ANNIE KIM

A Hysteresis Loop

For any phenomenon there is a shape, dashed lines, points in a plot.
: a loop, say a fountain pen's italic *f*.
I want to tell you that it's beautiful.

Sir James Alfred Ewing, studying earthquakes in Tokyo,
discovered that magnetic force, when applied to *pianoforte* wire—it was the Meiji era,
late 1880s, Brahms hard at work on his third piano trio—both saturates and flees
the wire at the same rate, creating a mirror image, chartable over time.
There was a lag, however, between cause and effect. He called this *hysteresis*.

Fig. 11

Pianoforte steel wire
Normal temper

From the Greek verb *hystereo:*
　　　　　　　I am late, I fall short, I lag behind.

In his 1885 paper, Sir Ewing put it thus: *When there are two quantities M and N such that
cyclic variations of N cause cyclic variations of M, then if the changes of M lag behind those
of N, we may say that there is hysteresis in the relation of M to N.*

　　　　　　　　: variations of a father on
　　　　　a daughter and the daughter's changes to
　　　　　herself　　variations on the daughter charting how
　　　　　her father changed her　　variations to
　　　　　the way a daughter struggles to erect an image
　　　　　of herself　how she lags behind herself

It's not the truth you want,
it's the process,

walking back tonight, one foot
ahead of mine crossing traffic,
my husband says.

                      Quick steps,
involuntary motions—
one moment, next, the way our lives
stitch into a shape behind us,
disappearing if we look.

Red light: a car stops, bass rumbling.

You're right, I say.
Though it's not enough.

                    : either soft or glass-hard, cooled, annealed, taut or
                            normal-tempered, either steel or iron—

      saturate the wire with magnetic force, then chart its drop

                                     Tame is what he
                                     seems in this instant,
                                     chewing his beef in
                                     small efficient bites,

                                     eyes looking down
                                     at his dinner plate, those
                                     long black lashes my
                                     mother fell in love with
                                     fluttering thin.

                                     Old tiger prowling in
                                     a kinder, gentler cage:
                                     watched, he knows I'm
                                     watching him.

I want to tell you that it's beautiful—
one upward curve tracing the rise
in magnetic force, one plummeting

at precisely the same intervals, forming
a natural symmetry, a loop.

Little things—
pill bottles multiplying
in his bedside tray. Hand
against his back as
he shuffles to the sink. Twitch
of his white-socked foot
as he nods off, TV blaring.

I chat about the storm
driving home tonight, where
to shop tomorrow—
placemats on the table, trivet
beneath the bubbling dish—
everyone is safe.

So I am cruel
in this instant, an exploding
bottle of ink
because I can't help thinking
no *forgive and forget,* no *love
always wins.*

Fig. 16

*Graded cyclical magnetisations
of an annealed pianoforte steel wire*

Let me tell you about *remanence:*

What remains of magnetism in the body
after the field has been removed.

We are talking, my sister and I, across
a lightly distressed farmhouse table, two cups
between us, about our parents, how difficult
our father has been, where they'll retire,
our to-go cups wrapped in cardboard sleeves
cooling off between us, my sister the doctor
almost pleading *he's not going to change,
I think his neural pathways are set,* the tears
beginning to pool in her eyes and I,   →

tearing up too, saying *it's different*
for me, I had a different experience with him,
though what I mean is I can't care
the way you do.

What remains (from the Latin *remanare*) varies with each
material but can be plotted as a point on the horizontal *H* axis somewhere above the
origin. Never zero: something always remains. Irrational, what remains.

Let's do it again, I say to the cellist—

rehearsing for a wedding, our notes
sliding past each other's on the beat.

Breathing in together, we start again:
bows in unison, a rest, and then his eighths,

my quarter note, coming together.
I could go on like this, can practice
forever when perfection is at stake, when
any emotion can be acted out regardless

of how I feel, then put aside gently,
like a sweater I don't need, lifted up

to a cool, discerning light.

Oily, salty: how his scalp smelled
on a humid summer evening, neck
of his white Hanes T-shirt no longer
actually white, the cage of his lips

narrowing in anger, crumbling
like the tip of a pencil pushed
too hard. I could do that to him.
Help him, help him, part of me thinks.

The value of M at any point of the operation depends not only on the actual value of N, but on all the preceding changes (and particularly on the immediately preceding changes) of N. . .

When you're tuning a piano
you must choose which set of chords
should sound most in tune—there's no perfect
temperament, no perfect pitch: each note
borrows the shadow of its neighbor,
is the product of a host of strings struck
all at once, and every string exists
to be tightened, loosened, pushed.