CASCADE, DECAY

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You cannot produce infinite energy

Complete freedom is pretty boring

What would you do with it?

--Ayres Freitas (excerpted from conversation)

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Introduction

I never know quite where to start,
especially when writing poems about
the things I want to understand but can't.
To the rhyme between the lines, whose faults ring out
their own tired aftermath, I'll hardly stay devout
as much as I may try. Imagine a small spoon
politely tapped against a tempered glass

that shatters in the hand. Somewhere in there
I'm caught, surprised by my surprise. And if
that metaphor doesn't check out, listen—
I never claimed to make myself make sense. And so
I'll borrow language from the physicists
who tell the stories of their own research
through powerpoint, with laser pointers, symbols, words

I thought I knew. Shakespeare began his plays (some)
with prologues, exposition of the plot, in verse—charmingly
cliché (after the fact). Here I've done the same
but worse. Because there's nothing I can tell you or explain
why what I'm saying matters, why energy must
be conserved when particles change from some things
to others. Ovid began *Metamorphoses*:
"Of bodies changed to various forms, I sing…"
the forms I mangle, beckoning.
Imagine them again: the spoon, the glass
that should be sound. Which one shatters last?

Part 1.
Theoretical.

PROJECT

1.

Trapped today in some banal expression,
examining the floor at a café,
I wonder why cascade once meant "to fall,"
and still does, I suppose; imagined that it meant
something less obvious, farther away
from the present. Decay really means "to change"
from one substance to another. To disintegrate,
a substance must lose some of what makes it
itself. But what does it retain, if not its name?
Some deep lumen of the voice, aural brocade,
some lithe finger on a glass whose spin rings out
an effortless whatever-speech-has-made-
us-find? Each word, a "we" within a form without
a form, contains this boundless energy of doubt.

2.

Anyway, I'm fed up with erasing myself from
my own account. So, the physicists' group meetings: I'll attend
one later on today, at noon. It's easy to feel foreign
in that room: invisible, unable to understand
what's happening, the only one scrawling their notes. I sit
in the back, hoping to not be seen. That lack
of being noticed feels acute in its activity.
Like noticing the floor at this café, constantly stepped upon,
was formed by pennies trapped within shellac
and fused. Or the loose thread on my sleeve,
twisted fibers drawn away from their own kind;
that each thread is a lack of not--a thread amongst itself. A lack
of like, not unalike. Unlike a yarn unwound,
whatever is most not cannot be bound.

3.

Because the meetings are at noon I observe
what the physics students eat for lunch. *Ensure*,
half an acorn squash, what looks to be lo-mein, takeout,
some frozen microwaved dish. Most, though, are like me,
eat nothing at all; some are rather thin. I wonder how
they've found the time for anything besides their own
research; the plants in the fourth floor's windowsills
still thrive. Whatever time I've found cannot not-be
less serious. Why abandon acrobatic sound
for sense when nonsense calls so lucidly?
Nonsense is my energy decayed, as we all aim to be
and were before. I struggle to maintain my life,
which isn't deep, except for when it is.
Some once-small things seem large and opposite.

4.

What is "spin," plants in the windowsills, no
the question's wrong, suddenly switched into
another realm; a small magnetic moment's
magnitude, no poles, not rotated at all. Magnitude,
that quality of muchness, still eludes
me. Directionless in this project, I ask
Ayres what he does when he gets stuck
on projects of his own. From what he said, it seems
that all will become clear eventually. Of course he knows
another thing I don't--how to work with discipline
consistently. Another day, I asked when Ayres knew
he'd be a physicist. "Oh, very young," he said,
"the other sciences were not so rigorous, and
mathematics was a bit too esoteric (for my taste)."

5.

What does Ayres do when he gets stuck
debugging programs meant to calculate
the thresholds of dark matter; sub-atomic
particles caught in chambers, between plates?
I'm sure I'm misrepresenting his research…but
the esoteric comforts me, and math,
though a subject I did love, didn't much love
me back. In language there's an elegance
I crave; that each piece fits together;
unique failures to communicate. And here
that failure's mine to share with you. And still
I turn away from 'I,' not wanting to include
the self anyplace. The self is limited,
focused outside somewhere, the reader, 'you.'

6.

Physics, a subject I did love, I didn't have
much focus for the actual workings of;
another interest I gave up, displaced
by sentiment. Aimless in my intent,
each question is a vector just beyond the edge
of what is felt, or known, for me to do or be;
an attempt to understand. Another of my ceaseless questions:
what role does physics play in one's identity?
The answer: "Most of us have spent most of
our lives on this; have had no other jobs.
But how I'm introduced depends on who
I'm speaking with." Remarkable, that certainty--
the choices they have made themselves to be.
But how to choose which directions to ignore?

7.

If science is a ceaseless question in an attempt to understand, then
perhaps I should have been a scientist
in the dark ages, when eyebeams were meant
to convey sight—that they'd twist
somewhere mid-air, the atmosphere a psychic mist
of gazes pinging, cone by cone. What have I learned
of fields and forces, weak and strong? Returned
to my apartment, quarantined, I can't
quite seem to finish this. There's been no lesson
here, no epiphanies unriddled, logic-less, besides:
I know more now that I know less than I knew of
before. Art exists in all that wants to exist, the world
living to extract, describe, and be extracted and described. And here,
I've trapped this day, and every day, in some banal expression, flat.

Part 2.
Experimental.

WE WANTED TO FIND THE SEEDS TO OUR OWN RECURSION
verbal erasure

completely independent of anything,
a little group, specific. a definite
route. what we know, we write in
terms of contractions we can completely
fix. to sew those together, the idea we want
we know when we construct it. simple. this element
left. and right, a constraint: two of the same
zero. in order for this thing to vanish
impossible to satisfy unless we do
some sort of trick—complex momentum.
the boundary the amplitude we want, we
shift. all other poles shell these
residues fused to one another. we take (the original)
(both) (zero) the constraint. which is equal?
the solution: below. a very basic example. a constant.
if these were higher, more interesting, independent—
how so? i suspect the boundary you never/introduce.
Higher, spin higher, come back, loop. i don't remember
the exchange; external, shell. careful, simple. if
easy, everything works the same way—use or do. i don't
want to go into too much detail; i'm not an expert
in all possible/cuts, propagators, work done. i believe
definitely, scatter a problem. two black, classical
contributions, effective to define a potential. back
coupled to a like, constant, little again. if i wanted to write a mess
i'd sew a tree level. you can see. it's just match onto a theory
i'll actually talk about. i want to build high
orders, higher (scattering) (sew together) (my) (left, my right)
channels. i have to do this. the same volicity velocity i could also
(sew this together) (sew together) ((i) get) zero, the advantage
keeps. turns all we need (we can) (sew these together)
(on shell) (left and right) i get this algebra, a trace
sum. (just this thing) a triangle cancels a box. a bubble
triangle box—leading order. (exchange momentum) incredibly
small. (we only want leading, we find.) normally one would
expect (the bubble is quantum, i'm trying) i believe
super classical terms, contact terms, pure diversion.
a fall theory, a potential, a low energy, a contact. in
coming out. expand, keep, give us higher orders, insertions,
looks. expansion. define the potential kinetic order to find……(what)(what)(what)

WE WANTED OUR RECURSION
verbal erasure

Completely independent of anything, [*we were*]
A little group, specific, [*following*] a definite

Route. What we know, we write in
Terms of contractions we can completely

Fix [*can't, won't, don't*]. To sew those together, the idea we want
We know when we construct it. Simple. This element

Left. And right, a constraint: two of the same
Zero. In order for this thing [*can't, won't, don't*] to vanish—

Impossible to satisfy unless we do
Some sort of trick—complex momentum.

The boundary the amplitude we want, we
Shift. All other poles shell these [*can't, won't, don't*]

Residues fused to one another. We take the original,
The constraint. Which is equal?

The solution: below. A very basic example. A constant.
If these [*can't, won't, don't*] were higher, more interesting, independent

I suspect the boundary you never/introduce.
Higher, spin higher, come back, loop. I don't remember

the exchange; external, shell. Careful, simple. If
easy, everything works the same way—use or do. I don't

want to go into too much detail; I'm not an expert
in all possible/cuts, propagators, work done. I believe

definitely, Scatter a problem. Two black, classical
contributions, effective to define a potential. Back

Coupled to a like, constant, little again. If I wanted to write a mess
I'd sew a tree level. You can see. It's just a match onto a theory

I'll actually talk about. I want to build high
orders, higher scattering, sew together my left, my right.

I have to do this. I could also

sew together zero, the advantage

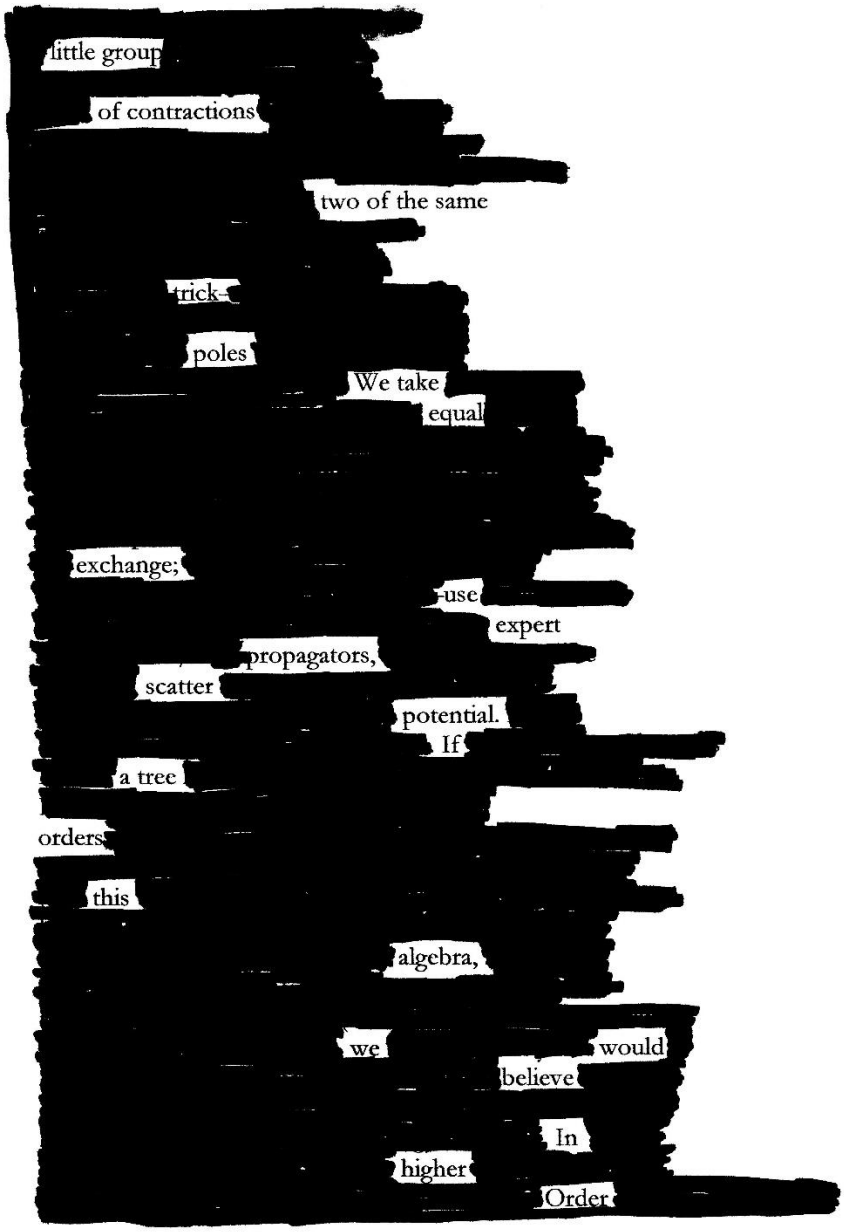
keeps. Turns out all we need, we can sew.
I get this algebra, a trace

sum. Just: a triangle cancels a box. A bubble
Incredibly small. We only want leading,

We find. The bubble is quantum. I'm trying
Pure diversion: a fall theory, a potential, a low energy, a contact,

in coming out. Expand, keep, give us higher orders, insertions,
Looks. Expansion. Kinetic. Order.

WE [redacted] SEED [redacted] OUR OWN [redacted]



IT SEEMS THAT IT'S ALL THE SAME
verbal erasure

Pretty easy.
We end.
Potential potential
Equivalent.
A good check to compare to.

Put in onslaughts,
The most general just expand.
A small test.
Experience some massive object.

Like this?
Just construct.
Arbitrary.

Higher.

This is just.

___

I'm truncating.
In principle,
I've calculated
So.

____

What we've done?
We want
Solutions:
    Critical, Intractable, Alternative…

Fewer. Pretty
Impossible potential.

Take a step back.

Without even talking
We're only using.

This is just the beginning.
We can reproduce
The language of the future.
The state.
The art.
The field in its infancy.
Vast.

SELECTED ETYMOLOGY NOTES

sourced from the Oxford English Dictionary + etymonline (online etymology dictionary).

cascade (n.): "a fall or flow of water over a cliff, a waterfall," 1640s, from French cascade (17c.), from Italian cascata "waterfall," from cascare "to fall," from Vulgar Latin *casicare, frequentative of Latin casum, casus, past participle of cadere "to fall" (from PIE root *kad- "to fall").

cascade (v.): "to fall in cascades," 1702, from cascade (n.). In early 19c. slang, "to vomit."

confines **(n.):** c. 1400, "boundary, border, frontier, limit" (usually plural), from Old French confins "boundaries," from Medieval Latin confines "a border, boundary," from Latin confinium (plural confinia) "boundary, limit," from confine, neuter of confinis "bordering on, having the same boundaries," from assimilated form of com "with, together" (see con-) + finis "an end" (see finish (v.)). As "the part of a territory which is near the border" (as in Dryden's "Betwixt the confines of the Night and Day") is from c. 1600.

decay (v.): 15c., "to decrease," also "to decline, deteriorate, lose strength or excellence," from Anglo-French decair, Old North French decair (Old French decheoir, 12c., Modern French déchoir) "to fall, set (of the sun), weaken, decline, decay," from Vulgar Latin *decadere "to fall off," from de "off" + Latin cadere "to fall" (from PIE root *kad- "to fall"). Transitive sense of "cause to deteriorate, cause to become unsound or impaired" is from 1530s. Sense of "decompose, rot" is from 1570s. mid-15c., "deterioration, decline in value, gradual loss of soundness or perfection." Obsolete or archaic in reference to fortune or property; meaning "decomposition of organic tissue" is from 1590s.

spin (v.): Old English spinnan (transitive) "draw out and twist fibers into thread," Intransitive senses of "to form threads from fibrous stuff; to twist, writhe" developed in late Old English. Transitive sense of "cause to turn rapidly" is from 1610s; intransitive meaning "revolve, turn around rapidly" first recorded 1660s.

vector (n.): < Latin *vector*, agent-noun < *vehĕre* to carry. "quantity having magnitude and direction," 1846; earlier "line joining a fixed point and a variable point," 1704, from Latin vector "one who carries or conveys, carrier" (also "one who rides"), agent noun from past participle stem of vehere "carry, convey" (from PIE root *wegh- "to go, move, transport in a vehicle").

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