect Inquiry*. From 2017 to 2022, he led a weekly feminist technoscience salon at the Vancouver Public Library *nəcá?mat ct* Strathcona Branch. He has been published in *Capacious*, *Canadian Theatre Review*, *Fieldsights*, Fordham University Press' Transdisciplinary Theological Colloquia series, and Oxford Bibliographies in Literary and Critical Theory. Mathew's first book is forthcoming in the Advanced Methods: New Research Ontologies series with Punctum Press.

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BECCA SOFT (they/them) is a non-binary immigrant-settler living on the traditional, stolen, and unceded territories of the ləkʷəŋən and WSÁNEĆ peoples. Born in a small factory town in Germany as a result of parents evading the Yugoslavian war, Becca was raised in a household of domestic abuse and has spent their life navigating CPTSD. Their writing often centres the practices of mindful self-compassion, the expansive nature of community, and the healing and life-saving powers of the waterways and forests of Becca's childhood. Becca predominantly writes poetry and has been featured on many

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