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Anthropology of Work Review

Bloodwork: Circulatory Disorders, Immunity, and the Scarring of Systems

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Abstract

In June 2021, laboratory analysis of my blood indicated dangerously low levels of iron. This article chronicles my subsequent diagnosis of uterine fibroids, the hysterectomy that followed, and the scarring that came afterward. In doing so, the article tells the story of how blood circulates—or not—through biosocial systems. It shows how the properties of blood are frequently connected to conditions of exploitation to advance the argument that paying attention to how blood works, or "bloodwork," can illuminate systemic inequality and alternative systems. In conversation with social reproduction theory, I consider capitalism's powerful extractivist orderings of immunity in which my iron comes at another's expense, alongside logics of immunity based on different circulatory visions. I hold on to the possibility of growing stronger without weakening others—so long as we can attend to history and its scars.

Keywords: anemia, uterine fibroids, hysterectomy, Covid-19, social reproduction theory

Anemia

If you look up anemia in a medical dictionary, you'll see it described as a hemoglobin disorder. You'll learn that hemoglobin, an iron-rich protein in your blood, is produced from the nutrients in bone marrow. It's what turns your blood red. Hemoglobin-filled red blood cells, also called erythrocytes, are the lynchpin of metabolism. They circulate oxygen away from your lungs to your tissues, bringing carbon dioxide from these tissues back to your lungs. According to common biomedical descriptions of anemia, an anemic body lacks sufficient erythrocytes to transport oxygen through the body. Anemia is at once a problem of air and blood: you are slowly suffocating.

Phenomenologically speaking, anemia can be tricky to identify since many people with anemia will not feel it—or at least not at first. Clinically speaking, anemia's diagnosis is also complex. One of the first lessons Dr. Noel Solomons taught me when I arrived at his nutrition research center in Guatemala City in the summer of 2006 was that low levels of iron can be protective against malaria—another disease of the blood. Solomons was critical of the widespread dissemination of iron supplements among children in Africa. As a Black nutrition scientist with a medical degree from Harvard and specialization in infectious disease (University of Pennsylvania) and gastroenterology (University of Chicago), he was well-positioned to see the shortcomings of conventional treatments of anemia, and indeed, years later research would show that iron-supplementation could be lethal in a climate with endemic malaria (Goheen et al. 2016). Without denying that anemia was a terrible problem, Solomons wanted me to see it as a normative designation, filled with human values: what someone in a lab looking at hemoglobin might decipher as a biological lack might be protective outside the lab. Rather than being determined by universally agreed-upon parameters, anemia's evaluation and treatment should, necessarily, vary from place to place.

Since its formation, the field of public health nutrition has taken a "notably monolithic" approach to treating anemia through nutrition supplementation (Solomons 2002). Solomons is part of a community of scientists redirecting attention away from what is eaten and toward environmental toxicities that contribute to inflammation and resulting infections. Immunology should not be held separate from metabolism, he has argued for years. When it comes to anemia, instead of asking "what do you eat?" to fill the marrow of your skeleton with available nutrients, we might turn our attention toward the toxic environments in which we move our bones.

Yet what to count as an environment is another site of debate (de Wolfe et al. 2021; Mendenhall 2019; Planey 2018; Lamoreaux 2023). Poor water and sanitation systems that contribute to chronic inflammation? AIDS treatment ecologies? Epigenetic, cellular development over intergenerational timescales? Toxic environments of racism and sexism that wear people down? Iron may be one of the most stable elements on

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the Periodic Table, but the need for iron isn't an inherent or intrinsic property of blood. Instead, this need depends on history, surroundings, and how people live. The deep lesson from this science is that blood is shaped by cultural values, including those surrounding conditions of labor and conditions of rest.

In contrast to the colloquial use of bloodwork to reference a laboratory diagnosis of the properties of blood, I use bloodwork to describe the cultural work that shapes how blood materializes. To speak of bloodwork is to recognize that blood is not a given in the body—nor the system—but takes work, in the sense used by Besky and Blanchette to describe a fragile practice of labor "tied to and changing within the worlds where it unfolds" (Besky and Blanchette 2019: 6). Blood materializes through systems; systems materialize through blood.

The image of recursive systems interrupts the mechanical metaphor of systems upon which biomedicine is founded (Rabinbach 1990). Biomedical practitioners frequently speak of the immune system, the cardiovascular system, the digestive system, the nervous system, the reproductive system, the endocrine system—and so on—as if these are separate, at times interlocking, but mostly self-contained circuits that operate within the larger whole of the body. The idea of bloodwork that I advance in this article questions this organization.

I trace blood across and through systems of iron and oxygen, as well as privilege and oppression, to emphasize that circulation is not bounded or contained but is dis-ordered in the sense that systems will jump, fissure, graft, or split. I draw inspiration from gastroenterologists who frame anemia as a circulatory disorder: cells lack sufficient oxygen, damaging the heart, which in turn makes it hard for cells to breathe. Bloodwork, as I use it, further positions anemia as a circulatory disorder of capitalism in which workers' lives are systemically and intentionally exhausted. Yet the power of conceptualizing blood as work lies in the recognition that capitalism is not totalizing and blood does not have to be circulated in this way.

As editors of this special issue note, historian Kathryn Olivarius (2019) develops the term immunocapital to describe the power and privilege that white business-classes wielded over others based on their survival from disease. People survived because they used their wealth to remove themselves from regions with high rates of infection. They then used narratives of biological superiority to further defend a "social hierarchy in which certain people were decidedly less equal than others" (Olivarius 2019: 427). Though Olivarius writes specifically about yellow fever in the antebellum US South, immunocapital illustrates more generally how white, able-bodied, and/or wealthy individuals can close themselves off from hazardous air, their health upheld by the labor—and death—of poor, disabled, and/or Black and Brown bodies who cannot afford such protections. Immunocapital helps to explain the unjust politics that have structured whose bodies have become sick from Covid and whose have recovered.

If we consider immunity as a system within systems, however, we see more than transactional exchanges in which some grow strong as others get sick. In her analysis of social reproduction theory, Tithi Bhattacharya observes that "much more theoretical attention needs to be paid to the relationship between the physical body in all its acts (such as eating, drinking, and procreating) and the social relationships of capital that such a body finds itself in" (Bhattacharya 2017: 11). The ethnography of bloodwork that follows hopes to offer such theoretical attention. I trace anemia's circulatory disorders to illustrate how these systems come to be—and how they can become undone. Capitalism may reproduce its violence through stratified immunity, but we can draw upon other workings of immunity to bring about transformation and repair.

Hysteria

In June 2021, at my first doctor's check-up since well before the start of the Covid pandemic, I asked my nurse practitioner to draw blood to check for irregularities. It had been a hard year for every care worker I knew, but I had somatized the challenge of living through the pandemic with an unusual side effect. Over the previous winter I had begun to deeply crave ice. Ice was my first thought upon waking each morning, and I needed to eat ice to stabilize my thoughts through the day. Hi'ilei Hobart has shown how the consumption of ice serves as a complex but potent materialization of western colonialism. In my case, it was as if the more powerless I became in political and social life, the more consumed I became by this source of "virtuous decadent cold" (Hobart 2016: 470).

The laboratory results of my blood reported that my hemoglobin and hematocrit levels were well-below the diagnostic markers for anemia and that my ferritin—a protein that serves as an indicator of the body's iron stores—was 3 micrograms per liter of blood. I was sent for immediate intravenous iron infusions. "I've never seen a ferritin number so low. I didn't know that was compatible with life," the nurse said to me as she inserted the IV of thick, rust-colored fluid through my skin.

People with anemia often learn to adapt to anemia's milder symptoms such as dizziness, fatigue, or shallowness of breath. But anemia's most significant danger is the damage done to a heart that is pumping insufficiently oxygenated blood, which will eventually lead to heart failure. Cardiac damage is not something that can be easily felt—especially in a society inattentive to pulse (Kuriyama 1999)—but within days of

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completing my infusion treatment, I knew I was in a better place. My desire for ice disappeared completely as soon as I had more iron in my blood.

In a good health care system, I would have grown up with enough reproductive health education to know that the pain and hemorrhage-level blood loss I had experienced each month for years were not safe. In a good health care system, doctors would listen carefully to women and have a robust, ethically sensitive field of research on women's health to draw upon to develop non-invasive treatment plans to manage blood and pain. In a good health care system, upon the discovery of low ferritin, I would have quickly had an ultrasound that would have, in turn, quickly diagnosed the fibroid tumors taking over my uterus. I could have had confidence in the advised treatment—a hysterectomy. This would have been scheduled quickly, and I could have had the procedure with a companion at my side.

Instead, when I first mentioned painful and overwhelming menstruation to a doctor at my university's student health center in my twenties, she laughed and told me this was a normal fact of a woman's life. I never raised the topic again, assuming that menstruation was meant to be a "curse," as thousands of expressions to this effect make it out to be. Patricia Tovar draws attention to the stigmatizing term "monstruation," which blends the idea of being monstrous into monthly blood loss (Tovar 2013: 641). She writes that negative and careless descriptions of menstruation serve to treat women as responsible for pain they experience, or to accuse them of falsely, hysterically, inventing this pain in their minds.

The bleeding in the months following my Covid vaccination—just before my anemia diagnosis—had become especially debilitating, but I didn't know to ask about vaccines. Research showing that the endometrial lining comprises a "variety of immune cells and is an important site for cell-mediated immunity" is only very recent and relatively underfunded (Vohra-Miller 2021). When anthropologists Katherine Lee and Kate Clancy began asking, they found that more than 140,000 women reported disrupted menstruation after vaccination (Brumfiel 2021; see also BMJ 2021, Lee et al. 2021). My doctors did not raise this as a possibility, and might not have known (I only learned about the association after the surgery). Vaccine hesitancy is such a problem where I live that professionals find it taboo to say anything negative about the shots.

As for this vaccine hesitancy? By the time I was able to schedule surgery, the Delta variant was overtaking hospitals and my surgery was delayed months. Many effective public health measures (testing, contract tracing, social distancing) were ignored, even as beds filled with Covid patients. When my surgery was finally scheduled for late October 2021, the risks of Covid meant that I would have to do it alone.

Did I need a hysterectomy? Yes, certainly. I was slowly but methodically bleeding to death. But also, maybe, no?

According to the US Office on Women's Health, upwards of 80 percent of US women have uterine fibroids, though this number is admittedly unstable since fibroids are frequently asymptomatic. Their growth remains poorly understood, as does their contribution to heavy blood loss (OASH 2022). Marisa Kabas reflects on the longtime dismissal of women on the part of doctors, writing, "If our pain was taken seriously and our bodies were treated like more than vessels for reproduction, perhaps we'd have an understanding by now as to why fibroids form, how to prevent them, and how to take them out without a life-altering surgery" (Kabas 2021).

Women of color, and especially Black women, were placed in a double bind as their pain was dismissed even as their bodies were spotlighted as pathological (see Findlay 2021). Every pamphlet the hospital gave me emphasized that uterine fibroids were more common among women of color, and especially Black women, than white women. Anthropologist Jada Benn Torres, who studies the genetics of uterine fibroids, describes the focus on Blackness as unsettling, given that there is no meaningful genetic definition of race or plausible biological mechanism to explain the tumors' occurrence and growth (as cited in Crespi et al. 2019).

In my case, I knew of no family history, and the commonly referenced "lifestyle risk factors" for fibroids did not apply to me (given how stigma shapes the science of lifestyle, I wouldn't have trusted them if they had). Only what is frequently glossed as "psychological stress" made sense, but research here is thin and full of methodological challenges given that fibroids both cause and are caused by disorder. What gets pathologized as psychologically aberrant might be a very reasonable reaction to a world demanding too much care work of women, all while systematically dismantling their social supports (For an array of information related to this, see: https://academiccarework.wordpress.com/).

I would have felt better about the doctor's advice to have a hysterectomy if it had not included a caveat that much of the accepted science surrounding the uterus is "a few decades old." In the prenatal pain-management classes I took in Amsterdam, it had been called my "strongest organ" (Yates-Doerr, In Press). But the US doctors I spoke with prior to the surgery assured me that the uterus had no function outside of reproduction, and since reproduction was in my past, it was of no use. It would have been easier to accept that surgery was the right path if uterine health was a well-funded field of science and not a science shaped by the twin forces of profit and pro-life political

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agendas (Labuski 2015). For me, the very term "hysterectomy" conjured not rejuvenation but a haunting and racially stratified US history of forced sterilization (see Chapin 2020). It would have been easier to accept this treatment if there was not an entire historical branch of psychiatry dedicated to hysteria, falsely associating madness with the womb.

Exhaustion

In *Timaeus*, Plato describes the uterus "without fruit" as an animal inside the woman that gets impatient and goes wandering about the body where it eventually blocks "the passages of the breath and, preventing respiration, it casts the body into the uttermost distress, and causes, moreover, all kinds of maladies" (Plato 1925: 91). He was, of course, writing about the experience of childlessness—an early example of what would become a deep, robust scientific tradition of viewing menstruation as an "unnatural" condition (Sanabria 2016).

Yet if women have been routinely marginalized for not having children, having children was no escape. Well before Covid, social services for women were collapsing. A Brookings Institute survey reports that before the pandemic, 46 percent of working women held low-wage jobs with a median earning of only $10.93 per hour (Bateman and Ross 2020). Structural racism furthered this disparity for Black women, for whom the number was 54 percent, and Hispanic or Latina women for whom it was 64 percent.

Political responses to Covid further sacrificed women. A Pew Survey from August of 2020 showed that "mothers are three times more likely than fathers to have lost jobs in the pandemic," adding that more than 2 million US women with children under 12 were unemployed in the first six months of the pandemic (Henderson 2020). Across the United States, businesses stayed open while schools and childcare centers closed. Newspapers published article upon article about the hardship facing women during the pandemic. After a while, the mothers I know stopped reading them. Even worse than being forgotten was realizing we weren't forgotten: we were meant to be squeezed from all sides during the pandemic. Politicians, who were never comfortable with women working outside the home, wanted us to fail and hurt.

Though the press frequently described the abandonment of social support for childcare as an unfortunate and unwanted "side effect" of Covid, academics were quick to reframe this as a strategic, desired outcome of powerful US elites (Schneider et al. 2021; Cromer and Bjork-James 2020). Nancy Fraser argues that the so-called crisis of care is not accidental but a fundamental condition of financialized capitalism that requires the unpaid social reproduction of care work to reproduce itself (Fraser 2017: 22). Her point, strengthened by social reproduction theory, was that bone-tired exhaustion should be primarily understood as an effect of cruel politics, not deficient blood. Consider that at the second US presidential debate in the fall of 2020, Trump spoke of economic slowdown as death: "Restaurants are dying, businesses are dying." He complained that Covid protection measures such as shutdowns and mask requirements were harming the economy. But the economy he defended was a fabrication, an abstraction, and not a living, breathing being. It cannot die from Covid like millions of people have died. Making Fraser's argument explicit, Trump emphasized profits over workers' lives.

When my laboratory bloodwork returned with a story of severely low iron, I was not surprised. I saw my diagnosis as a symptom of the systemic exhaustion wrought by the deep sexism of Covid-era politics—a symptom of living in a world where politicians were making deliberate choices to let care workers suffer and die. And even as I was suffering, I was privileged in my pain. For many, the systemic sexism materialized in anemia was compounded by other systems of oppression. In the years leading up to my diagnosis of anemia, two national conversations about oxygen deprivation, or what Ali Kenner (2018) has called "breathtaking" injustice, were taking place: one about anti-Black police brutality, the other about global warming. To be clear, I do not draw together stories of anti-Black police violence, climate catastrophe, Guatemalan malnutrition, and my own anemia as part of a comparative project. We are not here in the terrain of analogies, but in the coordinated, interconnected conditions of capitalist life, built upon the violent and uneven distribution of blood and breath.

In the spring of 2020, a white police officer pinned his knee against the neck of George Floyd, obstructing his airway and causing his death. "I can't breathe" became a rallying cry against anti-Black police brutality. The slogan spoke to systemic oxygen deprivation of Black people. At the time, the coronavirus was moving swiftly through the circulatory systems of prisons disproportionately and intentionally filled with Black men (Wilson Gilmore 2007). Early in the pandemic, the American Medical Association reported that incarcerated people in federal and state prisons were infected with coronavirus five times more often than the national US population (Saloner et al. 2020). One year into the pandemic, roughly 40 percent of the US incarcerated population had tested positive (Burkhalter et al. 2021). Breathing would, for many prisoners, become a death sentence, lungs filling with fluid as suffocation took place on a mass scale.

The summer that saw widespread civic protest against police brutality also saw fires spread throughout the US West Coast. Skies turned red, sending air pollution levels into zones never before reported and

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hailing the tragedy of global warming as air became toxic. Echoing the recent "stay at home" Covid orders, millions of people were told to stay inside. "Run air purifiers, seal your door frames," health officials advised their imagined publics—as if this was possible, as if this was helpful guidance.

Staying home, we'd learned early on in Covid, was genocidal advice when not accompanied by social supports (paid time off, paid sick leave, universal health care, affordable housing). And, in the US, these supports never accompanied the stay-at-home mandates. Chelsey Carter and Ezelle Stanford warned in the pandemic's early days that public health narratives, and the government's response, were shaped by the "afterlife of slavery and the pervasive power of white supremacist thought" (Carter and Stanford 2020). They write, "Those that are the most invisible, most marginalized, and who lead the most precarious lives will be the ones most affected by COVID-19. They certainly are not always the first individuals diagnosed, but they are usually the first to die" (2020).

Indeed, as reported in the *Journal of the American Medical Association*, during the first year of the COVID-19 pandemic, "American Indian or Alaska Native, Latino, Black, and Asian or Pacific Islander persons were significantly more likely to be hospitalized, receive ICU care, or die with COVID-19–associated illness compared with White persons" (Acosta 2021). In a potent example of systemic, racially stratified exploitation, prisoners would be coerced into fighting fires during Covid with little training and paid but a few dollars a day. They carried out intense manual labor to defend against the inferno of smoke and heat, returning at night to what were called, hauntingly, "camps" (Brangham, et al. 2021). For months, lungs across the US West choked with smoke: from the fires and, because Covid was killing more people than cemeteries could handle, from the incinerators in the morgues. Reflecting on how plantation legacies have shaped Black life in the United States under Covid, Yesmar Oyarzun describes how racism is "present in the breaths we do not take, the ones we cannot because we have been suffocated by police, or by asthma, or by COVID-19 by way of the very actions we take to ensure survival in the master's house by providing care" (Oyarzun 2020: 588-589).

Cedric Robinson argues that "differentiation" is a key tendency of capitalism (Robinson 2000: 26). He is writing specifically about capitalism's reliance on making ever more discrete racial sub classifications based on regions, subcultures, dialects etc., but his broader point is that capitalism relies on fragmentation. Even as it offers up the promised myth of "equality," it divides people, nations, and members of the workforce from one another, using race (metonymic of blood) to create classifications such as skilled or unskilled laborers, migrants or knowledge migrants, and so on. It also pits varying experiences of oppression—race, ethnicity, gender, class, sexuality, disability, age—in conflict with one another. The point is not that capitalism is structured to care about differences, but that capitalism is structured to keep broad structures from view.

Yet seeing an interconnection in systems is but a step to transforming the conditions of capitalism's "unbreathable world" (Kenner 2018). Fragmentation's opposite is not homogenization. Instead, Robinson advocates a politics of solidarity that can recognize without naturalizing hierarchies, which can see the materiality of racism without reifying race as intrinsic. Race becomes real not because it is in the blood, but because it is treated as something in the blood (Fullwiley 2011). Indeed, numerous interlocked systems of oppression materialize in blood. Seeing blood as work inspires the call to resist oppression without embracing homogenization. We are not all the same: circulation creates sometimes vital and sometimes harmful differences. Robinson's theory of racial capitalism pushes us to build a circulatory system that can embrace those differences that are valuable and eliminate those that are harmful, all without naturalizing inequity. Faced with exploitation it asks, how can we make blood work in other ways?

Surgery

My experience of surgery was what Argenis Moreno Hurtado has called a "beautiful violence," in reference to the power of the ocean to both pull you under and be a source of life (Moreno Hurtado 2021). After a year and a half of reading horror stories about intubation during Covid, I had an intubation tube inserted into my throat, turning my lungs into balloons that would open up my rib cage to make space for the surgeon to cut, splice, and sew my insides back together. Because I was under general anesthesia, I have no recollection of the procedure. Surgery's memory unfolded for me not in consciousness, but in the bruising I felt at each breath when I awoke.

Many of the details of what happens in a hysterectomy are too intimate for me to put into writing. A fact of trauma is that some spaces stay blank. I came back into the world after anesthesia numb and confused. The nurse who was there afterward wanted me to try to sit up (I could not), to try to stand (I could not), to try to pee (my bladder had been emptied with a catheter and I would not be able to for many hours). "What have you done to yourself?" a voice howled from inside me. To forget that I had allowed my body to be cut open and cut up, I reminded myself that pain could be healing.

Before I had walked into the hospital alone, in the darkness of 6 a.m. in October, my friend Natali Valdez

had read me the poem "Blood-Light" by Natalie Diaz (2020). In the poem, a man holding a knife asks his sister, the author, "Don't you want a little light in your belly? Like the way Orion and Scorpius—across all that black night—pass the sun."

My children, two boys I once held safe in my belly, are Orion and Saul. I heard Natali's voice reading the final lines of Diaz's poem: "One way to open a body to the stars, with a knife. One way to love a sister, help her bleed light." Context is everything, I promised the incisions running across my abdomen, as if they were children that couldn't know on their own that there was a good reason for the pain.

But what was "the context" that made the surgery healing and not harmful? Certainly, there was the context of low iron, caused by blood loss, in turn caused by a large fibroid that was likely to grow. There was also the context of debilitating pain and discomfort I felt each month. It certainly was at least part of the context that I am recently tenured at a public university where faculty are unionized, which gave me a contract with medical leave and protections that reassured me I could take it. My job also provides health insurance so the procedure would not bankrupt me, unlike many others who need similar care. But another part of context is that even with insurance, I was still trapped in a health care system buckling under the pressure of the pandemic. And, of course, there was the related context that this collapse was driven, in part, by the profit-driven character of life and death under capitalism, as well as the context of systemic oppression facing women and caregivers imposed by capitalism that had finally worn my body down.

When thinking about anemia medically, as a disease caused by uterine fibroids and blood loss, surgery made sense. But when thinking about anemia politically, as a systemic effect of capitalism, surgery seemed like a "shortcut," in the sense of being a treatment that would not address its cause (Solomon 2014). Considering the tens of thousands of dollars that the hospital would bill for the procedure, surgery might even be a site of misdirection—seeming to help at first while eventually making the problem of systemic exhaustion worse. For the sake of my bruised and battered body, I wanted there to be a context where the surgery had been the right choice. But the overlapping contexts blurred boundaries between healing and harm.

During the period in my life that my uterus was filled with the growing bodies of my babies, I worked closely with Annemarie Mol, who was, at the time, engaged in an expansive conversation about cutting with Marilyn Strathern (Strathern 2011, 2012; Mol 2011, 2014). Strathern highlights how Mol's notion of multiplicity, developed in the surgical operating theater, offered an alternative notion of world-ordering to fragmentation. Whereas the language of fragmentation divides the world into discrete entities (analogous to land that is cut up and sold), "multiplicity implies entities joined with, and disjunct from, other entities that cannot be reduced to a plurality gatherable into wholes" (Mol 2011: 92). Multiplicity, as Mol develops it, rejects Euclidean mathematics and its related colonial geographies. Instead of many different perspectives on a shared and single world, when doctors cut open their patients, these cutting practices materialize multiple worlds. Close, empirical attention to bodies in and outside surgery allowed Mol to address the affordances and erasures made by different coordination techniques within the hospital. This was not systems-thinking based on logics of mechanics, but systems-thinking of bloodwork, in which we learn to ask what connections make possible or foreclose.

Strathern responds that in English, one can metaphorically say "I've cut you off," but this works literally in Melanesia, where an activity like washing your eyes in a cold mountain stream to get rid of what you have seen is an act of cutting that makes you a man. Mol later reflects upon this example, noting that "it is not obvious always and everywhere which activities count as cutting" (Mol 2014: 94). A surgeon splicing through iodine-covered skin to temporarily stop the circulation of an atherosclerotic artery is a different practice of cutting than the butchering of a sheep, where the skillful use of a knife will enrich the flavor of meat (Ibáñez Martín and Mol 2022). Her point was that context was not the background field of an object—a set of fixed things in which the object sits—but a relational practice of making things matter.

Shortly after regaining consciousness, the surgeon asked if I'd like to see the images taken during the surgery and, when I said yes, handed me a glossy color print with three photographs. I didn't know what I was looking at, so she pointed out the light-pink fibroid and the blood-red sutures marking the spot where my organs were removed. I would later receive a toxicology report, stating, in stark, clinical terms, that the lab had "Received fresh labeled 'Yates-Doerr, Emily' that included a uterus with cervix and bilateral fallopian tubes." Jenna Grant has written about how people use ultrasound images to get clues about spaces of intimacy they cannot directly see (Grant 2017). These images do not just reflect reality but give shape to it, and, indeed, looking at the photographs of my organs gave me a newly haunting sense of what was now gone.

When the surgeon left my side, I asked one of the staff members for my phone. Cut off from my friends and family by the hospital's no-guest Covid policy, I wanted to let my community know I was okay, and to make sure they were okay, too. Having my phone also meant being with social media. As if

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the algorithms could anticipate my life, one of the first posts I saw screamed up at me, "Most women have a cervix and most people with a cervix are women—but not all are." It took me a moment to understand the discussion animating the post was not about hysterectomies, but about health messaging surrounding pap-smears in the UK. It was advocating that messaging be anatomically accurate and inclusive, pointing out that people who do not identify as women, including men, may have a cervix and should be included in health advice. I appreciate the spirit of the intervention, but the wording caught me by surprise. I had to run the statement "most women have a cervix" around my new body, like a washcloth cleaning a wound.

> *What does being a woman have to do with having a cervix? Sure, I'd pick "Dr." or "Professor" over "Mrs." any day, but I am still a woman without a cervix, am I not? Why are we associating women with biology?*

I knew the answer to this last question was that for some people, including me, the association was a matter of life or death. We must talk about biology and sex and gender and the cervix together because reproductive health is so often deprioritized in health care policy and because some people are routinely denied medical access to the bodies and lives they should be living and the surgeries they should have (see Van Eijk 2017). I could not separate women and biology because the systems I lived in did not.

This is exactly the point about cutting that emerges from Strathern and Mol's discussion. In fact, years before their exchange, Mol had published an article titled "Who Knows What a Woman Is?" that called for paying attention to how ontologies such as "woman" interface with power (Mol 2015). Where many feminists were arguing that differences between the sexes were social and not biological, Mol attended to the content of biology. In doing so, she showed how various "biological" fields—endocrinology, anatomy, genetics—did not often agree. What became "woman" in their practices was achieved, temporarily, through techniques of coordination, cooperation, and struggle. A lasting lesson was that sciences do not just know biologies but change them. The work for the anthropologist—what I am calling bloodwork—was to study these transformation practices to "embrace the experience of the everchanging" while also responding to the impervious, enduring structures we live and die within (López 2021: 5).

These possibilities and limits of now inhabiting a body without a cervix were on my mind as I came back into myself following surgery. But it was also the case that the conversation was exhausting. I shut down my phone, cutting the conversation off.

Cicatrizar

I could not fill my prescription for nausea medication because of supply chain shortages, and I vomited several times on my way home. But then I was in my bed and, over the next few days, greeted with cards from colleagues marking the excision of my uterus, along with soup, quiche, novels, poetry, and fresh and dried flowers. Anthropology may have a patriarchal history that carries into an ongoing patriarchal present, but it is also full of feminist companions, fiercely committed to cultivating a nurturing field (consider "field" in terms of a wild meadow, and not as the plane of vision under a microscope).

Calls came in from Guatemala, too. One friend from Guatemala insisted that I rest "para que el daño cicatrice." Her order does not translate easily. While it could be translated as an order to rest "so that the wound heals," a transliteration would be "so that the wound scars." Lochlaan Jain (2007) writes about the discomfort that US biomedicine produces when it comes to scarring. In Jain's analysis, living with and performatively representing the scarring of surgery was a critical, queer intervention against the normative violence wrought by biomedical illness and its treatments. Jain quotes Audre Lorde's insistence on the display of injury as a means of transforming biomedicine. "I refuse to have my scars hidden or trivialized," Lorde writes (cited in Jain 2007: 508). My friend is an Indigenous K'iche' woman, well-versed in politics, but I do not believe she had broad political-performative action in mind when encouraging me to *cicatrizar*. She was, rather, simply thinking in a language other than English. To heal, in English: to make the scar disappear. To heal, in Spanish: to strengthen the scar.

Another elderly friend, who has recently had several dangerous surgeries herself, sent me a voice memo with instructions for making soup that I was to give to my mother: "Boil liver, onion, and tomato together, blend the mixture with a food processor, strain it into a broth to be consumed three times a week. Two cups per serving. Add some watercress if you can," her message specified. A few moments later, another voice memo came through with a kind warning: "One thing that is certain is that the midwives and ancestors (*viejitas de antes*) know that you have to follow a bit of a diet so as to not suffer when you're older, like I do."

Many anthropologists, including myself, have argued that biomedicine's focus on diet directs attention toward poorly made individual choices and away from the patterned inequities shaping the systems in which people live (Gálvez, et al. 2020; Hardin 2021;

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Valdez 2021). The argument is that diet talk (much like weight talk) is stigmatizing and misdirected, asking individuals to take personal responsibility for illnesses whose causes lie in social structures. This argument resonates with the work of gastroenterology-inspired nutrition scientists, whose research on immunostimulation suggests that anemia should be considered a structural and not bodily pathology. For example, Dr. Solomons (2002), cited above, has shown how an etiology of anemia focused on the body leads to iron supplementation, a dangerous response in regions with malaria. He argues that public health treatments for anemia should focus less on bodies and more on toxic infrastructures, such as collapsed water systems that lead to high-microbial environments, which make already marginalized people, and especially children, chronically sick.

With this critique in mind, what are we to make of the practice, organized and administered by women across generations, of caring for people through food? We might draw from the observation that anemia is a product of structures to dismiss my friend's offering of broth. And, indeed, "eat better" can be the advice of racial capitalism, blaming one's inability to change on the self and framing the problem as rooted in blood and not political-economic systems. Yet the care for diet that happens when my friend passes along a family recipe to my mother is substantively unlike the care for diet that happens with the distribution of an anonymous iron supplement. "The diet" of the supplement (premised on universal efficacy) is aimed at deficient bodies and not at toxic landscapes. It is a diet that strengthens relations between corporate interests, causing relations between people to dissolve.

Meanwhile, my friend's broth strengthens interpersonal relations. Whatever is eaten is but a part of the recipe, which also offers a thread to stitch fragmented communities together. What the midwives and *viejitas de antes* were saying was not only that you must follow a diet, but that you must let others in—to put yourself in the position of receiving care. It may seem as if their offering does not address the broader landscape, but to make good soup, to read poetry to each other, to offer flowers to bring beauty to those in pain, to listen, to care for trauma in small ways can be healing and not harmful precisely because of how it strengthens people over profit.

Surgery in a profit-driven medical system might arguably be more like the iron supplement than the broth. But this is where cicatrizar comes in. Cicatrizar does not aspire to forget a painful history that systemically produces some people as sick. When blood is weak—when people are forced to live without oxygen—it asks about the conditions of history that reproduce this weakness. It heals by being close to and breathing life into this history. It cares for it, feeds it—not alone, but in the company of others. It does not aspire to be smoothed out and unblemished. It more honestly embraces the rough edges of illness and recovery. Capitalism lies, offering a promise of equality even as it fragments people in difference. Cicatrizar sutures differences together, but not in a way that causes them to disappear.

Conclusion

When I told Dr. Solomons that intravenous iron infusions quickly treated my anemia symptoms—the desire for ice that had consumed me one year into the Covid pandemic disappearing overnight—he pointed out that I was "lucky." Most women in Guatemala cannot access this relatively safe and immediate, if temporary, antidote for poorly oxygenated blood. Instead, Guatemalan doctors will more commonly prescribe pills Solomons called "terrible and ineffective." In cases where anemia is connected to debilitating uterine fibroids, surgery is not on the table for most women. They cannot wrestle with the pros and cons of undergoing the invasive procedure. Even before Covid, the surgery was too expensive or dangerous to be a choice, and now health care systems have all but collapsed.

Another name for this "luck" of mine is privilege—or, to be more specific, white, cis, heteronormative, settler-colonial privilege. US wealth, and the related technologies that made my medical care possible, have benefited from decades in which US corporations drew profits from Guatemalan labor and land. To conceptualize anemia through an idiom of extraction is not mere metaphor (see also Velasquez 2016). The day I returned from the hospital, police in Guatemala cracked down violently on a demonstration against a North American-owned mineral processing plant. As my blood pumped strongly, now rich with iron, while I recovered from surgery in the safety of my home, North American mineral corporations were doing their best to weaken the protests—and bodies—of Guatemalan workers.

Pandemic life has accentuated the truth, known intimately by many for generations, that capitalists protect their profits at the cost of laborers' lives. Olivarius' immunocapital speaks to how those with privilege will willfully deploy their power to shore up their immunity. They close themselves off in their houses, protected from contamination. Unlike those who must labor publicly to live, they have the means to breathe clear air. They survive, and because they survive they reproduce themselves and their power. As Olivarius explains, harms against immunity are part of capitalism's design.

But if immunocapital gives us a term through which to understand the stratification of illness under capitalism, consideration of bloodwork highlights

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other systems of immunity that will interrupt capitalism's reproduction. Unlike profit, immunity does not always depend on the exploitation of others (see Martin 1994). When thinking of bloodwork in terms of mineral extraction, I benefit from the weakness of others, my iron coming at their expense. But the reverse is not necessarily true: Guatemalan women with anemia will not benefit if I am sick. We are not operating in the terrain of a closed circuit. Consider that for some systems of immunity healing can have rippling effects, bringing about care rather than harm. For current examples: we can vaccinate and wear masks to decrease the risk of transmitting Covid. We can help build good food and water systems and restrict fossil fuel emissions standards to bring benefits far beyond ourselves. We can fight to change the conversation so that before we pathologize bodies as sick, we ask about the working conditions they must endure. The way we conceptualize these issues shapes the possible terrain of action. The way we define a problem will structure its cure.

Immune function is not a given in biological systems but emergent from the conjunction of these systems and how we work to respond to them. To insist that blood takes work is to insist that it can emerge in other ways. Iron has long been a symbol of strength. Yet thinking of iron not within a body but in terms of a system of overlapping systems can help. Immunocapitalism may define some bodies to be immune and strong while others are vulnerable and weak, but as the midwives and *viejitas de antes* have known, we are much more than ourselves. Sometimes we need to be strong to lift each other up. Or we call upon strength to endure the pain of change. What we have here is not the strength of a muscle in battle used to defeat another, but the strength of a uterus that ushers in birth. Or, on occasions when the uterus has been cut, the newly found strength of the scar.

Epilogue

After my surgery, my friend Sandra Rozental asked me whether I'd have monthly periods, given that I had ovaries but no uterus. I explained I would never bleed regularly again. "My vagina is cut off and sutured at the end. It doesn't lead to anything," I responded, visualizing the human anatomy textbooks of the reproductive system in which the vagina is but a pathway to the uterus.

Sandra, an anthropologist, knows to question the naturalization work that happens in these kinds of images (so do I, but biomedicine is powerful and sometimes I need help).

"That's a strange way to put it," she responded gently, then added, "It leads to you. It always has."

What she wanted me to see, which I want to share with you is this: the cut need not be a closure. It can be a pathway to a different kind of world.

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