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Title: 'More than biological': Cherie Dimaline's *The Marrow Thieves* as Indigenous counter-genetic fiction.

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Abstract

This article reads Métis writer Cherie Dimaline's novel *The Marrow Thieves* as one among a growing number of Indigenous counter-genetic fictions. Dimaline targets two initiatives that reductively define Indigeneity as residing in so-called Native American DNA: 1) direct-to-consumer genetic testing, through which an increasing number of people lay dubious claim to Indigenous ancestry, and 2) population genetics projects that seek urgently to sample Indigenous genetic diversity before Indigenous Peoples become too admixed, and therefore extinct. Dimaline unabashedly incorporates the terminology of genetics into her novel, but I argue that

she does so in order ultimately to underscore that genetics is ill-equipped to understand Indigenous ways of articulating kinship and belonging. The novel carefully articulates the full complexity of Indigenous self-recognition practices, urging us to wrestle with the importance of both the biological (DNA, blood, relation) and the "more-than-biological" (Story, memory, reciprocal ties of obligation, language) for Indigenous self-recognition and continuity. To grasp Indigenous modes of self-recognition, the novel shows, is to understand that Indigenous belonging exceeds any superficial sense of connection that a DNA test may produce, and that, contrary to population geneticists' claims, Indigenous Peoples are not vanishing, but instead actively engaged in everyday practices of survival. Finally, I point out that Dimaline – who identifies as Two-Spirit – does not idealise Indigenous communities and their ways of recognising their own; *The Marrow Thieves* also explicitly gestures to the ways in which Indigenous kinship-making practices themselves need to be rethought in order to be more inclusive of queer Indigenous Peoples.

'More than biological': Cherie Dimaline's *The Marrow Thieves* as Indigenous counter-genetic fiction.

"White Americans make claims to Native American genetic ancestry and identity in ways that mirror the kinds of claims that whites have made to other forms of Native American patrimony – whether land, resources, remains or cultural artifacts." (Kim TallBear, *Native American DNA*)[1]

While our potential skills for analysing human evolution are increasing, social changes taking place in developing countries are rapidly destroying the identities – if not the very existence – of the most important aboriginal populations. Thus, organised research efforts to save this precious information about our past have acquired a new urgency. (Luca Cavalli-Sforza, Paolo Menozzi and Alberto Piazza, *The History and Geography of Human Genes*)[2]

For Indigenous Peoples, the genomic age presents a peculiar paradox.[3] On the one hand, the marketing ploys of highly popular, direct-to-consumer genetic testing companies drive an increasing amount of non-Indigenous people, especially in North America, to use these tests to back up their dubious and often romanticised claims to Indigenous ancestry or, more blatantly, to lay claim to the benefits of affirmative action that some settler-colonial nations have instituted for Indigenous communities.[4] On the other hand, the field of population genetics insists that in "a shrinking world" of increasingly genetically admixed populations, Indigenous Peoples with genetically "isolated" identities are on the verge of vanishing, a claim that legitimises the need to urgently sample them before they cease to exist altogether.[5] I suggest in this article that Cherie Dimaline's young adult novel *The Marrow Thieves* (2017) repudiates the geneticisation of Indigeneity for plunging the Indigenous Person into near (genetic) extinction, even as a new and growing group of consumer-citizens lay claim to so-called 'Indigenous genetic ancestry' hoping that this lineage will fulfil a range of personal, political and/or economic desires. Insofar as it refutes the claims that genetics makes in relation to Indigenous Peoples, I argue, *The Marrow*

Thieves is a counter-genetic work. Provocatively, Dimaline (Métis) incorporates the language of genetics into her novel in order to show that genetics is ill-equipped to understand Indigenous ways of articulating kinship and belonging.[6] And in an outright challenge to the prevailing view amongst population geneticists that the Indigenous Person is on the ineluctable path to extinction, Dimaline deliberately weaves a tale about the active practices of survival that produce Indigenous continuity and *survivance*.[7] I will argue, furthermore, that Dimaline – a self-avowedly Two-Spirit writer – seizes upon the shortcomings of genetic discourse to gesture to the ways in which Indigenous kinship-making practices themselves need to be rethought.[8] Survivance, Dimaline's novel suggests, only reveals its full counter-genetic potential when it ceases to allude to futurity in an exclusively hetero-reproductive vein.[9]

The Marrow Thieves is Dimaline's most critically acclaimed and commercially successful work to date, and like other successful novels in the YA genre – Susan Collins's *The Hunger Games* series or Patrick Ness's *Chaos Walking* trilogy spring immediately to mind – its main protagonists are young adults separated from their parents and engaged in a fight for survival in a dystopian alternative universe.[10] *The Marrow Thieves* transports us to a Canada some fifty or so years in the future. Earth has been devastated by climate change, and changing weather patterns have ravaged human settlements across the planet. Many have been killed, first by water shortages, then by rising waters; countless others have succumbed to starvation and disease. All non-Indigenous people have become afflicted by an inexplicable syndrome: they have lost the ability to dream, an ability that all Indigenous Peoples have mysteriously retained. The novel's young protagonist and narrator is called Francis, but goes by the nickname Frenchie or French, "as much for my name as for my people, the Metis," he tells us.[11] Like most other Indigenous Peoples, Frenchie is on the run from the Recruiters, who have been charged with capturing Indigenous people by the Canadian government's Department of Oneirology.

The novel opens with the story of how Frenchie is separated from his last remaining family member, his older brother Mitch. When they are both discovered by the Recruiters, Mitch

sacrifices himself so that Frenchie can continue travelling north, where all Indigenous Peoples are now headed in order to forge a new homeland. Struggling to make headway on his own, Frenchie is eventually found by a group of fellow Indigenous fugitives who are headed in the same direction. Their leader, a middle-aged man named Miigwans, explains their gradually worsening predicament now that they have become prized resources who harbour the cure to the malady of dreamlessness:

> "At first, people turned to Indigenous people the way the New Agers had, all reverence and curiosity, looking for ways we could help guide them. They asked to come to ceremony. They humbled themselves when we refused. And then they changed on us, like the New Agers, looking for ways they could take what we had, and administer it themselves. How could they best appropriate the uncanny ability we kept to dream?" (88).

Frenchie joins Miigwans's crew, and from them, he learns that scientists have now discovered how to extract dreams from Indigenous bone marrow. Once captured, Indigenous people are housed in new, purpose-built residential schools adapted for siphoning off their dreams:

> "We go to the schools and they leach the dreams from where our ancestors hid them, in the honeycombs of slushy marrow buried in our bones. And us? Well, we join our ancestors, hoping we left enough dreams behind for the next generation to stumble across" (90).

Dimaline's pointed reference to "the schools" reveals that the novel is profoundly anchored in its Canadian context, where the traumatic legacy of a residential school system designed to remove Indigenous children from their families, their homes, their land, their languages and their cultures became the key focus of the Truth and Reconciliation Commission. Chaired by Senator Murray Sinclair (Ojibwe), the Commission's 2015 report asserted that residential schools were a "central element" in the Canadian government's Aboriginal policy, which was explicitly designed to "cause Aboriginal peoples to cease to exist as distinct legal,

social, cultural, religious, and racial entities in Canada."[12] The widespread acclaim with which *The Marrow Thieves* has been received in Canada, then, can be ascribed to the relative ease with which the novel's plot can be read as both a timely reminder of a traumatic Indigenous past, and as a salutary warning that a failure to genuinely learn from this past will continue to exacerbate existing social inequalities, and create new, equally destructive policies in the future.[13] To strike this cautionary tone, Dimaline deliberately sets her novel at a time when the old-style residential schools are a thing of the past and yet their memory is still vivid enough for non-Indigenous Peoples immediately to draw on them for inspiration when water shortages, climate change and disease eventually deprive them of the ability to dream. Without dreams, Miigwans tells Frenchie, "[p]eople lost their minds, killing themselves and others and, even worse for the new order, refusing to work at all" (88). With the realisation that Indigenous bodies could be rounded up and harvested for this resource, we learn, non-Indigenous Peoples "turned to history to show them how best to keep [Indigenous Peoples] warehoused, how to best position the culling. That's when the *new* residential schools started growing from the dirt like poisonous brick mushrooms" (89, my emphasis).

While the novel responds well to being treated as an exercise in education and caution for Canada's Indigenous and non-Indigenous young adults about the nation's settler colonial past, I propose to take a different approach. I want to focus on the fact that the schools built in *The Marrow Thieves* serve a different purpose from that of the schools that existed in Canada until as recently as 1996. Those schools, as many have widely noted, were designed to bring about genocide and cultural genocide by removing Indigenous children from their families and homelands, and punishing them for speaking their languages.[14] What happens in the new schools built in *The Marrow Thieves* is of a different order. Once the site where undesirable traits were forced out of Indigenous children, the residential school now becomes the place where a coveted resource is harvested from Indigenous Peoples so that non-Indigenous Peoples can benefit from it. The shift in the purpose of the residential school mirrors the modified role of Indigenous

Peoples in the genomic age: once deemed expendable, they are now seen as indispensable, if only for the preservation of *others'* lives. The transformation, as Dimaline's protagonists note, produces a new iteration of settler colonial violence. Frenchie and his fellow Indigenous Peoples are no longer obstacles to so-called settler-colonial 'progress,' but rather vessels containing consumable and extractable goods. "[T]he truth of our predicament," Frenchie reflects grimly as they head north, is that "we were a product" (92). Or, as his father chooses to put it, "they don't think of us as humans, just commodities" (203).

It is significant that Dimaline should take pains to register this shift inaugurated by the genomic age, not least because it is echoed in other contemporary North American Indigenous work. In his poem "The Farm," Spokane/Coeur d'Alene writer Sherman Alexie imagines that the bone marrow of Native Americans contains the cure for cancer, and his short story "The Sin Eaters" further riffs on the same theme.[15] Mi'gMaq director Jeff Barnaby's film *Blood Quantum* (2019) features Indigenous Peoples as the only ones to be safe from a plague of zombies attacking the rest of humanity. The figure of the Indigenous body as the locus of immunity to an array of maladies plaguing all other humans, it seems, is becoming an established trope. To my mind, the idea of the biomedically distinctive Indigenous Person as a preyed-upon asset has emerged in direct response to the controversy generated by population genetics projects such as the Human Genome Diversity Project (hereafter the Diversity Project) and, more recently, by the undertaking that emerged in its wake, the Genographic Project.[16]

Established in the early 1990s with the aim of sampling "genetically distinct" Indigenous Peoples around the globe in order to more accurately study humanity's genetic heritage and the history of our species, the Diversity Project proceeded to establish 'immortalized', self-reproducing cell lines, whose crucial benefit, its proponents argued, would be to preserve the DNA of these vanishing "Isolates of Historic Interest" for future study.[17] Rightly offended by this presumption of their impending extinction, the World Council of Indigenous Peoples was quick to portray the Diversity Project as the "Vampire Project", arguing that its drive to collect

genetic data about Indigenous communities would ultimately support a wide range of commercial developments, while bringing little benefit to Indigenous communities from who this information had been extracted. Although the HGDP eventually folded, the legacy of its decade-long existence exists in the form of one thousand cell lines derived from samples obtained from fifty-one different populations. Now housed in Paris's Centre pour l'Etude du Polymorphisme Humain, these cell lines are freely available for further research and have been used, as the Indigenous geneticist Krystal Tsosie (Navajo) points out, to develop a range of commercial platforms, including those providing direct-to-consumer genetic testing, such as AncestryDNA and 23andMe.[18]

Launched by the National Geographic in 2005, the Genographic Project sought carefully to distance and differentiate itself from the outcry generated by the Diversity Project. As a wide range of science and technology studies scholars have noted, however, the Genographic Project's main aims are scarcely distinguishable from that of its precursor.[19] The most important of these, for my purposes here, is the interest taken in Indigenous Peoples in order to obtain *genetic* evidence of human evolutionary and migratory history. Like the Diversity Project, the Genographic Project insists that data from Indigenous Peoples is extremely valuable because they are a rare example of isolated and unadmixed (read, genetically unmixed) populations who hold the key to salvaging what scant genetic diversity is still extant in the world. Given the pace at which the populations of the world are rapidly mixing, however, genetic diversity researchers worry that it is not long before the vital genetic diversity harboured in Indigenous Peoples will vanish. As Spencer Wells, the director of the Genographic Project, states, the pace of globalization makes his an extremely urgent task:

> In a shrinking world, mixing populations are scrambling genetic signals. The key to this puzzle is acquiring genetic samples from the world's remaining indigenous and traditional peoples whose ethnic and genetic identities are isolated.[20]

Human population diversity research effectively redefines Indigeneity in genetic terms. One of the more insidious problems this move causes is that some of the most common tests used to determine Indigeneity – namely, mitochondrial DNA and Y-chromosome DNA tests that "respectively examine less than one percent of [one's] entire genetic makeup" – are so narrow that most Indigenous Peoples, many of whom are indeed "admixed", simply will not possess it.[21] As Kim TallBear explains in her incisive critique of genetic articulations of Indigeneity, Indigenous Peoples who are admixed become, according to such definitions, insufficiently Indigenous. When only a person with three or four Indigenous grandparents qualifies as a suitable research subject for sampling, and Indigenous Peoples' different ways of establishing kinship are ignored, she notes, it is easy to claim that admixture is on the rise, and the next step, inevitably, is to claim that, genetically speaking, Indigenous Peoples are vanishing.[22] Her pithy summary perfectly expresses the chilling ironies latent in the justifications given to Indigenous communities by genetic diversity researchers: "[h]uman genome diversity research deploys the concept of indigenous peoples' perpetually impending death in order to support a genomic rearticulation of indigenous life as the rightful patrimony of global society".[23] Communities decimated by centuries of settler colonial violence must yet again confront the settler colonial myth of the vanishing Indigenous Person, in other words, only this time to be told that their DNA needs to be sampled and preserved because it could hold the key to understanding human evolutionary history.

It is no accident, then, that Dimaline chooses to figure the plight of her Indigenous protagonists, firstly, by deploying the language of genetics and, secondly, by placing this terminology within a dystopian framework in which the Indigenous Person is persecuted by those whose supposed aim is to ensure the survival of the human species at large. An early scene illustrates well the biomolecular register to which the novel often resorts: when Miigwans has made sure that his group of fellow fugitives is "listening with every *cell*" he describes to them the process of dream harvesting, explaining that "[d]reams get caught in the webs woven in your

bones. That's where they live, in the marrow there. […] You are born with them. Your *DNA* weaves them into the marrow like spinners" (18-19, emphasis mine). Nor can there be any doubt that the object of Dimaline's critique is also the way in which Indigenous exploitation is recoded as serving the so-called greater good: in a later scene where Minerva, the eldest member of Miigwans's crew, is captured by Recruiters, each one of them expounds the same argument: leaching away her dreams will serve the needs of the people in the nation, and even the entire world.

> "This is for the good of the nation. You'll see, granny," one Recruiter said.
> "You are doing a great service, ma'am," said another.
> "The world needs you. And of course, you want to do your part for such a great world," said a third. (150)

Population genetics projects produce Indigenous extinction through a series of discursive-material moves which reduce Indigenous Peoples to repositories of valuable resources for others, even as they predict, then inevitably confirm, the vanishment of Indigenous populations. Dimaline reworks this narrative using the scaffolding of speculative fiction: her novel recasts the threat of Indigenous extinction as the outcome of persecution and murder at the hands of those who have brought catastrophic climate change and the inability to dream upon themselves. If, as TallBear succinctly puts it, human genome diversity research "aim[s] to preserve Indigenous DNA, but [is] predicated on Indigenous death",[24] then *The Marrow Thieves* renders this insight as a settler colonial plan that requires the likes of Minerva to be killed in order for her dreams to be harvested for others' survival.

From diversity to distinctiveness

I have dwelt on initiatives such as the Diversity Project and the Genographic Project, because the plot that drives *The Marrow Thieves* seems to me to have been clearly inspired by these projects' search for so-called Indigenous genetic diversity and their efforts to claim Indigenous

DNA on account of its impending disappearance and its potentially immense biomedical value. I now want to suggest that exposing the colonially-inflected presumptions of human genome diversity projects is not the novel's chief concern. *The Marrow Thieves*, I suggest, is moved primarily by Dimaline's determination to overwrite the geneticisation of Indigeneity that underpins such population genetics projects. Her novel provides instead an account of Indigeneity on Indigenous Peoples' terms. Focussing on the ways that Indigenous Peoples choose to recognise their own, the novel sets out to define what constitutes Indigenous *distinctiveness*.

The term is important. Where the language of 'diversity' used by population genetics researchers is only ever attached to notions of diminishment and contraction – the mixing of human populations means that ever-fewer enclaves of unadmixed and genetically diverse populations now remain – 'distinctiveness,' as understood by Indigenous Peoples, speaks not to extinction but to *survivance.* "Indigenous distinctiveness," writes TallBear, "is a wellspring of cultural, political, and historical strength and the raison d'être of international indigenous movements and law and the expanding fields of Native American and indigenous studies".[25]

The hunt for genetic 'diversity,' in other words, places human genome diversity research on the same continuum as the narratives of blood quantum and equations of heredity with which Indigeneity has traditionally been defined by the federal state in both Canada and the United States.[26] Indeed, this is precisely the point that Daniel Heath Justice makes when he describes settler colonial endeavours for determining who falls within the purview of Indigeneity:

> Colonialist recognition […] is based on either static or retractive categories of essential *quantity*, most deeply rooted in 'blood' (or increasingly genetics). Such categories are nearly always perceived as being on some level threatened and ever-diminishing; in this view, one can never gain more Indigenousness – one can only *lose* it. […] The inevitable changes associated with human life – and which are themselves very often imposed on Native communities by colonialist

policies – are thus read as a fulfilment of this vanishing presumption; indeed, under this model, they can be read in no other way.[27]

Dimaline's account of Indigenous distinctiveness refuses such retractive calculations, actively countering notions of loss, vanishment and cultural stagnation with a narrative that links cultural and biological survival to the ability to adapt, to make kin expansively and to remember ancestors.

The task of articulating the complexities of Indigenous distinctiveness requires a series of narrative solutions that account for the novel's most remarkable feature: its insistence, throughout, on juxtaposing a series of seemingly incompatible ideas. Non-Indigenous readers like myself might initially find this perplexing. To read *The Marrow Thieves* is to find talk of blood, genes and heredity juxtaposed with less rigid ideas of kinship, and the "old-timey" juxtaposed with a tenderly wrought gay love story. In what follows, I tackle each of these tensions in turn in order to show that the novel calls upon Indigenous Peoples and non-Indigenous peoples alike to spurn ideas that contribute to the settler-colonial goal of Indigenous erasure and to affirm instead the difficult and messy balance upon which Indigenous distinctiveness is predicated (Heath Justice 2010b, 257).[28]

I Blood and Kin

It is revealing, if hardly surprising, that the first word that Frenchie learns to write in syllabics is "family" (214). In Indigenous communities whose ties to their homelands, their communities, their languages and their Spiritual Knowledges and Practices have been deliberately and repeatedly severed by settlers, kinship remains a crucial marker of one's belonging within and recognition by one's people. Among Indigenous communities, notes Heath Justice, "kinship is posited on one's behaviour – if you've been accepted as family *and* maintain your obligations as a family member, then you're recognised as being family".[29] Kinship is extended to include those to whom one is responsible, he writes, and operates as a category that encompasses many more people than just those to whom Indigenous Peoples are biologically related.[30]

This is the definition of kinship that Miigwans has in mind throughout the novel when he repeatedly introduces his motley group of fellow refugees – "not one of [whom is] related by blood" (20) and who range in age from about sixty to as young as seven – as "his *family*" (121, emphasis mine). The degree to which he has successfully instilled the importance of this notion of kinship in them all becomes clear when the crew eventually come across a large, well-organised group of fellow-resisters that includes Frenchie's father. Even after their moving reunion, Frenchie decides against sleeping in the same place as his father, opting instead to spend the night in a clearing with Miigwans and the others:

> "You staying out here?" Tree seemed surprised, but also a bit relieved.
>
> "Yeah, I'm still a part of this family, aren't I?"
>
> "Yeah," Zheegwon answered. "It's just that you have a real family now."
>
> "Real? What's that supposed to mean? You're not real?" I picked up a stone by my foot. "So this won't hurt, then?" I chucked it at him through the fire.
>
> "Oww, jeez." He rubbed his shin where it had bounced off. "All right, all right, we're real." We laughed. (177)

By foregrounding Miigwans's expansive notion of kinship, I want to suggest, Dimaline counters the fixed ideas of biological relatedness increasingly expressed in terms of "genetic inheritance, with its various logics of identity transmitted through ideas of race, blood, and now DNA".[31] Where the novel's dream-harvesting plot derides the population genetics science projects that peddle the notion of impending extinction while capitalising on Indigenous genetic material in the name of the so-called greater good, the relationships between the novel's protagonists – the members of Miigwans's family – are explicitly conceived to dispel any illusion that Indigenous belonging can be attained by claiming to possess so-called Indigenous DNA.

Dimaline's target here, I suggest, is the burgeoning industry of genetic ancestry testing, through which a range of primarily North American consumers – from genealogists to Ivy League applicants, casino-payout seekers to business grant award hopefuls – claim to possess

"Native American DNA".[32] Indigenous scholars have been quick to note that direct-to-consumer ancestry tests threaten Indigenous Peoples' forms of self-determination. These tests reify the broad ways that Indigenous Peoples have of making and recognising kin and reduce them to dubiously determined biomarkers.[33] If mitochondrial-DNA (mt-DNA) and Y-DNA tests are only able to offer results based on an infinitesimal proportion of one's ancestors, then autosomal DNA tests, which look at the Single Nucleotide Polymorphisms (SNPs) across all 23 pairs of chromosomes, are especially suspect in the ways that they determine so-called Indigenous ancestry. As Watt and Kowal explain, "[t]he public and private datasets detailing the expanses of autosomal alleles are also far less complete than those that include only Y-DNA or mt-DNA, meaning testing algorithms often associate specific SNPs with vague or inaccurate bio-geographical groups".[34] With such limited reference material against which to compare an individual's DNA, company claims to offer convincing proof of Indigenous ancestry are highly unreliable.[35] Furthermore, a DNA test that finds one to possess "Native American DNA" can tell one nothing about what community one might be from. "Instead," writes Kolopenuk, "the test can tell you if you fit into a homogenous grouping that genetic scientists have said exists, with no tribal specificity and no accountability to any specific people".[36]

Even as most Indigenous Peoples readily admit that DNA testing cannot be conflated with their own way of kin-making, in a molecular age which increasingly fetishises DNA as "the master molecule", the measurability of DNA lends it an authority from which even Indigenous Peoples are not exempt.[37] Genetics and technoscience should not trump the other types of knowledge through which Indigenous Peoples conceive of relation, of belonging to land, and of their connection to their ancestors, and yet, as Kolopenuk documents after witnessing as much, "genetic science has the potential to make people question the stories of our families and peoples in ways remarkably similar to what state legal categories have done".[38]

The qualitative notion of kinship that Dimaline showcases in *The Marrow Thieves*, then, is based on chosen, reciprocal connections and obligations in ways that explicitly rebuff claims to

kinship determined otherwise. It is for this reason, I argue, that one of Miigwans's most important lessons to his family is issued as a warning: "Not every Indian is an Indian" (55). We can interpret this as a caution, or even, given that they are shortly to be betrayed by two Indigenous men, as a premonition: some Indians are collaborators. Miigwans's words undoubtedly reinforce the notion that a good relative is one who recognises her obligation to counter the exploitative forces Indigenous Peoples face. But the novel's broader evocation of the language of genetics suggests that Miigwans's warning is designed, also, to refute the notion that so-called "Indigenous DNA" can ever stand in for the ways in which Indigenous Peoples themselves recognise their own.

Elsewhere, however, the novel throws up ideas of kinship that differ widely from the ties of mutual obligation and reciprocity that we witness for so much of it; Dimaline pointedly peppers her work with talk of bloodlines, genealogies and biological ties. Notions of biological inheritance leak into the novel when Frenchie toys with the notion that the trait of being a highly skilled hunter may have been transmitted to him by "blood memory" (10), for instance.[39] They recur in his careful accounting of the crew's "Native" status (16) as he either describes every member's tribal affiliation ("Cree", "Metis") or places them in a particular ancestral homeland ("the East Coast", "from the west") (20-21). Frenchie even lingers on phenotype, noting that Miigwans shares a trait with his father: "the same crease around his eyes" (15). Of course, the novel's most pointed allusion to the importance of genetically acquired traits is its central conceit: only Indigenous people dream, because to do so, the narrative implies, is in their "DNA." Miigwans's assertion that Indigenous Peoples are *born* with dreams woven into their bone marrow explicitly figures the ability to dream in the language of genetics and inherited traits.

This juxtaposition of biological and expansive kinship, which the novel retains throughout, is important, I argue, because through this tension, Dimaline is able to gesture to the complexities of Indigenous kin-making. Central to this process are both the notion of *imaginative*

kinship that Heath Justice discusses,[40] but also an understanding of relation derived from settler colonial, blood-fraction-based attempts to determine Indigenous status. By including talk of blood, genes and biological relation in her novel, I suggest, Dimaline seeks explicitly to intervene in a still lively debate among Indigenous communities: what is the role of blood quantum in Indian Country today?[41]

Developed in the late nineteenth century, blood quantum rules saw the settler colonial imposition of racist categorisations through which only individuals with a certain fraction of "Indian" blood would be legitimately recognised as such.[42] Blood quantum, then, allowed the settler state not only to dispossess Indigenous communities of their land; it also paved the way for the assimilation of Indians into the settler colonial state. Indigenous scholars note also, however, that these settler discourses of blood-quantum-based Indianness have now become important to Indigenous communities themselves: many tribes rely on blood fraction calculations in order to determine eligibility for tribal enrolment and recognition.[43] Yet this continued reliance on blood quantum is cause for considerable unease among Indigenous scholars, who unfailingly note that the equations of blood quantum can only ever culminate in the so-called "vanishing" of Indigenous communities.[44]

Dimaline's intervention in this debate is two-fold. As I will discuss in the next section of this article, she suggests that an overly rigid attachment to blood quantum rules will result in the perpetuation of settler colonial heteroreproductive logics that not only excludes queer Indigenous Peoples but also ultimately sabotages the Indigenous project of decolonisation. Dimaline's other contribution to the blood quantum debate, I argue, is to draw attention also to the way Indigenous communities have wrestled with settler colonial blood classifications and adapted them such that they no longer serve the purposes of exclusion that they were once designed for. Echoing scholars such as TallBear and Bonita Lawrence, Dimaline implies that it is a mistake to assume that Native communities use blood to make the same order of calculations that the settler colonial state does.[45] To take account of blood ties, Dimaline suggests, is to

practice a form of kinship based on knowing and being able to name the ancestral homelands of one's people, on remembering one's forebears and the forced migrations they were forced to endure. In this understanding of blood relations, ties of blood are important, but they are always "more-than-biological." [46] The settler may well see blood quantum as a means to bring about the eventual eradication of Indigeneity; the Indigenous Person, on the other hand, relies on blood links (if not always on blood quantum) in order to increase the odds of cultural affiliation, and hence, to ensure the cultural *survival* of Native distinctiveness.[47] At play in blood talk, TallBear explains, is "the counting of relatives and establishing a *genealogical connection* to them".[48]

When Frenchie talks of "blood memory", then, we should understand him to be referring to an order of ancestral memory and reckoning derived not from personal experience but from a distinctive "sense of inexplicable inheritance" through which he remembers his ancestors.[49] "Mom had said her uncles and grandpa were great hunters, that it was a family trait," he recalls immediately before hoping that this "blood memory" will serve him well as he heads north where game is hard to come by (10). By bringing previous generations of his family to mind he hopes to connect with their knowledges, to reclaim a relationship to the land on which they once hunted and from which he is now dispossessed. In a similar vein, his recounting of the group members' geographical provenance and tribal affiliations functions as a way of documenting the reservation and tribal histories of those who did survive, and serves as a source of much-needed hope and strength.

Miigwans, however, prefers to speak in the language of genetics, a move that reveals how the prevalence of gene talk in today's molecular age has made an impact on Indigenous Peoples' own discussions of kinship and distinctiveness. Gene talk is now ubiquitous across Indian Country, TallBear explains, noting that she now regularly encounters a range of tribal peoples who refer to certain characteristics as "being part of our DNA" or our "genetic memory" where, like Frenchie, they would erstwhile have used the language of blood.[50] She cautions, however, that although Indigenous Peoples may have adopted "gene language," their use of it is

emphatically not the same as "the use of that language in the mainstream," because Indigenous people's gene talk is consistently saturated with their own cultural understandings of blood and its importance to kin-making and survival.[51] "Like blood," she notes, in Indigenous circles, "DNA gets spoken of as a more-than-biological substance".[52] When Miigwans speaks of being born with the ability to dream because it is coded into Indigenous DNA, then, he is doing so in order to gesture to this trait as a testament to Indigenous survival: Indigenous Peoples have continued to retain and pass on the traits that contribute to their distinctiveness. Dimaline's deliberate use of gene talk, however, is designed also to register the fact that, in the age of genetic diversity research, this sign of survival and continuity is under threat from what others see as its exploitability: where Miigwans speaks of DNA to acknowledge his community's distinctiveness and resilience, the novel's non-Indigenous Peoples see in this same DNA only a way of salvaging a resource that will perpetuate their own kind.

It is important to understand that the language of blood and DNA used by Frenchie and Miigwans, respectively, is fundamentally incompatible with genomic articulations of Indigeneity. Dimaline draws on the register of blood and gene talk to underscore this point on multiple fronts. First, to have "blood memories" and to possess the DNA that allows their people to dream supersedes the obligation-free, superficial sense of belonging that a DNA test of dubious accuracy might produce. Second, where population genetics projects construe Indigenous Peoples' present as a fortuituous accident of history to be capitalised upon before their impending extinction, Miigwans and Frenchie speak of blood and DNA not as a sign of their community's gradual vanishing but rather as a testament to their ongoing presence and survival. And, finally, contrary to population genetics projects that can only conceive of Indigenous futurity in the form of cell lines and cryopreserved DNA, Frenchie and Miigwans draw on the memories, blood and genes of their ancestors in a vision of Indigenous futures where these meaningful ties, knowledges and connections will be preserved and passed on by surviving, and by actively committing to the practices of memory making, Storytelling and Story listening.

The act of preserving and passing on the things that bind Indigenous Peoples to their ancestors – stories, languages, knowledges – falls within the purview of what I will call, following Mark Rifkin and Daniel Heath Justice, "tradition".[53] Just as she insists that settler-colonially inflected ideas of blood and genetic relatedness obscure the more flexible and generative ways in which Indigenous Peoples make kin when they use those terms, Dimaline emphasises also that tradition – the all-important perpetuation of practices, knowledges and stories that underpin survivance and kin-making – can become overinvested in the idea of biologically reproductive sexualities as the only viable way to counter settler colonial discourses that affiliate Indigeneity with vanishment. It is to *The Marrow Thieves*'s specific negotiation of "tradition" that I now turn.

II Tradition

In *The Marrow Thieves,* Dimaline coyly evokes the notion of tradition with the expression "old-timey." "Us kids, we longed for the old-timey," Frenchie tells us. "We wore our hair in braids to show it. We made sweat lodges out of broken branches dug back into the earth, covered over with our shirts tied together at the buttonholes" (21-22). At its best, writes Rifkin, for Indigenous Peoples tradition serves as a powerful figure for "mark[ing] an enduring connection between a people's past and present, [for] emphasizing the maintenance of a coherent sense of collective identity amid ongoing campaigns of settler colonial violence, dispossession and erasure".[54] In the novel, two elders shoulder the responsibility of passing down "the old-timey" to maintain the group's sense of collective distinctiveness as they flee from the Recruiters: Minerva, a quiet old woman whom Frenchie approvingly describes as "real old-timey" (19), and the middle-aged Miigwans, who lives with the heavy burden of knowing that he was unable to save his husband Isaac from being captured by Recruiters.

Minerva teaches Frenchie and the others a little Anishinaabemowin; she tells them "old-timey stories," like that of the rogarou (66-68). Miigwans teaches them how to hunt, how to

make headway north without leaving traces. Most importantly, he imparts Story. "We needed to remember Story," Frenchie explains.

> It was [Miigwans's] job to set the memory in perpetuity. […] Sometimes we gathered for an hour so he could explain treaties, and others it was ten minutes to list the earthquakes in the sequence they occurred […]. But every week we spoke, because it was imperative that we know. He said it was the only way to make the kinds of changes that were necessary to *survive*. (25, emphasis mine)

Tradition, then, speaks to and ensures Indigenous *continuity*; it maintains ties to the "legacies of those who came before" and serves to honour "those who struggled by word, deed and vision to ensure that their peoples' distinctive worldviews, languages, kinship connections and lineages would endure".[55]

The novel allegorises the crucial nexus between tradition and survival in a scene involving the woman who embodies the "old-timey": Minerva. When she is captured and taken to a school to have her dreams leached, Minerva manages to cause a malfunction in the Recruiters' entire network of computers and medical equipment. The explosions that ensue reduce the entire facility to a pile of smoking debris. The scene clearly figures tradition as the source of survival, not only for Minerva but for those in her community who will no longer be tortured by the entirety of the dream-harvesting system that she brings down with her.:

> When the wires were fastened to her own neural connectors, and the probes reached into her heartbeat and instinct, that's when she opened her mouth. That's when she called on her blood memory, her teachings, her ancestors. That's when she brought the whole thing down. She sang. […] Wave after wave, changing her heartbeat to drum, morphing her singular voice to many, pulling every dream from her marrow and into her song. And there were words: words in the language that the conductor couldn't process, […] words the wires couldn't transfer. As it turned out, every dream Minerva had ever dreamed was in

> the language. It was her gift, her secret, her plan. […] The wires sparked, the probes malfunctioned. […] The system failed, failed all the way through the complication of mechanics and computers, burning each one down like the pop and sizzle of a string of Christmas lights, shuddered to ruin one by one. (172-73)

Having exposed us to the complex ties of imaginative kinship and biological relatedness, and to the practices of active remembrance and continuous Storytelling to which Indigenous Peoples attribute their own distinctiveness and survival, Dimaline now condenses this lesson into a powerful passage that succinctly alludes to the full complexity of Indigenous self-understanding. Notably, when Minerva draws on the "old-timey" resources she has to hand – the (blood) memory of her ancestors, the link to her forebears through their songs and teachings, and her deep connection to the Anishinaabe language – she taps into a source of power that produces decidedly biological effects: her heartbeat "changes", her voice "morphs." The probes of the neural connectors she is attached to seem, in spite of themselves, to measure not just the physiological ("her heartbeat"); they also hit upon her "instinct," a deliberate reminder, I would argue, of the impossibility of reducing the Indigenous Person to a series of biological properties and functions. Part allegory, part warning, the scene underscores that Indigenous Peoples cannot be reduced to their genetic properties in the way that population genetics projects profess. Rather, Indigenous distinctiveness, this scene makes clear, lies in the Indigenous Person's ability to draw on her blood ties, her relations *and* the more-than-biological elements of memory, Story and language that these ties of blood anchor her to, in order to perpetuate her actual biological survival.[56]

What Dimaline has in store for Minerva, however, is something her readers have decidedly not been primed for. The Recruiters, unnerved by the havoc Minerva wreaks on their equipment, arrange for her to be flown to the Capital, possibly for further experiments to be performed on her. By now, however, Frenchie and his group have encountered a much larger and well organised group of fellow-Indigenous resistors, and together they hatch a rescue plan:

they will ambush the vehicle transporting Minerva to the airstrip. And they almost pull it off. But in an unexpected plot twist, Minerva is shot and killed by a Recruiter they had thought dead.

To kill off Minerva is to excise from the text the embodiment of the "old-timey", to do away with the character who has just demonstrated that the key to defeating the marrow thieves is to confront them with all the elements – biological and more-than-biological alike – that are so crucial for the preservation and transmission of Indigenous distinctiveness. Dimaline makes this drastic move, I argue, to suggest that it is time to make space, also, for alternative ways of conceptualising tradition and the "old timey". In the final pages of her novel, Dimaline provides just what Heath Justice calls for when he asks his fellow Indigenous Peoples to revisit tradition and define it differently. "This alternative (quite explicitly, *alter-Native*) understanding, drawn from our various intellectual and social histories" he writes, "is one that values adaptation, not stasis or assimilation".[57]

As Heath Justice, Rifkin and others have lamented, the otherwise empowering notion of tradition can become particularly damaging for queer Indigenous Peoples. As a notion that ensures Indigenous continuance and survival, tradition all too often "become[s] invested with a reproductive sensibility",[58] in which countering the assimilationist logic of settler-colonialism becomes simplistically coded as "a duty to make more Indians".[59] Recent decisions by some tribes to outlaw same-sex marriage in the name of "tradition" demonstrate how easily the issue of Indigenous continuance can become aligned with heteronormative regimes that regard homosexuality as an aberration.[60]

While it is understandable that Indigenous communities have imbued reproduction with the potential to counter the myth of the vanishing Indian, the irony of such heteroreproductive notions is that they "reinvest in the very couple-centred lineage logics of generational inheritance that historically have been employed by settler governments to fracture, manage and/or erase Native identity".[61] Rifkin and Heath Justice therefore both suggest that to reorient 'tradition' to recognise non-reproductive sexualities is inherently also an important gesture of decolonisation.[62]

Or, as TallBear writes: "[r]ecognizing possibilities of other kinds of intimacies – not focused on biological reproduction and making population, but caretaking precious kin that come to us in diverse ways – is an important step in unsettling settler sex and family".[63]

When Minerva is killed in *The Marrow Thieves*, Frenchie, Miigwans and the others are understandably devastated. They fear they have lost their one chance to defeat the Recruiters. In the novel's final pages, however, a fresh possibility for Indigenous survival emerges. Frenchie and some others come across a small group of strangers, two women and two men, one of whom speaks an impressively fluent Cree.[64] Frenchie quickly establishes that the man, like Minerva before him, dreams in an Indigenous language: Cree.[65] With mounting excitement, the group is taken back to the main camp. On the walk there, Frenchie talks to the Cree-speaking man and learns that he is a "half-breed" who escaped from the Recruiters only because they first took him to a hospital to establish his "eligibility" for harvesting, "to make sure my blood wasn't too mixed," as he puts it (229). At this point, Frenchie glimpses a tattoo of a buffalo on the back of the man's hand, and instantly recognises him as Isaac, Miigwans's husband, the bilingual Cree-English poet whom Miigwans has given up for dead, and whose remains he wears in a little bottle round his neck. "That bundle I carried in my chest," Frenchie tells us, "the one that inflated when I heard about our triumphs, the one that ached with our losses […]: from there came the push, and I set off running" (229). The reunion that ensues – and the image with which the novel closes – is, non-coincidentally, far more moving than the scene that reunites Frenchie with his biological father:

> Miig opened his mouth. The movement unhinged his legs and he fell to his knees, knocking down the grass like so much chaff. He held his hands out, palms turning upwards in a slow ballet of bone, marrow intact after all this time, under the crowded sky, against the broken ground.
>
> 'Isaac?'

> I heard it in his voice as Miigwans began to weep. I watched it in the steps that pulled Isaac, the man who dreamed in Cree, home to his love. The love who'd carried him against the rib and hurt of his chest as ceremony in a glass vial. (231)

Taken together, the decision that Minerva's rightful heir should be a "half-breed" gay man and the gesture of concluding the novel on a figure of hope embodied not, as is so often the case, by a child, but by the embrace of two gay men reunited, speak volumes about Dimaline's intentions. She wants us to reimagine the question of Indigenous continuity.

It is important to note, however, that Dimaline does not bask in the luxury of a queer critique that can afford to reject the figure of the Child and the future it embodies. Where critics such as Lee Edelman embrace the rhetoric of "no future" in order to explicitly reject a reproductive futurism that will only reproduce the standing social order,[66] Dimaline recognises that Indigenous Peoples cannot risk entertaining the idea of 'no future' when settler colonialism and population genetics projects continue to write them out of the future. Dimaline's reimagined understanding of Indigenous tradition anchors it to a future that admits both queerness and the Child: by the time the novel ends Miigwans's original crew has yielded two heterosexual couples, Frenchie and Rose, and Chi-Boy and Wab, with Wab expecting a baby. Lest we have any doubt as to Dimaline's vision, it is in the mouth of Miigwans, the gay elder, that she places the following words: "babies are the most important thing we have to move ahead" (182). Such a statement marks a clear refusal to choose between his community's continuation as a people and his own individual self-determination; indeed, it refuses to see queerness and an Indigenous slant on reproductive futurism as incompatible.

The Complexity of Distinctiveness

"Complexity," observes Heath Justice, "is the enemy of the colonial enterprise; as such, it's an absolutely necessary attribute of any viable mode of decolonization".[67] In its relationship to Indigeneity, genetics betrays its colonial inflections not only because it dooms Indigenous

Peoples to extinction, but also because it is mobilised in such reductive ways. So-called Native American DNA reduces these Indigenous communities to a set of dubiously defined markers and haplogroups. In *The Marrow Thieves*, the pull and promise of genetics and DNA – the dreams sought by the department of Oneirology – are rendered as a hunt, as a persecution that Indigenous Peoples must resist. Instead, the novel wrests Indigeneity away from genetics and roots Indigenous distinctiveness in the practices that have enabled survivance. As Miigwans and Minerva teach Frenchie, to be a good relative is to remember one's ancestors even as one makes new kin; it is to recall and leave behind a legacy that is both biological *and* more than just biological. "The simple fact of DNA relation isn't actually kinship," writes Heath Justice, before adding what I read as a telling caveat, "or at least not entirely".[68] It is in this messy, complicated area between the "not" and the "not entirely," I argue, that Dimaline's counter-genetic novel dwells.

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[1] Kim TallBear, *Native American DNA: Tribal Belonging and the False Promise of Genomic Science* (Minneapolis: University of Minnesota Press, 2013), 136.
[2] Luca Cavalli-Sforza, Paolo Menozzi and Alberto Piazza*, The History and Geography of Human Genes* (Princeton: Princeton University Press, 1994), ix.
[3] In this article, I follow the citational practices recommended in Gregory Younging's Elements of Indigenous Style: A Guide for Writing By and About Indigenous Peoples (Edmonton, Canada: Brush Education, 2018). I therefore capitalise the terms 'Indigenous' and 'Indigenous Peoples' throughout. When citing scholars who choose not to capitalise the term, however, I have refrained from making amendments. I am grateful to one of my peer reviewers, who pointed me to this valuable resource.
[4] Kim TallBear examines the flawed and misleading marketing claims of genetic-ancestry testing companies in Chapters Two and Three of *Native American DNA*. Darryl Leroux's work has shown that such tests can help settler communities legitimate their claims on territories by claiming true Indigeneity. See, for example, his "'We've been here for 2000 years': White Settlers, Native American DNA and the Phenomenon of Indigenization," *Social Studies of Science* 48, no. 1 (2018): 80-100. Elizabeth Watt and Emma Kowal discuss the case of groups who collaborate with scientists in the hope of finding such 'Indigenous DNA'. See Watt and Kowal, "What's at Stake? Determining Indigeneity in the Era of DIY

DNA," *New Genetics and Society* 38, no. 2: 142-64. The most well-known controversy surrounding the idea of Native American DNA, of course, involves Senator Elizabeth Warren's claim to Cherokee ancestry. For a comprehensive Indigenous bibliography on the Elizabeth Warren case see Adrienne Keene, Rebecca Nagle, and Joseph M. Pierce, "Syllabus: Elizabeth Warren, Cherokee Citizenship and DNA Testing," *Critical Ethnic Studies* blog, December 19, 2018, http://www.criticalethnicstudiesjournal.org/blog/2018/12/19/syllabus-elizabeth-warren-cherokee-citizenship-and-dna-testing.

[5] I am quoting Spencer Wells, director of the Genographic Project here. See "The Genographic Project," *National Geographic*, May 11, 2012, https://web.archive.org/web/20120511131701/https://genographic.nationalgeographic.com/genographic/lan/en/about.html.

The major initiatives involving Indigenous Peoples and population genetics are The Human Genome Diversity Project and its successor, the Genographic Project. For an exhaustive account of The Human Genome Diversity Project, see Jenny Reardon, *Race to the Finish: Identity and Governance in the Age of Genomics* (Princeton: Princeton University Press, 2005). On the Genographic Project, see Chapter Four of TallBear's *Native American DNA*. For an account of the relationship between both enterprises, see Marianne Sommer's *History Within: The Science, Culture, and Politics of Bones, Organisms and Molecules* (Chicago: University of Chicago Press, 2016), especially Chapters Thirteen and Fourteen.

[6] A common misconception surrounds the term Métis: they are erroneously thought of by most people, not least in Canada, as a community of mixed ancestry – part white, part Indigenous – rather than as an Indigenous People. As the Métis Nation Council explains on its website, the Métis are in fact "a distinct Indigenous people and nation recognized in the Constitution Act 1982 as one of the three Aboriginal peoples in Canada. They emerged in the historic Northwest during the late 18th century, originally the mixed offspring of Indian women and European fur traders. As this population established distinct communities separate from those of Indians and Europeans and married among themselves, a new Indigenous people emerged – the Métis people – with their own unique culture, traditions, language (Michif), and way of life, collective consciousness and nationhood." (See https://www2.metisnation.ca/about/faq/).

[7] Coined by the Indigenous writer Gerald Vizenor (Anishinaabe), the term 'survivance' underscores that Indigenous survival is attributable to active practices of resistance to settler colonial domination , and not, as is widely believed, to historical fortuity. Insisting that Native "survivance stories are renunciations of dominance, […] the unbearable sentiments of tragedy and the legacy of victimry," Vizenor wants the term to allude to "an active sense of presence over absence, deracination and oblivion". Vizenor, "Aesthetics of Survivance," in *Survivance: Narratives of Native Presence*, ed. Gerald Vizenor (Lincoln: University of Nebraska Press, 2008), 1.

[8] On the origins of the term "Two-Spirit" to refer to queer Indigenous people, see Daniel Heath Justice, *Why Indigenous Literatures Matter* (Waterloo, Ontario: Wilfrid Laurier University Press, 2018), 102.

[9] Bethany Schneider advocates for a queer reading of survivance in her contribution to the introduction to *GLQ*'s special issue: Sexuality, Nationality, and Indigeneity. Daniel Heath Justice, Mark Rifkin, and Bethany Schneider, "Introduction," *GLQ* 16, nos. 1-2 (April 2010): 5-39 (p. 20).

[10] The novel won the 2017 Governor General's Award for English-language children's literature, the 2017 Kirkus Prize (YA category), the 2018 Burt Award for First Nations, Métis and Inuit Literature, and the 2018 Sunburst Award for young adult fiction.

[11] Cherie Dimaline, *The Marrow Thieves* (Toronto: Cormorant Books, 2017), 21. Further page references are given after quotations. When used in the novel, the term Métis is written without an accent: Metis. When quoting from the novel, I will refrain from making amendments. When referring to the Métis People in my own prose, however, I will use an accent, following the practice of the Métis Nation Council.

[12] See "What We Have Learned: Principles of Truth and Reconciliation" report, at https://nctr.ca/assets/reports/Final%20Reports/Principles_English_Web.pdf

The TRC also issued 94 Calls to Action in order to redress the legacy of residential schools. Most relevant to the readership of this journal are the items 18 to 24, listed under the heading "Health." Item 19, for instance, notes the substantial gaps between Aboriginal and non-Aboriginal communities in indicators such as "infant mortality, maternal health, suicide, mental health, addictions, life expectancy, birth rates, infant and child health issues, chronic diseases, illness and injury incidence, and the availability of appropriate health services." See https://nctr.ca/assets/reports/Calls_to_Action_English2.pdf

The same year – 2015 – also saw the publication of a report by the Wellesley Insitute, a Toronto-based charity dedicated to improving urban health, entitled First Peoples, Second Class Treatment – The Role of Racism in the Health and Well-Being of Indigenous Peoples in Canada. The report explicitly roots the health disparities between Indigenous and non-Indigenous Peoples in past and present colonial policies and pervasive racism within the health care system. See https://www.wellesleyinstitute.com/wp-content/uploads/2015/02/Summary-First-Peoples-Second-Class-Treatment-Final.pdf

[13] For an overview of the health and social disparities in Canada's Indigenous communities, including the shockingly high incidence of suicide among Indigenous youth, see Naomi Adelson, "The Embodiment of Inequity: Health Disparities in Aboriginal Canada," *Canadian Journal of Public Health* 96, no. 2 (March/April 2005): 45-61.

[14] See David B. MacDonald, *The Sleeping Giant Awakens: Genocide, Indian Residential Schools and the Challenge of Conciliation* (Toronto: University of Toronto Press, 2019), J. R. Miller, *Residential Schools and Reconciliation: Canada Confronts its History* (Toronto: University of Toronto Press, 2017); and Ronald Niezen, *Truth and Indignation: Canada's Truth and Reconciliation Commission on Indian Residential Schools* (Toronto: University of Toronto Press, 2014). 2019 also saw an important breakthrough: the Canadian Museum of Human Rights acknowledged that Canada's treatment of Indigenous Peoples should be defined as genocide. See https://www.aptnnews.ca/national-news/national-museum-changes-stance-on-genocide-sides-with-inquiry-findings/

[15] "The Farm" (1997) is anthologised in *Skins*: *Contemporary Indigenous Writing*, eds. Kateri Akiwenzie-Damm and Josie Douglas (Neyaashiinigmiing, Ontario: Kegedonce Press, 2002), 47-56. "The Sin Eaters" is one of the stories in Alexie's collection *The Toughest Indian in the World* (New York: Grove Press, 2000).

[16] It is important to note here that the extraction of Indigenous bioresources that Dimaline and Alexie thematise in their work is an extension of centuries of appropriation of Indigenous resources and knowledges. As numerous scholars have pointed out, Indigenous Peoples' medicinal knowledge about plants, their agricultural knowledge about seeds and crops, and, more recently, their genetic material, have been commodified and appropriated thanks to the collusion of technoscience and intellectual property law. Debra Harry (Northern Paiute) and Laurelyn Whitt have termed this process "biocolonialism." See Laurelyn Whitt, *Science, Colonialism and Indigenous Peoples* (Cambridge: Cambridge University Press, 2009) and Debra Harry, "Biocolonialism and Indigenous Knowledge in United Nations Discourse," *Griffith Law Review* 20, no.3 (2011): 702-728. Harry is also the executive director of the Indigenous Peoples Council on Biocolonialism, a non-profit organisation to help Indigenous Peoples protect their genetic resources and traditional knowledges. See http://www.ipcb.org/

[17] Cited in Sandra Awang, "Indigenous Nations and the Human Genome Diversity Project," in *Indigenous Knowledges in Global Contexts: Multiple Readings of our World*, eds. George J. Sefa Dei, Budd L. Hall and Dorothy Goldin Rosenberg (Toronto: University of Toronto Press, 2000, 120-36 (p.123). Early publications and internal documents of the Diversity Project that use this terminology include Luca Cavalli-Sforza, Allan Wilson, Charles Cantor, Robert Cook-Deegan and Mary-Claire King, "Call for a Worldwide Survey of Human Genetic Diversity – A Vanishing Opportunity for the Human Genome Project," *Genomics* 11.2 (1991): 490-91; and the proceedings of the first *Human Genome Diversity Workshop* 1 and 2, cited in Reardon's *Race to the Finish*.

[18] See "An Indigenous Bioethicist on CRISPR and Decolonizing DNA" for the interview with Krystal Tsosie in which she makes this point: https://www.pbs.org/wgbh/nova/article/bioethics-crispr-indigenous-genome/

For an account of further controversies generated by other genetics research projects involving Indigenous Peoples see Joanna Radin, *Life on Ice: A History of New Uses for Cold Blood* (Chicago: Chicago University Press, 2017).

[19] See TallBear, *Native American DNA*; Sommer, *History Within*; and Jenny Reardon and Kim TallBear, "'Your DNA is *Our* History': Genomics, Anthropology and the Construction of Whiteness as Property," *Current Anthropology* 53, no. S5 (2012): 233-45.

[20] Spencer Wells, "The Genographic Project," *National Geographic*, May 11, 2012, https://web.archive.org/web/20120511131701/https://genographic.nationalgeographic.com/genographic/lan/en/about.html.

[21] Jessica Kolopenuk, "NDN DNA," in *The Great Vanishing Act: Blood Quantum and the Future of Native Nations*, eds. Norbert S Hill Jr and Kathleen Rattertree (Golden, CO: Fulcrum Publishing, 2017), 159-73 (p. 166).

[22] TallBear, *Native American DNA*, 151.

[23] Kim TallBear, "Beyond the Life/Not-Life Binary," in *Cryopolitics: Frozen Life in a Melting World*, eds. Joanna Radin and Emma Kowal (Cambridge, MA: MIT University Press, 2017), 179-203 (p. 182).
[24] TallBear, "Beyond the Life/Not-Life. Binary," 182.
[25] TallBear, *Native American DNA*, 150. Nor does distinctiveness refer to a notion of "ethnic difference" that might easily be folded into the narrative of multiculturalism. Here is Daniel Heath Justice: "Indigenousness is *not* ethnic difference; it is both cultural and political distinctiveness, defined by land-based genealogical connections and obligations to human and nonhuman bonds of kinship". Daniel Heath Justice, "Rhetorics of Recognition," *The Kenyon Review* 32, no. 1 (Winter 2010): 236-61 (p. 250).
[26] Or, as the Canadian scholar Jessica Kolopenuk (Cree) explains, "whereas I am classified as an Indian according to Canadian state racial logics, my DNA has been classified according to population geneticists and their logics as being "Native American". Kolopenuk, "NDN DNA," 171. Her own people, however, determine their Cree belonging through their relationships to the people and places from whom and whence they come.
[27] Heath Justice, "Rhetorics of Recognition," 245-46.
[28] Heath Justice, "Rhetorics of Recognition," 257.
[29] Heath Justice, "Rhetorics of Recognition," 245.
[30] Heath Justice, *Why Indigenous Literatures Matter*, 75. Heath Justice likens his definitions to those given by Donna Haraway in *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016).
[31] Heath Justice, *Why Indigenous Literatures Matter*, 74.
[32] Ancestry tests are especially popular in the US. TallBear cites enrolment staff from multiple tribes who note the growth in enrolment applications accompanied by results from straight-to-consumer genetic-ancestry tests. *Native American DNA*, 65.
[33] See especially Kolopenuk, "NDN DNA"; Leroux, "'We've been here for 2000 years'"; TallBear, *Native American DNA*; and Watt and Kowal, "What's at Stake?".
[34] Watt and Kowal, "What's at Stake?", 146.
[35] As Krystal Tsosie and Matthew Anderson write, the shortcomings of autosomal testing are blatantly shored up in the Elizabeth Warren controversy. Dr. Carlos Bustamente, the population geneticist who concluded that Elizabeth Warren "has a Native American ancestor," they write, used Indigenous individuals from Central and South America as a reference group to which to compare Warren's DNA. The misplaced claim that Warren has "Native American DNA," then is not only deliberately misleading; it is also a flagrant disregard for the specific histories of all Indigenous Peoples and their respective ways of making kin. See Krystal Tsosie and Matthew Anderson, "Two Native American Geneticists interpret Elizabeth Warren's DNA Test," *The Conversation* (October 22, 2018), https://theconversation.com/two-native-american-geneticists-interpret-elizabeth-warrens-dna-test-105274.
[36] Kolopenuk, "NDN DNA," 181.
[37] Initiatives such as the Summer internship for Indigenous Peoples in Genomics (SING) are explicitly designed to train Indigenous scholars in genomics and thereby dispel the myths that continue to surround DNA. Such programs also serve to counter the underrepresentation of Indigenous Peoples in careers in genomics. SING aims to create a community of Indigenous scientists who can help represent the concerns and values of Indigenous Peoples to the wider scientific community and work with leaders of Indigenous communities to explain the uses and limitations of any scientific research projects they may be thinking of participating in. See https://www.singconsortium.org
For an overview of resources being developed in Canada, New Zealand, Australia and the United States to help Indigenous Peoples make informed decisions about genetic research, as well as a discussion of areas that still need attention, see Nanibaa' A. Garrison et al, "Genomic Research through an Indigenous Lens: Understanding the Expectations," *Annual Review of Genomics and Human Genetics* 20, no.1 (2019): 495-517.
[38] Kolopenuk, "NDN DNA," 182.
[39] The notion of "blood memory" has been a topic much debated in North American Indigenous literatures since the Pulitzer Prize winning writer N. Scott Momaday (Kiowa and Cherokee) featured it as a central term in his novel *House Made of Dawn* (1968). Momaday, credited for being at the forefront of the post-1960s flowering of Native American letters, has used the notion of "blood memory" or "memory in the blood" in most of his major works. As Chadwick Allen notes, this "provocative juxtaposition" of blood and memory is not an essentialist claim rooting ancestral memories in the Indigenous Person's

blood. Rather, it is a gesture of activism designed to counter settler-colonial attempts to classify Indigenous Peoples according to blood quantum. "Momaday's 'blood memory,'" Allen writes, "asserts the power of Native Oral traditions to instill vital and distinctive cultural knowledge into contemporary individuals, whatever their official status." See Chadwick Allen, "N. Scott Momaday: becoming the bear" in *The Cambridge Companion to Native American Literature*, eds Joy Porter and Kenneth M. Roemer (Cambridge: University of Cambridge Press, 2005), 207-221 (p.212-3). As I go on to discuss, Frenchie's allusion to blood memory in *The Marrow Thieves* serves a similar purpose to the one Allen attributes to Momaday's use: it allows Frenchie to establish a connection to his ancestors, their land and their teachings.

[40] Heath Justice, *Why Indigenous Literatures Matter*, 77.

[41] The issue of blood quantum is an especially fraught one for the Métis People, who, as I explain in note 6, have historically been mischaracterised as "mixed" in a move that has been central to Canada's settler-colonial regulation of how Indigenous Peoples are classified. For a Métis writer like Dimaline, then, the project of showing that Indigeneity is about much more than blood quantum holds a special importance. As Chris Andersen (Métis) notes, to suggest that the Métis are defined by their mixedness allows them to be characterised as somehow less Indigenous, which in turn is to perpetuate the settler colonial view that Indigeneity is rooted in blood, genes and biology and therefore subject to 'dilution'. See Chris Andersen, *"Métis": Race, Recognition, and the Struggle for Indigenous Peoplehood* (Vancouver: University of British Columbia Press, 2014). Of course, this is precisely the settler-colonial view that Dimaline exposes and undermines in her novel.

[42] Canada's 1876 Indian Act defined Indians as "[a]ny male person of Indian blood… any child of such person… [or] any woman who is or was lawfully married to such person" (cited in Kolopenuk, "NDN DNA," 172). In the United States, the 1887 Dawes Act was created to redistribute land and confer US citizenship onto certain individuals. Those Native Americans deemed half-blood or less were given US citizenship and full title; those considered more than half blood, as TallBear explains, "had title held for them in trust for twenty-five years". *Native American DNA*, 56. In her illuminating comparison of the conferral of "Indian" status in the settler colonial regimes of Canada and the United States, Bonita Lawrence explains that Canada's Indian Act, which stripped all Indian women and their descendants of Indian status if they married a man without Indian status, imposed a patriarchal system of status recognition that also successfully regulated blood quantum: only those with at least a quarter Indian blood were eligible to be recognised as Indian. In the US, she notes, blood quantum was much more openly regulated by a fractional system that fragmented individuals into 128 or even 256 parts, to calculate which parts were Indian. "It is a moot point," Lawrence adds wryly, "as to which is more destructive to Native communities". Bonita Lawrence, "Gender, Race, and the Regulation of Native Identity in Canada and the United States: An Overview," *Hypatia* 18, no. 2 (Spring 2003): 3-31 (p. 20). Lawrence notes also that since the Canadian Indian Act was amended with the passing of Bill C-31 in 1985, many Canadian First Nations have now adopted new membership codes based explicitly on blood quantum rather than Indian status.

[43] "By the twentieth century," writes Doug Kiehl, "blood quantum had become not only the predominant measure of Indianness [for the settler state] […], but also the prime criterion for citizenship in a particular Indigenous nation". Doug Kiehl, "Bleeding Out: Histories and Legacies of 'Indian Blood'," in *The Great Vanishing Act: Blood Quantum and the Future of Native Nations*, eds. Norbert S Hill Jr and Kathleen Rattertree (Golden, CO: Fulcrum Publishing, 2017), 80-98 (p. 88).

[44] Outmarriage is increasingly common among Indigenous Peoples. Indeed, this is precisely what leads population geneticists to mourn the lack of remaining Indigenous genetic material. Blood quantum requirements mean that fewer children of outmarried tribal members can claim membership themselves, as they fail to meet blood requirements. Katherine Ratteree and Norbert Hill's excellent co-edited volume *The Great Vanishing Act: Blood Quantum and the Future of Native Nations* (Golden, CO: Fulcrum Publishing, 2017) is entirely dedicated to the problem of blood quantum and the declining eligibility rates of many people born of mixed unions to be enrolled in an Indigenous tribe.

[45] Both TallBear and Lawrence argue that it is important not to dismiss the importance of blood quantum to Indigenous Peoples' own self-determination as a simple matter of "self-colonization" or "brainwashing." TallBear, *Native American DNA*, 56; Lawrence, "Gender, Race and the Regulation of Native Identity," 21.

[46] Citing the work of anthropologist Beatrice Medicine and Native American studies scholar Elizabeth Cook-Lynn, TallBear explains that an Indigenous person's belonging to her tribe is rooted in a

relationship that is "blood-infused but more-than-biological" (TallBear, *Native American DNA*, 59). As she further explains, blood holds deep and important *symbolic* meaning in Indigenous thought, and a tribe's blood rules are a way of ensuring that members will count and remember their ancestors and the complicated story of their lineages (64).
[47] TallBear, *Native American DNA*, 61-62.
[48] TallBear, *Native American DNA*, 64 (emphasis added).
[49] TallBear, *Native American DNA*, 8.
[50] TallBear, *Native American DNA*, 8.
[51] TallBear, *Native American DNA*, 178.
[52] TallBear, *Native American DNA*, 8.
[53] Mark Rifkin, "Queering Indigenous Pasts, or Temporalities of Tradition," in *The Oxford Handbook of Indigenous American Literature*, eds. James H. Cox and Daniel Heath Justice (Oxford: Oxford University Press, 2014), 137-51; Heath Justice, "Notes Towards a Theory of Anomaly," *GLQ* 16, nos. 1-2 (April 2010): 207-42.
[54] Rifkin, "Queering Indigenous Pasts," 137.
[55] Heath Justice, "Notes Towards a Theory of Anomaly," 214.
[56] I would like to thank Clare Barker for urging me to fully articulate the links between the biological and the "more-than-biological" evinced in this scene.
[57] Heath Justice, "Notes Towards a Theory of Anomaly," 214.
[58] Rifkin, "Queering Indigenous Pasts," 137.
[59] Adrienne Keene, "Love in the Time of Blood Quantum," in *The Great Vanishing Act: Blood Quantum and the Future of Native Nations*, eds. Norbert S Hill Jr and Kathleen Rattertree (Golden, CO: Fulcrum Publishing, 2017), 3-14 (p. 12).
[60] Heath Justice discusses the Cherokee Nation's decision to ban same-sex marriage in "Notes Towards a Theory of Anomaly".
[61] Rifkin, "Queering Indigenous Pasts," 138.
[62] See Rifkin, "Queering Indigenous Pasts,"; and Heath Justice, "Notes Towards a Theory of Anomaly".
[63] Kim TallBear, "Making Love and Relations Beyond Settler Sex and Family," in *Making Kin Not Population*, eds. Adele E. Clarke and Donna Haraway (Chicago: Prickly Paradigm Press, 2018), 145-67 (p. 154).
[64] The two women are black and Frenchie identifies them as Guyanese. I lack the space to discuss the important gesture of allegiance to black communities that Dimaline appears to make here. For more on the productive convergences and discrepancies in black and Indigenous discourses see Tiffany Lethabo King, *The Black Shoals: Offshore Formations of Black and Native Studies* (London/Durham: Duke University Press, 2019).
[65] The Canadian Encyclopedia entry under "Indigenous languages in Canada" notes that central and eastern Canada are dominated by languages in the Algonquian family, especially Cree and Anishinaabemowin. See: https://www.thecanadianencyclopedia.ca/en/article/aboriginal-people-languages
[66] Lee Edelman, *No Future: Queer Theory and the Death Drive* (London/Durham: Duke University Press, 2004).
[67] Heath Justice, "Notes Towards a Theory of Anomaly," 232.
[68] Heath Justice, *Why Indigenous Literatures Matter*, 86.