Building *Maths*: a Preface

I have become increasingly intrigued by the languages of advanced, creative mathematics and of physics. In previous years, certain of my poems have briefly referenced potential connections between these languages and that of poetry.

Early in 2020 — in spite of or perhaps even because of the year’s darknesses and damages — I decided to address such connections more intentionally.

In the individual pieces that comprise this new, ongoing sequence entitled *Maths*, the method I settled upon is to begin each page with a poetic text, almost exclusively my original writing, the one major exception being the very first piece. I then add to this by interfacing it with complementary mathematical commentary, including equations in my own handwriting, culled from various sources. My hope is that these complements connect appropriately, but not too simplistically, to the poetry. I attempt to arrange these mathematical components in a way that is visually complex and aesthetically pleasing. Finally, before scanning, I
include wisps of pen strokes between mathematical texts and equations.

Near the beginning of the whole process, I realized the advantage of confining each piece to no more than a single page, in order to assure, as much as possible, visual unity.

— Joel Chace

Maths

8.

\[ R^2 + K^2 = (8\pi G \beta R^2 \left[ p + \rho/\epsilon^3 \right]) \]

Singular people step

As the control variables vary, a local minimum can disappear and the internal variables jump suddenly to a different equilibrium.

out of dreams. Or,

from a crease of air, a black

Most people would agree that it is strange that particles in free fall suddenly disappear. Surely it is reason enough to denote such a pathological spacetime as singular

silhouette slides: an embracing,

dancing, singular couple. They…which nevertheless should not become a straitjacket. The center of gravity necessarily a fixed rigid object in that sense...it should develop and grow...

curve, grow. Stretch of

love. Bloom of power.
With her parents, she, at three (years and

p.m.) enters that living room she's never

becomes a set of measurable functions

the stochastic process

\[ \dot{x} + \gamma \dot{x} = x - x^3 + \varepsilon(t) \]

from chairs to greet unexpected guests. As

the grown four freeze, she snatches a woodsman

Hummel – red, brown, tall, invaluable – then

\[ \frac{\partial}{\partial t} \frac{\partial}{\partial x^2} S_{\nu L} = D_N \frac{\partial}{\partial x^2} S_{\nu L} + D_+ \left( \frac{\partial S_{\nu L}}{\partial x_2} + \cdots + \frac{\partial S_{\nu L}}{\partial x_n} \right) \]

smashes it down against the hearthstone. The odds?
Maths

27.

In cold, black rushing, two horses scream.

Narrow, wood-plank bridge. In traces, left one’s left hoof slips, left.

Draft horses’ power. Black screams from rushing. Swollen winter creek’s power. Black, black screams.

Rushing, sword’s edge. Rushing, numbness, more terrifying. Rushing. Slices.

Eases them.

Down. Under.
The idea to assert that, for dimensions greater than \( n \), the structure has "shrunk" to being trivial, in some suitable sense. Other definitions actually chop off the data at \( n \) dimensions...So in order to give structure (such as composition) on \( n \)-cells in such a theory, \((n+1)\)-cells will be required, and beheading the structure is therefore too violent.

The difficulty is in making some both weak and higher-dimensional...weaken the structure first, and then increase dimensions...
On Not Taking Physics

I never took a course in physics, at any level. I retain few memories of high school chemistry; there was, however, one curious incident. My friend Tim and I stood at our assigned lab station, where a test tube was heating over a Bunsen burner. We noticed our teacher strolling over from his desk at the front of the room. Thin and tall, Mr. Dries never said or did anything in haste. He stopped beside us and bent at the waist to bring his eyes level with the orange flame. For maybe three seconds he stared and then, in a blur, grabbed the test tube by its lip and dashed it to smithereens against the cinderblock wall behind the lab table. In a moment or two, he phased back into focus, back into his languid body pace, and slid over to the next pair of students, without uttering a single word. That was my introduction to scientific uncertainty.

Primum Mobile

Seeing, through a window, Orion
against clear blue-black. Realizing
that the constellation is
actually a pattern, on glass, of
rain, strangely, momentarily,
stilled. So, each droplet has become
a thing. Things in themselves -- only
events that for a while are
monotonous. In bed, eyes
shift toward the lover. Fire is known
to be fire by heat. Without
heat, a drop of water would
bounce, forever, and a heart would simply
jangle, eternal bell.
Entropy

Whole afternoons they spend, two siblings, in that stairwell: enclosed; ensorcelled, for them. Its structural oddity, walls narrow toward the middle, so they crawl and slide within a slanted cone, cone of light once they flip the switch. How their fine, particular play disorders that space. And when they off the light, blackness is entire. For moments, they can only move back toward the present. Until, eyes adjusting, they advance to where they began.
Foresight, Sight

They claim they saw it coming. So when it arrives, they say, *There it is, as foretold*. Those who hadn’t seen it coming marvel at how, from a stone well of entropy, such complexity can rise. Carriages circle a pavilion where dancers circle. Amber fire on the river, right where it bends…*spin foam as describing the geometry of spacetime*…Vaudeville down at the quays. Crepuscular dew beginning to glitter…*and any slice of it as describing the geometry of space at a given time*. Toys, blue and red, badly hidden under floor-length curtains. And those who swore they saw it coming now admit they lied. *Every interpretation has a cost.*
About the Author

Joel Chace: “My maternal grandparents were farmers and staunch Upstate New York Republicans. Across town, however, lived my paternal grandparents, who I would visit regularly. This grandfather was a brakeman on the Delaware & Hudson Railroad, and he voted for Eugene V. Debs every time Debs ran for president. My grandmother was a painter. My mother worked for a time on Wall Street. My father was a jazz trombonist and vocalist, who was on the road for a dozen years until his marriage in 1942. I write in order to come closer to understanding my own origin and being, out of the vortex of these lives.”

Joel Chace’s most recent full-length poetry collections include *Humors*, from Paloma Press, *Threnodies*, from Moria Books, and *fata morgana*, from Unlikely Books.