



Max Ritvo's Precision Poetry

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Radiation treatment has a very 'just for you' feeling to it. They make a mold of your body that you lie in during every treatment, so you literally notch your ribcage into the machine. Two or three attendants lay sheets over you, and position your body lovingly every time. And the beam-gun is hooked up to this enormous garage door frame and hulking masses of metal whirl around to get this little blue cylinder pointed exactly Goldilocks at your tumor. But the most heartbreakingly beautiful just-for-you thing is the sound the machine makes when the beam is emitted. Sarah, it sounds like a tiny man with a tremor is opening up a can of soup inside the gun. (Ritvo and Ruhl 2018, 152)

How to be precise about dying? "I've been dying a long time," Max Ritvo said in July 2016, one month before he died at twenty-five (Ritvo and Harris 2016). He did not mean he had been "dying a long time" in the banal way, all of us sharing the certainty of death. Ritvo was diagnosed with a rare form of cancer called Ewing's Sarcoma when he was sixteen. His dying was marked by living with the harm it caused him and those around him. The hurt of his body flowed out: "everyone I love, I'm causing pain to." This dying was marked by a grammatical and temporal imprecision—the gerund, "dying," a verb-made-noun, extending across two verbs before "I" comes to find it—"to have" and "to be." His experience of "dying a long time" was intercepted by courses of precision care, of the kind described in the passage above, where medical interventions were tailored to Ritvo's particular needs, in the hope of finding a cure for his disease.

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Ritvo's construction of a patient-consumer avatar in his poetry reflects his position at a biomedical frontier: "I'm living at the time where if I hang on another few years, cancer might be a chronic illness like diabetes instead of a guaranteed terminal killer" (Ritvo and Ruhl, 122). This is the flipside of precision medicine: the accumulation of vast tracts of data about individual patients that might amass to some kind of general cure, at some later date, less the hyper-individuation of care than a temporary zooming-in for the sake of oncological futures. At this frontier, Ritvo became an experimental test subject. The choreography of mechanized procedure in some of his poems rehearses what Laura Salisbury has described as "industrialized time regimes in which human duration could be rendered expendable in relation to the time tabled according to the needs of industry and modernity" (2019). Ritvo's construction of himself as biomedical subject registers this regime, in which he can only be positioned as waiting *for* (Salisbury 2019)—waiting for a cure or waiting to die—while metaphor offers a space to turn this experience of duration in other directions.

Here, I read Ritvo's poems "The Curve" and "Poem To My Litter" through a chronology of precision: imaging, diagnosis, and treatment. Ritvo explores a tension between dying as an extended and uncertain process, suspended over promises and failures of long-term treatment, and the action-oriented grammar of precision, with its full stops and fresh stanzas. Poetic form allows a commonality to be drawn between the body as written form—a code to be deciphered for the sake of treatment—and the metaphors, images, silences, and harm that accompany "dying a long time" in a context of personalized healthcare. Precision medicine relies on a logic of surrogates—body for disease, image for body, test subject for patient, experiment for cure—while its applicability and effectiveness are often uncertain, depending on bodies it targets, as much as on continued investment and interpreting extracted data. In these poems, Ritvo places uncertainty and surrogacy in a strange fellowship, his body at odds with the speculative procedures it undergoes, substituting and substituted for, besides itself.

PRECISION AND POETRY

As a genetic mutation wrote its way through cells, tissue, and bone, Ritvo made analogy carry the difference, meandering in and out of a bodily time determined by treatments and side effects, and the everyday, mundane difficulty of sustaining the body. In his poems, a subject wanders through this experience in a mode of uneven contiguity, between analogy and matter, adjacent to the temporality of "dying a long time." In an essay, "Mortal Kombat," published in January 2016, he talks about his love of the composite metaphors used by his psychologists, all Jewish men (like him) above the age of fifty, whom he called his "Freudian fathers." These fathers would draw out analogies as far as they could go in "clear metaphors with a few elegant bridges between the Real we were considering and the Imaginary World we

were pulling from” (Ritvo 2016b). For Ritvo, these composite metaphors “make me feel like every world is a map for another,” and that apparently disparate worlds “could perfectly account for one another” (2016b). Metaphor becomes a site of refuge where things make sense, where stock can be taken, where one thing can stand in for another: poetry as the work of precision.

But metaphor cannot hold still in the enforced mediation between body and world. When his mother drank coffee in the mornings, Ritvo watched how it brought forth her voice, and from this she could “pull the entire day out of thin air” (Ritvo 2015). Each morning, a blank space was summoned into a fully functioning person by a chemical stimulant: “I never saw my mother actually *drink* the coffee ... I would just see tired Mom and a full cup of coffee, and then an empty cup of coffee and a changed Mom” (Ritvo 2015). He writes about assuming that chemotherapy would work the same way: an ingestion of energy-giving chemicals that would change him without his really noticing, like a clock’s hands turning invisibly through the day, “a green super villain potion instead of an earth-colour shaman elixir” (Ritvo 2015). In 2007, soon after the tumors were first found, he had four rounds of chemo in three-week cycles, followed by radiation therapy, surgical interventions, and drugs. One of these drugs—ifosfamide—caused hallucinations, and Ritvo worried that it was affecting his memory; writing poetry became a way “to preserve the memories that he feared were breaking down” (Ledford 610). While analogy offers a certain comparative comfort in bridging different experiences, poetic form becomes more a means of infrastructural safeguarding for experiences lost to a chemical fog.

Precision medicine developed out of the optimism in the early 2000s around new futures for human health that accompanied the first draft sequence of the human genome. It quickly became part of a speculative biotechnology market fueled by fantasies of tailored consumer experiences. Scientists could, in theory, now read genetic alterations of an individual patient, and develop or recommend therapies on a case-by-case basis: “the right treatment for the right patient at the right time” (Garay and Gray 2012, 129). Charles Kowalski and Adam Mrdjenovich identify a one-for-one logic of substitution in precision medicine, describing it as a “monument to neoliberalism,” a product of science entering the domain of free-market economic growth rather than public good, organized around individual consumer s opting into a range of choices (2017, 77). Moreover, they write, “the biotech model of commodification has tended to favor reductionist approaches in biology so as to produce discrete objects of ownership” (77). Kaushik Sunder Rajan argues that the coproduction of neoliberalism and genomics has resulted in particular grammatical conceptions of human lives as “those whose futures we can calculate in terms of probabilities of certain disease events happening” (2006, 14). In this “shifting grammar of life, towards a future tense,” the body can be known, but at great personal cost—both financial and psychological (Rajan, 14). Mike Fortun has characterized this

shift as part of the speculative logic of genomics, which enforces a mono-directional temporality at high speed, hitched to the back of a swelling biotech market that can hold off delivering on its promises as long as it can continue to thread imaginaries of revolutionary healthcare into its infrastructures of capital (2008). It gives patients a sense of choice and autonomy over their health, while steering this market into consumer-driven services offered at competitive rates.

The passage at the beginning of the chapter is from a letter Ritvo wrote to Sarah Ruhl just over a year before he died. The description of radiation therapy sounds like a virtual experience, a simulated hyperreality, his body becoming part of a post-human future where machines sustain human life indefinitely. The passage is anchored in a technology of targeting: a beam-gun that can vaporize tumors by honing in on them, like lasers for killing androids and aliens. The body is connected to a machine that knows it better than it knows itself, at least when it comes to blasting away deleterious matter. This treatment is not directed toward a general human body, but designed around a Max-shaped mold. The passage is suffused with a sense of euphoria, where an affect of care—“lovingly... heartbreakingly beautiful”—is extended through each part of the process. But despite its precision, the process relies on a network of avatars, substitutions, and third-party labor. It sounds like a scene of death, the mold into which he fits himself akin to a sarcophagus, attendants draping sheets as if over a dead body, and a gun pointed at one of the most vulnerable parts of him. It is a scene of dependency, shaped by the defenselessness of the body undergoing treatment, and an unspoken necessity to suspend disbelief that this is not, in fact, a scene of annihilation.

IMAGING, SUBSTITUTION, AND PROXIMITY

Hell starts on Monday: it'll be three days of pretty constant scanning (and I'm a little afraid of MRI machines) and that'll transition immediately into surgery. Then I'll get to rest and probably lose some weight. (Ritvo and Ruhl, 67)

Magnetic Resonance Imaging (MRI) is a way of producing images of the body through magnetic fields and radio waves. The patient, awake, lies down on a moving bed and is drawn into a large cylindrical tube, where strong magnets read the body. Some scans take a few minutes; others, an hour-and-a-half, during which time the patient must remain relatively still. They can talk to the radiographer through an intercom, who remains in another room. Radiography in the hospital's MRI room is one of the more science-fictional scenes of modern medical dramas: a human body disappears into a tube, as if into a pale, plastic coffin, or into another dimension. It is a scene of transcription, where a person becomes known as a medical subject, identified by out-of-place matter that may signify abnormality in the body. “Imaging” makes a

verb out of a noun, but it is not the same as photography; MRI makes images inside the body by negotiating its borders with waves and fields, not with invasive instruments.

MRI scans are part of a wider set of practices made possible by new techniques of reading images of body parts as evidence, which Thomas Keenan and Eyal Weizman have theorized as “forensic aesthetics.” They argue, “The making of facts ... depends on a delicate balance, on new images made possible by new technologies, not only changing in front of our very eyes, but changing our very eyes—affecting the way that we can see and comprehend things” (2012, 24). The example they consult is the identification of a skull found in Brazil in 1985 as the skull of Josef Mengele, through a process of imaging bones. What was at stake was a decision first, about whether the skull belonged to Mengele, and second, by extension, whether he was alive or dead: was this an “open” or “closed investigation” (2012, 24)? Open (alive) would imply the possibility of bringing Mengele’s crimes to justice; closed (dead) would, conversely, mean the openness of non-closure, attended by and with collective trauma. A promise of precision hangs over forensic aesthetics, suggesting a seamless movement between different levels of determination: technology and law, vision and justice—the calculation of probability entwined with aesthetic judgment (Keenan and Weizman 2012, 24).

Writing on CT scans (which work through X-rays), Barry Saunders observes that these images “*substitute* for bodies,” and while similarities between body and image might be identified, “a patient would probably not recognize himself” (2008, 14). But the body also becomes surrogate to the images, an object that affirms a trained biomedical gaze. These images have the potential to legislate the body, to subject it to moral and medical economies of health intervention, to inform decisions made around it, or enable generalizations about larger groups that are in turn made surrogate to the similarities certain images draw between different bodies. They are a technique of estrangement, detaching the subject from the particularities of their history, and arranging them instead into biomedical ways of seeing and modes of analysis, in which the subject is not necessarily trained (Saunders, 27).

As a method of judgment, forensics requires not just an object and mediator, but also a forum, in which “claims and counterclaims on behalf of objects can be presented and contested” (Keenan and Weizman 2012, 29). The kind of precision made possible by imaging offers a spectacle of judgment, “entangled performances” of decision-making around disputed or ambiguous objects (29). The patient’s body is made surrogate to another object—a scan, which is in turn surrogate to a particular set of diagnostic optics utilized by a biomedical forum of radiographers and oncologists. In this process of surrogacy, where the body becomes coded into object to make it legible to specific gazes, metaphor slips between object and interpreter, a constitutive element of the forum, and a condition of judgment—facilitating the process by which consensus is reached. “Explain it in general terms” is an invitation to analogize. The analogizing of biomedical ontology both deviates

from the promise of precision while, conversely, ensuring a consensus which is *taken to stand in for* precision, in a prosaic sense—the judgment of experts, rather than an individual or machine.

Ritvo interrupts this process by retrieving his body from the procedure of surrogacy, stressing instead the fallibility of the interpreting gaze, and the limits of professional disembodiment. A poem called “Scan” from 2012 shows this process at breaking point, where Max-as-experimental-test-subject inserts himself into the procedure, finding an ally in a voice without a body:

Lie flat,
comes the command,
from a voice unsinging;
the voice starts to weep
and I blow it kisses.

Ritvo rarely talks about specific doctors or technicians or radiographers; he starts with the procedure, working the technical process through his experience of it, trying out metaphors and forms as he is constructed as a test subject. Here, the contrast between the disembodied punctuation of the first three lines and the enjambment of the last two creates a sense of intimacy between the voice and “I.” Being commanded to lie flat is joined to another context: the instruction of a lover, someone to whom one might want to blow kisses. This lover is joyless, “unsinging,” a tone to match the “flat” of the first line, but the kisses come as a kind of reassurance after this unsinging voice breaks, over a line and a semicolon, into weeping. The voice is not unsinging because it does not care; it is trying not to fall apart. The poem reads as a sonnet with most of its lines left out, but the rhythm of its volta toward hope lingers: a declaration of love from patient to voice. But is this the voice of a person, or a machine? The voice arrives as a command from a biopolitical regime of protection, surveillance, and intervention. This “command” feels either militaristic or robotic in its incorporeal arrival, the emphasis placed on the bodily vulnerability of the first sentence.

The contrast between this vulnerability (conveyed rather than expressed), and the precision of the biotechnological operation, indicates an irresolvable but codependent tension between embodiment and treatment. In *Promising Genomics*, Fortun organizes his study of deCODE Genetics around the figure of chiasmus (X)—the inversion of clauses accompanied by a shift in terminology, “a couplet of terms that are conventionally taken as distinct or even opposed, but which in fact depend on each other, provoke each other, or contribute to each other” (2008, 13–14). For Fortun, this invokes the rhetorical register necessary for grasping the aporia of genomics, its future-oriented economy reliant on shifting meanings, rather than finite ones. The body located within this regime is placed on uncertain terrain, in terms of the changing significations attached to its embodied processes.

Ritvo's "The Curve" also starts with X: "Something, call it X, wanted a body." The line makes the body subject to the desire of an alien entity immediately, teasing a mathematical equation before collapsing this into a wish in need of fulfillment. How can this unknown entity-quantity, a "thing," be capable of desire? The sentence brackets the poem in an unquantifiable value ("desire"), as if preparing for a fall. "X," in turn, is subsumed by language through a failed transmutation: the poem continues, "Our bodies"—and there is no sense, yet, of what or who this "we" refers to—"weren't right for it—," "it" being X. The em-dash here is placed in lieu of "because of":

gum around the bones,
a rash of gold or black,

eyes like blisters,
leaking fondness.

Not being "right for" X creates an imprecision, even aesthetic estrangement: bodies that grow awkwardly and bear irregular marks of contamination, wounding, and abrasion—rashes and blisters, which are porous and pervious to external bumps and shocks, and whose internality is marked by imperfect layerings of different tissues—skin, gum, and bone.

"X" loses its force to the thing it invents to supplement this failing of bodies, "all animal bodies." Language, which necessarily refuses balance:

Language forced X into the body
like carbonation into a soda.

Language here performs a takeover; it "forces" a transformation of properties, the body going from still water to something fizzing and bubbling. X and the body fused to form a new chemical compound. The violence of this fusion rehearses the violence of the genetic adaptation he carries and the specific rearrangement of genes that has formed a deadly fusion. Ewing's Sarcoma shows up in the bones, taking the form of a small round-cell tumor. It develops through the rearrangement of two genes between two chromosomes in a process called "translocation": parts of each chromosome move to the other, creating what is called a fusion gene. It is the protein coded by this gene, and little else, that is found in Ewing's Sarcoma tumors, and also a kind of chiasmus.

Genetic alterations can be named and even measured through linguistic schemas. Grammar has long offered a way of conceptualizing genetics: in the case of Ewing's Sarcoma, clauses rearranging, moving elsewhere, and fusing, that change the constitution of the body. Lily Kay discusses the development of molecular biology through the metaphor of information during the 1950s and 1960s. Following the publication of the double helix, she writes, "a molecular vision of life supplemented by an informational gaze" replaced the idea of life as "purely material or energetic" (2000, xv). Biologists

used information as a metaphor to refer to biological specificity, coding as the body's syntax. This syntactical model alienates matter by obscuring what is not coded, or what cannot be read. In this model, the concept of the gene is "part physicist's atom and part Platonic soul" (Keller 1995, 17). If the information metaphor has a material referent, it is not the code itself or the body it is supposed to stand for, but the technologies that facilitate the translation of matter into code, and by extension, into a forensic object that can be agreed upon in the forum of the laboratory; information means the establishment of scientific consensus. Genetic syntax offers a precise way of translating mutation, giving physical suffering a set of iconic referents, and setting the parameters for describing bodily matter: in "The Curve," a translucent rock that takes over the screen, the product of a rare fusion.

The next stanza moves from simile to the conjuring powers of particular words, obliterating the gap between image and body:

When I hear the word *rock*,
a translucent lump
shimmers in front of the world.

This image is not still; it moves the fizzing of carbonated water to an image of iridescence that takes up the frame of the speaker's perception. Bodies in this poem cannot see properly: the eyes are blisters, smaller translucent lumps, while this larger lump forms a moving horizon. Sarcoma arrives in modern Latin from the Greek word for "sarx" (flesh), through the accusative "sarkoun" (to/toward flesh), to "sarkōma" (flesh-process). The word transforms over grammar from a fixed description of an object, to a process of becoming flesh: a shimmering translucent lump that becomes flesh on MRI scans, shaded areas signifying a process of language made flesh—a combination of code that produces shaded areas on images of the body. The body becomes reorganized around the topography laid out by this secularized account of the word becoming flesh. The metaphor takes over the scene, leaving no gap between vision and matter.

This collapse of metaphor into the body is intercepted by the word at the beginning of the next stanza, "images," a bolt from the real world that breaks up the nightmarish takeover, reminding the speaker of the opening between body and representations. It brings the things gathered on the horizon into an indeterminate context of multiple images, which "vary exhaustingly and troublingly." This variation is a reminder that these are negotiations between "I" and reality: moments of technological seeing accompanied by methods of interpretation, not of finite horizons taken up by inanimate matter. These variations are not necessarily comforting. The stanza continues as if someone is struggling to breathe, hastily drawn breaths lurking at the edges of the lines:

Though the images
vary exhaustingly and troublingly,

I always remember
 the spoke of earth
 cutting into ocean
 we saw from above, on a bicycle ride,

These lines sound like someone recalling the past to someone they love at a great physical cost. The forensic precision of images is not a site of certainty, but produces exhaustion and a feeling of trouble—the opposite of what care is supposed to do. It is the memory itself, encased in “always,” which offers solidarity (“we”) and certainty (“saw”) in this moment, not what is subject to interpretation on a screen.

The spoke of the bicycle wheel is displaced onto the earth’s contours; the memory fragments and extends the structure of the bicycle to the description of the landscape. A spoke of earth that cuts becomes an instrument to penetrate an unmeasured expanse, a tool of exploration heavy with colonial-extractive symbolism. The technological probing of earth into sea substitutes the explorations that the speaker’s body has undergone through imaging. This “I” is extended into “we,” enjoying a leisurely activity, watching the implicit violence of this scene, rather than implicated within it. This distancing, of image from memory, of precision from care, and of the speaking “I” of memory from the “I” that conjures a terrifying horizon, allows the speaker to suspend his consciousness across the uncertain multiplicity of the present, toward an “always” that holds proof of a past.

This reprieve is temporary:

the sheen of the bicycles
 spreading over the earth
 distinct from the ocean’s sheen.
 The sheens alarmingly similar to one another
 to be so close together—like two bodies making love.

Bicycles and ocean share sheens, almost indistinguishable from—“alarmingly similar to”—one another. The adverb “alarmingly” of the penultimate line of the stanza echoes the ones in the second, “exhaustingly” and “troublingly”; it is a reminder of danger in the incalculability of proximity (“similar to”) and variation (“vary”). This alarm also reads as the alarm at the possible disappearance of two sheens, from two different temporal realms, into each other: ocean and bicycle. The horizon implied by the spread of sheen into sheen brings back the “shimmering” of the translucent lump, the alarm registering as a moment of vertigo at realizing the proximity of “we” to that illegible mass of water. This moment holds a temporal disjunction, between the passing sheen of the bicycles as they pass along the edge of the water, and the enduring sheen of the ocean. The full stop and line break of “distinct from the ocean’s sheen. / The sheens alarmingly similar” do not trace a collapse into paradox, but gesture to the uncanny proximity of two

disparate objects. It is another chiasmus: measures of difference bookending repetitions of the object in question—sheen. Sheen: a mirage of another substance on top of another, immaterial, caused by refractions of light on a surface. It inverts the relation of feeling and surface: the act of making love is “like” these proximate sheens, not the other way round.

The poem ends by coming back to the body of the speaker: “Skinny, hairy-chested, / made of pellets of rice,” these pellets also visual similes for how lumps appear on scans. The rhythm of the last stanza mirrors the breathlessness of the earlier one, a self-portrait of “I” experiencing themselves as a lover, “cheeping in a way that’s / endearing and inappropriate”—a small enthusiastic bird “confused, surprised at the confusion, / surprised at the surprise,” getting lost among the expectations of two lovers: the speaker declares themselves, “your lover and X’s.” Loving offers a link between the body and its imprecision, its incapacity to fit X, but its attempts—“very tiringly”—to meet it nonetheless. The body is un-imageable, despite the probes of the poem, throwing X off with diversions and distractions. The poem questions the reliability and truthfulness of imaging in terms of what it can tell us about the body, and how other kinds of images might come to matter. It exposes it as a practice that is, itself, bound up with the logic of metaphor, which is required to forget its fiction to make truth claims.

By contrasting the collapse of analogy into experience (the rock that takes up the whole horizon) with the particular, untruthful associations of memory (the sheens of bicycle and sea), the poem suspends the grammar of forensics. It resists the “forcing” of grammar into the body, loosening the collapse of analogy into matter, in images that are proximate but not reducible to each other—a kind of love-making, without the promise of reproduction. At the center of the poem is a snapshot of late afternoon, a dream conjured as the body struggles to breathe, without the hope of passing on a legacy.

LEGACY, LOVE, AND HARM

I hope I have a daughter. And that she’s like you—wanting to do good, always, with no fear or panic motivating it, just with the dogged certainty that love is worth investing in. (Ritvo and Ruhl, 282)

Ritvo frequently considers the difficulty of describing love outside an economy of investment, salvation, and sacrifice: it seems to swing back, like a boomerang, into narratives of living well, and dying a good death. The ongoing search for a cure makes him complicit in a bioinformatic industrial complex that sacrifices other lives as it attempts to monetize its salvation. He identifies as Jewish, “the son of poor, Rabbinical stock dispersed by pogrom and Holocaust ... raised out of penury” (“From One White Guy” 2014), descended from a history in which Jewish lives are not only less valuable, but have been subjects of experimentation and genocide for the sake of prolonging and promoting the supremacy of white Protestant lineages. Importantly,

this descent (“stock”) is not defined by biological characteristics but by historical experience. Now he, too, is complicit in that economy of prolongation, and in the eugenic arrangement of life into a taxonomic hierarchy. This is a chiasmus of love (as faith in salvation) and harm (as its cost). “Poem To My Litter” (2016) brings out this history of forced surrogacy through a deliberation on experimentation, and the complicity of the suffering human in a biomedical economy fixated on finding specific (precise) cures to sell to a general public. The “Max” of this poem moves between experimental subject and agent of violence, descendent of a history of genocide who is also, now, the subject who benefits from modern frameworks of scientific innovation.¹

Ritvo’s tumors returned while he was doing his B.A. in English at Yale. He underwent twelve more rounds of chemotherapy on the East Coast: two weeks of side effects followed by a week of respite. He refused to take ifosfamide, the drug that had caused hallucinations and memory loss the first time around, and began trying experimental treatments through doctors’ recommendations. Three years later, in 2015, he and his mother, Ariella Ritvo, sent his cells to a company that would implant them in mice, “seeding” tumors in them on which they would then test drugs. In Heidi Ledford’s words, “The mice would stand in as avatars for Max” (611). Ritvo began to think of the mice as his children. In July 2016, asked in an interview whether he felt “attached to them,” he said yes and, echoing the poem,

They have my genes in them. I don’t have any kids, you know. This is in a strange, really paradoxical way the closest I’ve come to having children. You think about them [the mice] as just these things that are dying for you and that are suffering for you. (Harris and Ritvo 2016)

This is the story of “Poem To My Litter,” which unfolds first as a description of the experimental treatments the researchers carried out with the mice as substitutes for Ritvo, before turning into an address from him to the mice. “I want my mice to be just like me. I don’t have any children,” and he has named them all “Max”:

First they were Max 1, Max 2,
but now they’re all just Max. No playing favorites.
They don’t know they’re named, of course.

They’re like children you’ve traumatized
and tortured so they won’t let you visit.

Fatherhood, property, and the possibility of a cure run close together through the poem, as the speaker attempts to articulate the total violence of the situation. The repetition of “my”—my genes, my litter, my mice, my doctors, my tumors—runs the logic of individual property into the ground. The laboratory practices he details explode the fantasy of harmonious,

reciprocal ecological co-habitation, getting at the violence of “the necessity to go through others in order to be what you are,” in Isabelle Stengers’ words (Jensen and Thorsen 2019). Max’s chances of survival are invested in the way the bodies of other creatures respond to “his” genes; “he” passes through others in molecular form, so that their bodies might produce knowledge about the way his own might be preserved. These are not really “his” genes, these are not really “his” mice, and “my doctors” is shorthand for scientist-provider and patient-consumer. The language of property frames these exchanges, instead, in the context of a finance economy that outsources its extractive logic to invisibilized locations, in which mice are commodities in a market of model organisms (others famous ones being *C. elegans*, a worm, and *Drosophila*, a fly).

Nikolas Rose considers the challenges of solidarity in the context of precision medicine. The focus on individualized care promotes a moral economy around genomic health that could bear on whether a patient-consumer would be prepared to pay for, “let alone care about, the health of others who are not related to me” (350). Humans and mice share 97 percent of the same DNA; in a literal sense, mice are used as genetic surrogates for humans. But humans and mice cannot interbreed: a human cannot give birth to a mouse. How, then, to conceive of the transmission of genetic material outside genealogy? How to think through the kind of trans-species solidarity Max is suggesting? Here, inheritance figures as contamination:

My doctors split my tumours up and scattered them
into the bones of twelve mice. We give

the mice poisons I might, in the future, want
for myself. We watch each mouse like a crystal ball.

I wish it was perfect, but sometimes the death we see
Doesn’t happen when we try it again in my body.

The experiment carries a New Testament legacy: twelve mice lining up with twelve apostles, and Max breaking his body to feed them with it. The metaphor of bread-as-body is made literal by the conditions of the experiment, biomatter split from its origin and scattered among believers as an act of faith. The “we” of “we watch,” it is implied, is Max and “his” doctors, but Max does not know the same things that they do; he is looking for something else. It is not just the mice that are “like crystal balls”; in this environment, his body is also a subject of divination.

While the tumors have spread, through space and over time, across Max’s body—“in my flank a decade ago. // Then they went down to my lungs, and down my femurs, and into the hives in my throat that hatch white cells”—in the mice they are contained, like undeveloped zygotes, expressing but not developing:

Their tumours have never grown up. Uprooted
 and moved. Learned to sleep in any bed
 the vast body turns down.

There is a contrast in syntax here which articulates the differentiation between Max and the mice's experience of the tumors: in Max's body, the tumors flow past a full stop and a stanza break, connected by the temporal signifier, "then," as if in a badly written children's story, where the topography of the body is a landscape of drops ("down") and crevices ("into"). The mice's tumors are defined by their not behaving like Max's: they have *not* "Uprooted // and moved," as if leaving home for the first time, and they have *not* adapted to the different resting places the body makes available. The short, disconnected fragments of sentences, stripped of pronouns, personalize the tumors rather than the mice, and keep the workings of Max's body central as a point of comparison.

To underscore this further: "we give the mice AIDS so they'll harbor my genes peacefully." Up to this point, the mice are abject vehicles for the transmission of biological degeneration, to share Max's own. "Harbour" suggests carrying a load, but also a docking place—a site to bridge water and land, through which cargo is shuffled along sea networks. Again, the poem constructs these experiments as part of a longer history of colonial-capitalist extraction where immunodeficiency becomes a biopolitical border: part of a system for shoring up bodies worthy of saving, while also becoming a bioinformatic commodity for mapping futures free from disease.

The genocidal implications of injecting a group positioned lower down in species/racial hierarchies reverberate through the history of eugenic programs in the Euro-US. The deliberate transmission of AIDS for scientific research conjures the Black men of the Tuskegee Syphilis study. Ritvo is not invoking these practices for literary effect; it is in the muscle memory of biomedical experimentation. This is fatherhood in a biopolitical production line: creating living forms that will sacrifice their lives for you, or that—more accurately—you will destroy and make suffer "for you." The mice have no choice; Ritvo is ridiculing the narcissistic parent who wants their child to be "just like me," who cannot allow their offspring to deviate from the model of existence laid out for them by their inheritance. In this case, that model is based on housing deathly material until some kind of answer can be divined from them. Molecular life is figured as intellectual property, a possible patent for a future cure, while the bodies that contain it are sacrificial surrogates. This is characteristic of the one-for-one substitutions of precision medicine, and the reduction of bodies to their biological code.

The rhythm of the final four stanzas does not alter considerably from the rest of the poem, but there is the sense that the speaker has taken a breath. He turns to address the mice directly, and the tone becomes one of reassurance and comfort. The mice will not let him share space with them; there

is some more fundamental remoteness between Max and them formed by a longer history of violence. The only thing that Max really knows about them is the identity they have been forced to take on: his own molecular surrogate, a fused protein. This is where the poem starts to be addressed *to* the mice:

I hope, Maxes, some good of you is of me.
 Even my suffering is good, in part. Sure I swell
 with rage, fear—the stuff that makes you see your tail
 as a bar on the cage. But then the feelings pass.

The first sentence is marked by a compression at odds with the explicit confessions of the poem up to this point, as if the speaker is trying to remain calm in front of the “traumatized and tortured” children of the previous stanza, having been granted some kind of audience—or writing a letter to them that he hopes they will one day read. The chord of parental narcissism resounds through it: a sadistic father who hopes, at the end of his life, to have left a legacy that might produce something “good.” Then, the meaning of “good” shifts in the next sentence from an unspecific, generic hope of patrilineal influence, to a consideration of what might be “good” about life marked by suffering—“rage, fear”—rather than faith.

Up to this point, the poem has premised a molecular correspondence between men and mice that will benefit the former, at the cost of the latter. The second stanza here departs from this instrumentalism. Max moves closer to the mice, marking his similarity to them, rather than exploiting theirs to his: “you see your tail / as a bar on the cage.” This is more than just an analogy for their respective imprisonment (the mice in real laboratory cages, him in the cage of his body); it is also a reference to their shared evolutionary history, and to the disappeared tails at the base of the human spine. Things get lost in evolutionary time: they fall out of images and stories. Entire species disappear. The inevitability of losing body parts (tails, legs, fur) becomes the bedside story of evolutionary history:

And since I do absolutely nothing (my pride, like my fur,
 all gone) nothing happens to me. And if a whole lot
 of nothing happens to you, Maxes, that’s peace.
 Which is what we want. Trust me.

“I” is decentered in these final lines by compound connectors: “and ... and...” “of ... which.” “Nothing” becomes the poem’s final subject, a pause in the procedure which links Max and the mice. This is not a father who wants to imprint his heroic deeds on his children. There will be nothing to take forward. In reality, Max cannot imprint his own desires onto the mice, and neither can he gain their trust. And because of their incompatibility, the

metaphor, "I swell // with rage, fear," only works in his body, and not theirs. The stanza break severs him from the possibility of sharing this with them.

This tracing of species difference is an analogy for the more general difficulty of solidarity in the context of precision medicine. But the poem does not invest hope in a politics of individuated uniqueness, wherein Max's dying is reified into something distinct from others (human or nonhuman). Rather, Ritvo suggests encountering time in the gerund. The final two stanzas suggest a temporary truce with time, in which Ritvo does nothing to shift it—"since I do absolutely nothing"; and because of this, time does not act on him: "nothing happens to me." Through this address that cannot happen—a communication between men and mice—Ritvo moves toward the reader, now also made into "Maxes," where this biomedical avatar is shared out during a pause in procedure, rather than in locating a cure. The suggestion of tyranny in the final line—"Which is what we want. Trust me"—is undercut by the fragmentation of these final two stanzas, chopped across parentheses and line breaks, delivered from somewhere close to an end: a final truce between surrogates.

Ritvo's mode of auto-poetry interrupts bioinformatic grammars, calling attention to the body lying prostrate, struggling for breath, and the lacunae created by transcribing this body through, and as, machine. In precision medicine, the body-as-test-subject is substituted by images, while also made into a surrogate for a biomedical gaze. This logic of surrogacy is part of the economy of precision medicine, which relies on devices and techniques of comparison in order to pursue possible cures. Solidarity is not only difficult in this context; it is based on an understanding of sacrifice that falls unevenly across distinctions and taxonomies of living matter. Ritvo breaks up this legacy of reading others and the self as surrogates in medicalized encounters with death by reading dying as gerund, eventually attending to spaces in which "nothing happens": a frozen memory, a body that does not adapt. While the particular rhythms of biocapital on which his survival depends capitalize on uncertainty, these moments of nothing happening allow for proximity, rather than reduction, to form an intervention in scenes of waiting.

NOTE

1. In my reading, I refer to the poetic subject of "Poem To My Litter" as Max, as opposed to Ritvo, the poet.

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