INHERITANCE AT THE LIMITS

1. INTRODUCTION: GRASPING INHERITANCE

Inheritance is a powerful and capacious concept. At root, it concerns what can be passed on, the mechanisms through which this passage occurs, and how choice, novelty, and responsibility enter these equations. This paper explores the stakes of inheritance as a principal concept for the current moment, encompassing and extending biosocial notions of heredity. Drawing on the centrality of inheritance to Marx's notion of history, Ahmed (2007: 154) writes "If the conditions in which we live are inherited from the past, they are 'passed down' not only in blood or in genes, but also through the work or labour of generations." In the 21st century, discourses of inheritance as they cohere in our bodies, cultures, and institutions, are increasingly fraught. In many senses, we know more about the 'facts' of inheritance than ever before, through genetic technologies, historical reconstructive practices, and digital archives, to name a few mechanisms through which past lineages are presenced today. Yet this knowledge has opened more questions than it has answered. Social justice movements push many institutions to grapple with their problematic inheritances: wealth and power accumulated through violent material and epistemic dispossession. Environmental crises also produce profound uneasiness around questions of inheritance. From 'forever chemicals' to the inherited 'debt' of carbon emissions, ethical questions about the world that will be inherited by future generations abound.

Inheritance is not just something with which to grapple in the pursuit of justice or more liveable worlds. It also undoubtedly plays a key role in contemporary norms and governance. It underpins what Povinelli (2006) has identified as the division between the autological subject and

genealogical society that characterises late liberalism. In contrast to the autological subject, which embodies "discourses, practices, and fantasies about self-making, self-sovereignty, and the value of individual freedom," the genealogical society constrains the subject by "various kinds of inheritances," thus shoring up the normative nature of late liberalism (Povinelli, 2006: 4). In this account, norms are enforced by the tension between the subject (referenced, of course, to the white heterosexual man) as responsible for his own destiny, and a society bound by a set of inheritances (traditions, social structures, institutions, etc). This argument makes it evident that inheritance is both at the heart of contemporary politics and that it is malleable and multifaceted. How to grasp this potent complexity, and moreover how to understand inheritance as at once a disciplinary construct, an ethical question, and a force beyond human agency motivates the arguments that follow.

Notions of inheritance are usually thought along specific lines of biology, legal practice, economics, or politics. This is evident in associations with various terms concerning inheritance: 'heredity' is commonly associated with the biological, 'inheritance' with the social, legal, and economic, and 'heritage' with the cultural. In this paper, I use the term 'biosocial' to signal the entwining of these notions, particularly how genetic concepts of inheritance have been coproduced with legal frameworks and cultural norms. Indeed, the term 'biosocial' both refers to the historically contingent entanglement of biological and social ideas of inheritance, and draws attention to the processual nature of human becoming (rather than being) (Roberts, 2016; Kvaale et al., 2013). Developing an expansive notion of inheritance through engagements with its biosocial limits allows me to explicate the stakes of inheritance through a set of interrelated arguments. First, we can see that the nature of inheritance is unstable both within and across

different epistemic realms. Second, in all its instantiations, inheritance is intimately concerned with difference, particularly with sexualised, gendered, and racialised difference. [1] Third, and perhaps most crucially, inheritance both serves as a structuring concept through which difference is captured and domesticated into systems of technoscience and law, and it belies the capacities of these systems to contain alterity. And finally, if the preceding arguments are taken into account, inheritance provides an orientation toward ethical relations in the Anthropocene, based on notions of responsibility and intimate yet undecided ties between the past, present and future.

Ultimately, exploring the limits of inheritance leads me to argue that inheritance is an analytic through which difference comes to matter, in ways that are crucial to our contemporary moment. I conceptualise the limits of inheritance by mapping my analysis to Casarino's (2002) discussion of the last and other limits of capital. In Casarino's analysis, capital functions by the law of crisis, continually posing and then overcoming limits by "displacing them and setting them farther along" (Casarino, 2002: 98). In the case of inheritance, the last limits of inheritance are what can be known or chosen according to technoscientific and legal frameworks. Genetic testing, genome sequencing, new reproductive technologies, and legal reforms are all ways in which these 'last limits' are overcome, allowing the systems of inheritance by which belonging and property are stitched to biology to expand their remit. In these ways, difference is captured and domesticated through knowledge and law; the 'last limits' of inheritance are also what is referenced in exhortations to shape or choose one's own inheritance. The named and nameable differences of inheritance's last limits (queerness, genealogical gaps, genetic mutation, and so on) appear as external barriers to the 'natural' functions by which biological traits as well as wealth and property are 'handed down' from one generation to the next in a structured fashion,

governed by human agency. These forms of difference are equally crucially barriers to the ways by which these functions of inheritance can be known, traced, and governed.

However, these last limits serve to defer what Casarino (2002: 98) calls the "dread" of the *other limit* of inheritance. Casarino (2002: 98) writes, "in positing the last limit, capital attempts the impossible task of conjuring up and expelling from within itself the other limit, that is the absent present of its own unthought." The other limit that haunts inheritance, I suggest, is difference that cannot be captured, contained, or chosen. This limit reveals inheritance not as an object that can be acted upon, but as a *force of difference*. While inheritance may appear to imply constraint, unyielding structure, or even determinism (Povinelli, 2006), the 'other limit' of inheritance demonstrates that its opposition to self-sovereign models of subjectivity or blank-slate models of history is found in the order of alterity to which difference belongs. Inheritance is disciplining and ordering, but it contains an element that will always escape capture. Ultimately, the notion of inheritance developed here compels the rejection the capitalist and colonial discourses of self-sovereignty, *tabula rasa*, unlimited opportunity, and manifest destiny, and points toward a future that is neither teleological nor entirely open. It is this notion of inheritance that can guide ethical relation in the Anthropocene, which must account both for the consequences of past actions (known and unknown) and uncertain possibilities in the present.

This essay first undertakes a discussion of biosocial concepts of inheritance as a catalyst for understanding inheritance as a force of difference, both generative of and emerging from complex, contested, and embodied relations. Then, I develop a notion of inheritance that accounts for its relationship to difference by exploring two 'limit cases': the lost inheritance of

those dispossessed by transatlantic slavery and the negotiation of inheritance for queer families. I refer to these as limit cases not because they are extreme or even especially marginal but because they are knots of knowledge and relation in which there is much at stake in the limits of inheritance: belonging, kinship, justice, self-knowledge, and more. Approaching the limits of inheritance through these examples leads me to explore connections between diverse theoretical influences from science and technology studies, Black feminism, queer theory, and beyond, with the aim of developing a robust concept of inheritance for the contemporary era. What is at stake in this notion of inheritance is an analytic that both attunes us to mechanisms of governance and locates ethical response between a set of pregiven circumstances and a future that has not yet been fully foreclosed. I explicate this potential further in a concluding section on inheritance in the Anthropocene.

Before progressing, it is important to note that my own subjectivity is also relevant to the argument that follows. I write as a white American of mixed ethnicity, who has resided in multiple seats of empire, and today navigates the sticky ties of queer family-making. Thus while I have lived some of the complexities of inheritance discussed below, there are others to which I write as an outsider. There are, I think, possible points of connection between various experiences of difference through the lens of inheritance, but these should never be assumed.

2. BIOSOCIAL MATTERS OF INHERITANCE

In this section, I discuss biosocial understandings of inheritance that are central to my account of limits and difference. This risks prioritizing a narrowly positivistic and Euro-American centric idea of genetics and heritage. I nevertheless start here, for two reasons: first, theories of

biological and genetic inheritance (hereafter 'biogenetics'[2]) whereas 'biosocial' also encompasses social institutions) provide the conceptual foundation for most theories of inheritance today, even when not explicitly recognized. The hegemony of Western scientific views means we find them everywhere and thus they are worthy of critical engagement. Second, and perhaps most importantly, these concepts of inheritance show the fundamental roles that difference plays even in the most 'scientific' explanations. Moreover a historically-informed approach to biosocial and biogenetic engagements with inheritance shows that understandings of genetic inheritance are contingent, and that social processes have always been central to the most fundamental efforts to make meaning. This is both an ontological and epistemic argument against the association of genetic inheritance with biological determinism. Understandings of genetics have been unstable and evolving over time, but moreover the workings of genetic inheritance call into question not only the false binary between the biological and the social but the specific nature and mechanisms of this relationship (Davis, 2009; Wilson, 2004). As Franklin (2003: 75) writes, "the assumption that genes make us who we are is both too true to ignore, and too partial to be enough truth by itself." Far from narrowing and rationalizing discourses of inheritance, engaging with biogenetic and biosocial materials has opened more questions, proliferating narratives, and relations. The stakes of inheritance at its limits are thus amplified by this engagement.

Here I highlight three moments in genetic sciences of inheritance: first, the emergence of heredity as a topic for life sciences and the gene as the primary mechanism of inheritance; second, the 'new genetics' in the wake of genome sequencing; and third, epigenetics and the questions it raises about the relationships between environment and inheritance. Although my

focus here is largely on biosocial approaches to inheritance, it is important to note that the matter of inheritance and differentiation is not limited thus. Yusoff (2013) argues for considering geosocial inheritances: corporeal relations with geologic materials, in different spatial and temporal dimensions, that have given rise to Anthropocene subjectivities. Yusoff's work on geologic inheritances resonates with the notion of inheritance that I develop here, as it draws attention to how relations of inheritance non-deterministically condition what is possible for the future, calling for collective responsibility.

Instances where the sciences have tried to answer questions of inheritance are instructive for my argument – both for their discoveries, or the last limits that have been overcome, and for the onto-epistemological queries that are left open; the unresolved 'other limit.' Broadly speaking. genetics has provided boulders in the slipstream of inheritance for Western science, places from which to claim solid ground. However, while some notions of inheritance and ancestry had been in operation for centuries, it was only in the 18th century that an idea of heredity in the realm of the life sciences and as distinct from development, nutrition, and environmental influences emerged (e.g. Cobb, 2006). Historians of science emphasize that the biogenetic ideas of heredity and inheritance at the root of contemporary understandings were not 'discoveries' of a few men (e.g. Galton, Darwin, and Mendel) but rather the product of an "epistemic space" which was dependent on a diverse set of technologies, disciplines, and institutions, and the relations between them (Müller-Wille and Rheinberger, 2007; Parnes, 2007). This space entailed new ideas of key principles such as structure, generation, and reproduction, indicating that notions of genetic inheritance have always been unstable and contested (Müller-Wille and Rheinberger, 2007; Meloni, 2016). This emerging field always had difference at its centre, as its foundational

concepts were not intended to explain general species-level consistencies but "the fluctuating patterns and processes that structure life at a subspecific level," namely racial difference (Müller-Wille and Rheinberger 2007: 16). Furthermore, as the study of heredity developed, at times contradictorily, into Darwin's theory of natural selection it has had to account not simply for difference, but for how differences (variations) persist and are perhaps paradoxically amplified by evolutionary processes (Charlesworth and Charlesworth, 2009). Evolution produces differences between ancestor and offspring generations, but it also only acts on difference, and only on certain kinds of difference. Thus, the science of genetics never emerged to explain what was shared or universal in a population (Dupré, 2008).

Skipping ahead more than a century, we come to the 'new genetics,' a profound shift in the epistemologies and practices of inheritance which emerged with technologies of human genome sequencing and individual genetic testing. This era brought with it the lure of understanding the complete genetic instructions for the human species, with profound implications for biocapitalism, genetic modification and manipulation, and ideas of race (Fox Keller, 2015). The information that DNA provided, and the potentials of what that information could do, opened up new horizons – from ancestry studies, to genetically-tailored medical interventions, to forensic evidence. New technologies implied return to genetic determinism enabled by individualised genetic testing. But, as Rose (2001: 12) writes, "the promise of certainty is illusory. In almost all conditions […] genetic diagnosis of individual susceptibilities is still, inescapably, probabilistic." Calculations of risk, then "offer no clear-cut algorithm for the decisions of doctors or their actual or potential patients" (Rose, 2001: 12). Indeed, studies of genetic science in science and technology studies show that social processes, always incomplete, fragmentary, and political, are

required to make meaning from DNA (see for example Nelson, 2016; Reardon, 2017). The capaciousness of inheritance as a concept helps us to understand this challenge; genetics has only ever partially been able to address these questions.

In the 'new genetics,' questions of racial difference remained central to the production and mobilization of genetic knowledge. A purely genetic explanation for race was ruled out by genetic sequencing, but at the same time the socio-material complexity of race remained at the heart of ancestral DNA studies, as well as many genetically-tailored medical interventions and emerging epigenetic arguments for reparations (Koenig et al., 2008). For some, the 'new genetics' is an occasion for re-examining the nature of race as an unstable object around which individual and collective desires, not to mention neoliberal bio-economies, cohere (e.g. El-Haj, 2007). While the quest to know ancestry and produce genetic knowledge is still fundamentally tied up in difference (it is *different* genetic sequences that make this kind of analysis possible), DNA is also the catalyst for what Nelson (2016: xi) calls "social unification efforts," referring to attempts by Black Americans to establish ancestral ties to the African continent, and to use genetic evidence to seek reparations for the dispossessions of slavery. However, even when denying a simple genetic basis for race, studies of ancestral DNA can actually reinscribe racism, for instance in the view that indigenous people exist as repositories of premodern DNA (Reardon and Tallbear, 2012). Questions of DNA and race involve far more complexities than can be discussed here; suffice to say that inheritance reworks difference, and vice versa, in these configurations.

Even within the science itself, the 'new genetics' opened more questions than it answered. Rather than conclusive understanding of the 'human blueprint,' scientific endeavors like the Human Genome Project indicated that the genome is a far more complex system than previously imagined, ushering in the 'postgenomic era.' As Fox Keller writes, new genetics "has turned our understanding of the basic role of the genome on its head, transforming it from an executive suite of directorial instructions to an exquisitely sensitive and reactive system" (2015: 10). Novas and Rose (2000) argue that, in this paradigm, deterministic understandings of genetics are overwritten by notions of risk and probability to shape emerging forms of subjectivity, putting 'genetically at risk' individuals into new relations with past and future generations as well as biomedical institutions. Others show how genetic ancestry research elaborates specific epistemologies of temporality, biology, and identity, and reinscribes racial difference, even when claiming to reject biological or genetic essentialism (Reardon and Tallbear 2012; for a good recent review of genetic ancestry research see Tamarkin, 2020). Thus, questions of inheritance can never be fully or satisfactorily answered through genetics alone, but this is less a gap than a productive moment that both engenders social relations and reveals the other limit of inheritance as a force of difference that always ultimately evades capture. In seeking to address inheritance's limits, these efforts to make sense of inheritance *do something* that extends beyond the uncovering of scientific facts; but what they do always suggests not simply the unknown but the unknowable.

Finally, I briefly discuss the contemporary field of epigenetics, which has emerged as a foundational paradigm in the postgenomic era, deriving from the findings of the new genetics on the plasticity of the genome and the influence of non-DNA factors on gene expression (e.g.

Griffiths and Stoats, 2013; Richardson and Stevens, 2015). Epigenetics concerns potentially heritable changes to the mechanisms that influence the expression of genes but do not alter the genome itself. In other words, epigenetics takes biological notions of inheritance and heredity beyond DNA, highlighting ever-present tensions in the notion of the gene (Meloni, 2015). Epigenetic influences include the cell environment, but also nutrition, aspects of the social environment, and environmental toxins (Guthman and Mansfield, 2013). Thus studies of epigenetics call into question the boundary between the body and the environment, in different although perhaps complementary ways to Yusoff's (2013) arguments – in both, the environment is rendered active in inherited futures. The porosity of the body in relation to the environment emphasized elsewhere by material feminists seems to take on greater weight when it results in effects that can be traced through generations (Bosworth 2017). Indeed, for epigeneticists, "sufficient evidence exists to argue that the body should not be conceptualized as a clearly bounded predetermined entity from birth" (Lock, 2015: 162).

Epigenetic science intervenes in debates about the biological basis of race as it challenges fundamentally the metaphor of DNA as prescriptive code and moves emphasis back from individuals to collectives; for instance, the notion of inherited trauma suggests an understanding that goes beyond individual pathology (Dubois and Guaspare, 2020; Guthman and Mansfield, 2013). Yet while it shifts the lens away from race as a genetic fact to a social experience, epigenetics brings race back into the biological sphere, for example with the suggestion that certain groups of people experience observable biological changes due to traumatic shared experiences of racism or deprivation. In addition, the relationship between the individual and the collective is again raised. Scholars show how epigenetic hypotheses have tended to recycle

problematic assumptions about environmental determinants of race and have implied homogeneity and permanent 'damage' of members of already marginalised groups (Meloni et al., 2022). Furthermore, even while it serves as fodder for calls for reparations in some circles, epigenetic science is still coded with notions of what forms of difference are normal and desirable. The close tie between epigenetic sciences and interventions (social as well as medical) pathologizes difference and reinscribes norms. Epigenetic paradigms of inheritance reencode the politics of difference into reproductive politics, with the uterine environment as a battleground for inheritance. This leads Mansfield and Guthman (2015: 16) to argue that epigenetics constitutes "a new, more plastic form of eugenics, one that is about marking an increasing range of difference as disruption and abnormality and then seeking to cure people of these difference." Indeed, Meloni (2016) cautions against a view that epigenetic 'soft heredity' (in contrast to 'hard' genetic determinism) will result in less oppressive notions of race, noting the importance of ongoing contestation both over and within the biological and life sciences.

Put broadly, epigenetics troubles the relationship between environment and body, and the notion of a universal body at all, and calls into question the temporalities of inheritance. While inheritance helps to solidify a rights-bearing subject, and emphasizes a body formed in relation to an environment, from the days of Darwin to the contemporary epigenetic moment, the 'stuff' of inheritance forms the nonhuman within in us, the trace at our core, living beyond us: "a common reservoir of dispositions, passed down from the sum total of ancestors, redistributed among individuals of one generation, and competing now, in the present, for their realization" (Müller-Wille and Rheinberger, 2007: 24). This brief exploration illustrates that to think difference and inheritance is to think both with and beyond the gene. It gives us various registers

in which to ask, if not answer, the question "what persists?" At the same time, it shows again that difference, and particularly racial difference, is at the heart of this question. Taken together, these accounts establish inheritance as a terrain of struggle, where racial and reproductive politics are never far from the surface.

3. INHERITANCE DISPOSSESSED

The first 'limit case' that provides an entry point into the material and social relations of inheritance concerns efforts to reclaim ancestry by descendants of those enslaved in the transatlantic slave trade. In her 2007 book *Lose your Mother: A Journey Along the Atlantic Slave Route*, Hartman suggests that we can read enslavement as, among other things, the dispossession of inheritance on a massive scale. To kidnap and enslave people required severing them from their pasts. Hartman (2007: 155) writes, "in every slave society, slave owners attempted to eradicate a slave's memory, that is, to erase all the evidence of existence before slavery." Ancestral lineages are, of course, evidence of existence. Moreover, the longevity of the institution of enslavement has entailed not just the denial of inheritance but its manipulation, in eliding the role of the father in the erasure of sexual violence against enslaved women, and in racial property regimes such as *partus sequitur ventrem*, which stipulated that the children of enslaved women would inherit their mothers' status. Of sexual violence and mixed-race parentage in the Americas, Hartman (2007: 77) writes, "the 'rope of captivity' tethered you to an owner rather than a father and made you offspring rather than an heir." Sharpe (2016: 91) puts it succinctly: "*Family* falls apart, in the wake of the hold and the ship, it cannot hold." The institution of enslavement had inheritance at its core; the severing and elision of ties of ancestry

and kinship was not a side effect but was central to its function, and thus to the consolidation of whiteness with wealth accumulation and property ownership (see also Spillers, 1987).

How can the descendants of enslaved people reclaim lost heritage amid structures of inheritance predicated on harm and disposession? The frictions of desire between a pre-conquest past, silenced histories of violence, and the project of living in the wake of enslavement make the work of negotiating inheritance rife with complexity. For many, the desire to uncover and recuperate inheritance has prompted uncomfortable and partial conversations, unsatisfying forays into the archives, and, ultimately, recourse to DNA testing. For Hartman (2007: 77), her own family's oral history fails to fill in the genealogical gaps, leaving her with a painful truth: "slaves did not possess lineages." If the archive can only ever tell a partial tale in the best of circumstances, the archives of enslavement are especially unsatisfying; their "account of commercial transactions" precisely eludes what is human (Hartman, 2007: 17).

Into this gap, DNA testing offers a new means for filling in the silences and empty spaces of history. It promises the facts of genealogy; a promise that is difficult to resist even when its shortcomings are known and felt. DNA tests for racial ancestry are part of a suite of genetic technologies emerging in the last several decades, which have opened up new horizons for the science of inheritance, from ancestry studies, to genetically-tailored medical interventions, to forensic evidence. And yet, the science of individual DNA testing, particularly in its popular commercial expressions, is frequently inconclusive; some researchers claim, "these tests should not be seen as determining the race or ethnicity of a test-taker. They cannot pinpoint the place of origin or social affiliation of even one ancestor with exact certainty. Although wider sampling

and technological advancements may help, many of the tests' problems will remain" (Bolnick et al., 2007: 400).

It is not only through individual genetic testing that DNA and heredity make their way into discourses of the present life of enslavement. New research on the epigenetic effects of enslavement and other forms of collective trauma been taken up by activists as fodder for calls for reparations. Yet looking to the epigenome for evidence of the lasting impacts of enslavement suggests that social and economic arguments are somehow lacking; it represents a turn if not to the biological basis for race then at least to science for 'hard evidence.' And despite its uptake in various circles, the science of inherited trauma is still inconclusive (Grossi 2020). Nonetheless, some find epigenetic research a 'hopeful' opening, suggesting not only justification for justice claims but also entry points for intervention into poor health outcomes, against ideas of the biological fixity of disease prevalence among certain populations (Warin et al. 2020). Taken together, biosocial approaches to the individual and collective legacies of enslavement reveal what Franklin (2003: 71) calls "the gap between genetic information – which is often highly technical but incomplete – and meaningful knowledge, which, by definition, is socially, not medically, defined, evaluated, and acted upon." Yet within this gap, perhaps DNA suggests new openings, providing a "lexicon with which to continue to speak about the unfinished business of slavery and its lasting shadows: racial discrimination and economic inequality" (Nelson, 2016: 25).

Both DNA ancestry testing and epigenetic research on trauma suggest that questions of inheritance are not satisfactorily answered through genetics alone, but this is less a gap than a

productive moment, spawning new forms of expertise and social relations as documented in scholarship too extensive to discuss fully here. Indeed, for Nelson (2016), rather than the inconclusive results of genetic ancestry testing resulting in either concrete 'facts' of race and ethnicity or generalized confusion and uncertainty, the meaning-making practices of genetic testing subjects come to resemble 'cultures of relatedness' and networked notions of diaspora. Other authors such as Reardon (2012) and Tamarkin (2020) describe how genetic sequencing and individual genetic testing shift dynamics of power and knowledge as lines between scientist and subject blur and new claims become legible. These advances in genetic science, as well as their silences and uncertainties, also provide openings for new connections between the social and biological: "affiliations that incorporate biogenetic facts may nonetheless be the 'families we choose'" (Nelson, 2016: 263).

But what does it mean, concretely, to inhabit a variegated and violent space of distance and proximity between the biological and the social? For some, making peace with inheritance does not happen by seeking new kin relations. Hartman, for instance, searches for her story in the breach of slavery rather than a recuperation of African roots; she writes, "for me, the rupture was the story" (2007: 42). To dwell in this rupture is to reject the mythology of lineage, leaving ends open and problems unresolved. The quest to discover one's genealogy or to seek genetic imprints of slavery's legacy is to challenge the last limit of inheritance; what can be known, recovered, and reshaped to form new communities of belonging and claims for justice in the wake of dispossession and beyond received structures of accumulated wealth. Yet it is not simply scientific uncertainty that causes the quest for inheritance to falter; it is also the sense of incompleteness and lingering loss that persists for many even when these questions are, on the

face of it, answered. Conversely, new kinships might be chosen, but other traces of inheritance might appear in an unexpected physical trait, or even the call of a homeland that is not a home. The spectral presence of inheritance thus suggests what I am calling here, after Casarino, the other limit of inheritance; inheritance as a force rather than a fact, and one that ultimately evades capture by the powerful as much as the dispossessed.

4. QUEERING INHERITANCE

Like the reclamation of dispossessed heritage, queer practices of inheritance call into question the limits of knowledge and choice, providing another limit case for this analysis. While these contexts are sometimes incommensurable, they may also be intersectional. For instance, Nguyen (2020) proposes 'queer dis/inheritance' as a way of inhabiting refugee legacies that disrupts patriarchal, nationalist, and queerphobic structures of inheritance (including those built on enslavement, referenced above) whilst seeking futures that honour difficult pasts. This argument references the tension between kind of reproductive nihilism prevalent in some contemporary queer theory which rejects the heteronormative figure of the white, innocent child and the nuclear family, and, on the other hand, interventions concerned with actually-existing children, including queer children, disabled children and children of colour (e.g. Edelman, 2020; Stone, in press; Out of the Woods, 2015). At the heart of these debates are questions regarding the social role of reproduction. In proliferating forms and meanings of reproduction, queer practices shed a different light on the imbrication of difference and inheritance. While heterosexual people also engage in assisted reproduction, examining these practices through a queer lens amplifies the functions of inheritance as a key mechanism by which difference comes to matter. Through genetic imaginaries and the enactment of relationships of biological and legal inheritance, queer

parents both ‘queer the family’ and gain entry to the normative heteronormative nuclear family structure.

Reproduction is inseparable from contemporary understandings of inheritance. It is “the force that drives biological evolution” but it is also historically contingent and deeply social, linked not just to social norms but to systems of production (Ellison, 2003: 8; Lewis, 2018). This section deals particularly with collaborative reproduction, which describes assisted reproduction technologies (ARTs) that use donated sperm and/or eggs and/or embryos, and/or surrogacy (Richards, 2014). Neither collaborative reproduction nor queer parenthood are new, but both have entered more forcefully into public discourse in the last 40 years with the development of in-vitro fertilisation (IVF) and the victories of some queer liberation movements. Collaborative reproduction is interesting to this discussion not because it represents a fundamentally different or unnatural form of reproduction but because it highlights the complex enfolding of biology, kinship, and inheritance, revealing much about social meaning and the limits of knowledge and choice. In addition, collaborative reproduction can be understood to be in productive tension with calls in some feminist and queer circles for *collective* reproduction, that is, the commoning of social and biological labour that might lead to more radical rethinkings of kinship and inheritance (e.g. Lewis, 2021; Federici, 2020). Collective approaches to reproduction seek to destabilise the heteronormative nuclear family that forms the basis for capitalist accumulation, whilst collaborative reproduction often extends this model to those for whom it was previously unavailable (Puar, 2007). At the same time, even the most privatised and conservative practices of collaborative reproduction can suggest the impossibility of this model. Thus this section

continues to explore what specific practices of inheritance can tell us about the productive limits of this concept; how they can help us build a theory of inheritance as a force of difference.

The ideas and desires through which queer reproduction is framed reveal particular understandings of inheritance and its limits. Western imaginaries of what can be passed down by blood have been extensive and can be seen to reach far beyond genetic determinants, including prestige and morality (Franklin, 2013). As theories of genetic inheritance rose to dominance, we might expect notions of what can be inherited to narrow to what genes impact. Thus we might imagine that the stakes of choosing one's genetic lineage are somewhat circumscribed. Indeed, early scholars of the 'new genetics' thought that emphasis on genetics would medicalise kinship relations, and that biological 'facts' might replace the creativity and flexibility of socially constructed kinship (Franklin, 2013). But, perhaps surprisingly, Franklin (2013: 302) finds that "far from the impartiality of scientific discourse narrowing the meanings of genes, their revealed partiality actually increases their plasticity in social contexts." Mamo (2007) calls this a return to Lamarckianism, or a renewed belief in the heredity of acquired characteristics. She observes her lesbian research subjects (somewhat ambivalently) choosing sperm donors for attributes such as creativity and flexibility. In these decisions, beliefs about inheritance clearly extend beyond the science of genetics.

The choice of what genetics one might endow one's children with lies alongside and entangled with other choices that parents make. And yet, there is a sense that the encoding of difference through genetic choices carries great weight regarding what will be inherited from one generation to the next, and how this inheritance can mark continuity, family, and normality. The

act of choosing donor biomaterial, alongside a set of normative and medicalized practices to which many queer people seeking to reproduce are exposed, can suggest tangles of genetic selection removed just a few degrees from the eugenics logics to which queer people themselves have frequently been subjected (Ordover, 2003). Even though genetic choices here are presented as individualized (about the future of one's children and family) rather than relevant at the level of population, these choices "are entangled with complicated histories of genetic explanations of self, sociability, and relatedness as well as eugenic practices of controlling who and under what conditions persons are supported and constrained in their reproduction" (Mamo, 2007: 195).

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Queer reproductive decisions enlist ideas about genetics and inheritance into new kin formations. As genetic testing develops, the possibility of anonymous donation of biomaterials may disappear altogether (it is already outlawed in several jurisdictions), leaving questions of heredity and sociality to be renegotiated. Moreover, the gene becomes an assumed carrier for social relations and even kinship in the increasingly prevalent phenomenon of donor sibling groups (e.g. Hertz et al., 2017). Technological advancements furnish prospective queer parents with a new range of biosocial choices. But the incentive for moving to a technoscientific and institutionalized reproductive experience, rather than networks of friends and other queers (and perhaps more collective reproductive arrangements), is often more about legal rights than genetic choice; it is frequently only by working within the institutional frameworks of sperm banks and fertility clinics that non-genetic parents can attain equal rights (Mamo, 2007).

When it comes to reproduction and new genetic technologies, genes once again operate as vectors of the threat of difference. In relation to donor biomaterials, these genetics threaten

irreconcilable difference in appearance and health, and perhaps even identity and culture. The limits of what can be known or chosen in making life, and the lifelong implications of the genetic choices of one's parents, haunt the limits of queer reproduction in a way that indicates deeper uncertainties. For instance, the rise of epigenetic knowledge has moved discourse from deterministic 'right to know' for donor conceived people and people born from surrogacy. New understandings are more capacious, citing the significance of the uterine environment, and have differing social and political implications (van Wichelen, 2022). This shifting terrain of uncertainty and responsibility is not by any means an argument against collaborative reproduction (as though *any* reproduction is fully unassisted) and it is certainly not an argument against the genuineness of queer families. Rather, it is to say that the illusion of the nuclear family is only so capacious; inheritance escapes both attempts to control it through patriarchal and heteronormative ideas of lineage *and* efforts to choose it unbound by these norms. Inheritance reminds us of the spectral presence of known and unknown others who make us, a presence that often sits at odds with conventional notions of 'family.'

Furthermore, the knowledge and agency of selecting biogenetic materials does not just position the prospective parent as the ideal neoliberal individual, improving the self through the selection of a good genetic line. It also says something about one's fantasies of family, and of the future; what can be known and predicted. Mamo's lesbian parents reveal here the imposition of inheritance's other limit; describing their thinking when choosing a sperm donor amidst the uncertainty about the impact of genetics, one woman says "Our feeling was that we would stack the deck as much as we can" (2007: 191). To 'stack the deck' is then to intervene in a way that feels perhaps 'against the rules' in the uncertainty of the future. But it is also to keep the future

open; Mamo's subjects seek to create a child who would be "flexible, creative, would cope well in life, and would be happy" (Mamo, 2007: 191). Here there is evidence again of the double allure of inheritance; both continuity and openness; knowledge, agency, and a kind of domesticated uncertainty. But what looms outside of the action of 'stacking the deck' is a game whose rules might change, or even the realization that there are no rules at all.

A careful reading of Maggie Nelson's (2015) *The Argonauts* gives important weight to some of these complexities as it chronicles her journey through queer pregnancy alongside her partner's gender transition. While sperm donors enter and exit her narrative without a lot of weight given to their genetic contributions, matters of genetic inheritance edge into her account: on first seeing her child, one of her first thoughts is "I notice he has my mouth, incredible" (Nelson, 2015: 165-166). Elsewhere in the text, her partner, who is adopted, recognizes a suspected genetic predisposition to alcoholism. And yet, the text can also be read for ways to rethink the binaries of knowledge and uncertainty, choice and predetermination, and the ways in which value is assigned to these attributes when it comes to inheritance. Perhaps, she suggests (via her partner's experience), not knowing one's genetics can result in "a spreading, inclusive, almost mystical sense of belonging" – or at least refuge from the threat that one might turn into one's parents (Nelson, 2015: 173). It is in this ambivalent operational space that the text closes, with the notion that "the joke of evolution is that it is a teleology without a point, that we, like all animals, are projects that issue in nothing" (Nelson, 2015: 178). This way of thinking, perhaps, traffics however tentatively in the ultimate limit of inheritance, in a kind of difference that cannot be chosen. Both in the insistence of (un)chosen inheritance (the mouth, the drinking problem) and in

the imagination of being "utterly plural" and utterly pointless, difference that evades capture – the other limit of inheritance – comes through.

5. CONCLUSION: INHERITANCE IN THE ANTHROPOCENE

In the previous sections, this essay has explored biosocial concepts and conundrums of inheritance to show how inheritance operates as a force of difference. This helps us understand inheritance as a relation rather than a genetic or legal fact. But moreover, understanding inheritance as a force of difference means locating it within attempts to contain, channel, know and govern difference, and at the same time as the constitutive outside of these efforts. Casarino's formulation of the last limit and the other limit prove instructive here, helping us to both draw connections and distinctions between the juridical, medical, scientific, and normative apparatuses that shape notions of inheritance and capture difference, and the forces of alterity that will by their nature exceed these efforts.

In concluding this essay, I want to consider what this understanding of inheritance means for the current moment of environmental crisis that we might refer to by the contested shorthand of the Anthropocene. As mentioned above, the multigenerational timescales of the Anthropocene, as well as the sense that we are already living in the aftermath of the toxic event make inheritance a prescient yet fraught concept for the Anthropocene. Inheritance implies not just an endowment but also a sense of responsibility. Derrida (2012) writes of inheritance as an obligation, a "double injunction." One's heritage must be both first recognized (and thus reaffirmed), and then transformed. Following Derrida, Diprose (2006: 437) writes, "A response, an act, an experience, is in the first place a passive enactment and reaffirmation of meanings we have inherited. But

[…] we cannot simply accept it and reproduce it unchanged; in enacting it, in responding, we have chosen to keep it alive." A fully developed conception of inheritance, with notions of difference and responsibility at its centre, and with an eye to the limits of choice and knowledge, might prove orientationally useful to the current moment. It may not be a stretch to say that how we navigate the spaces and forces of inheritance is how we navigate the ethics and politics of the Anthropocene. As a starting point, the biosocial mechanisms of inheritance can help us to understand both the origins of the crisis and the uneven distribution of its negative impacts and buffering capacities. Put more explicitly, an engagement with inheritance can also tie inherited wealth to dispossession and difference, and reveal the instabilities at the biosocial heart of these structures. Engaging with the multifarious practices of inheritance can also orient us toward different forms of kinships and intergenerational narratives of connection and belonging. For instance, Todd (in press) distinguishes between possessive and extractive ideas of 'resource heritage' in framings of oil and gas extraction in Alberta, and Métis relational networks of kinship based on responsibility and obligation, raising notions of inheritance that exceed legal and bio-centric frameworks aimed at capital accumulation and resource extraction. This opening suggests geological 'kinscapes' that beckon different interpretations of intergenerational relations and claims for environmental justice.

To engage with the politics of inheritance in the contemporary moment is to consider unsettled and unsettling questions of agency, transformation, and responsibility. The notion that we choose our inheritance, that history and biology are not our destiny, implies both empowerment and responsibility. And yet the possibilities, or even necessities, of choosing one's inheritance cannot lead to easy resolution, to any form of *tabula rasa.* Thinking at its limits helps us to form a full-

bodied (and embodied) understanding of inheritance. Following Casarino's (2002) schematic of the 'last limit' and the 'other limit' reveals a set of scientific practices, social relations, legal interventions, and technological advances that aim variously to operate at the edges of human agency when it comes to inheritance. Moreover, these efforts to overcome the limits of inheritance in fact further entrench the systems by which inheritance is known, legitimated, and governed. At the same time, these structures are haunted by the other limit of inheritance, which is productive of difference that evades systems of capture. This 'other limit' of inheritance, sensed in the edges of the practices of knowledge and governance discussed here, shows that inheritance is a *force of difference* that will shape us in ways that we cannot foresee or control. Writing of "a difficult inheritance," Yusoff (2015: 402) states, "it cannot necessarily be affirmed or resisted, it might just be something that has to be lived with, without the possibility of revision." 'Living with' is a politics of inheritance, as much as affirmation or negation. The complexities of inheritance are implicated in not only imaginaries of future selves that will be answerable to our heirs, but also in how we negotiate a future that is neither foreclosed nor fully open. This is a future, and indeed a present, that bears the weights of economic, political, and environmental pasts and the inevitability of mutations in all these realms, and beyond. But neither the traces of the past nor the possibilities of the future can be fully known.

Concluding her graphic memoir, *The Inheritance*, Povinelli (2021: 315) writes, "inheritance doesn't come from the past. Inheritance is the place we are given in the present in a world structured to care for the existence of some and not of others." Ahmed (2007: 154) suggests something similar when she argues that inheritance is not simply genetic but also a set of proximities and orientations, "a point from which the world unfolds." Inheritance does not just

allow us to contemplate multifarious dimensions of memory, history, wealth, or genetics. It can provide an ethical and political orientation, a tool, however imprecise, that can help us navigate the gap between the past and the future – to meet the obligations that it demands. Equally, inheritance calls for a robust analytic because of its obdurate power; we can choose to ignore our inheritance but it shapes us nonetheless. This is as true of contemporary power relations and the institutions we inherit as it is of individual genetics. Inheritance will work us over, work over us; even as we are compelled to choose it, it will forever evade us.

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[1] Throughout, I adopt a Deleuzian approach to difference not as negation and deferral (vis. Derrida) but as affirmative and inherent to becoming.

[2] I use 'biogenetic' to refer to epistemologies and practices that are more specifically located in the life sciences, whereas 'biosocial' includes and intertwines scientific knowledges, institutions of governance, and social norms.