# Planetary Rifting and the Paleogeography of Care

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*Abstract* With their specter of intergenerational betrayal, global environmental crises increasingly entangle politics with matters of care, attachment, and love—especially the unconditional bonds we are so often assumed to share with our offspring. As a contribution to the nascent field of paleoenvironmental humanities, this article's approach to questions of care and responsibility turns from future horizon-scanning to the realm of human origins. It focuses on two broad sets of paleo stories that share a concern with rifts or stress points that complicate originary events and scenes. The first of these is a family of hypotheses which propose that pivotal evolutionary developments took place in the climatically variable and tectonically active terrain of the East African Rift. The second is the cooperative breeding hypothesis, which contends that communally distributed childcare arrangements are a definitive characteristic of the genus *Homo*, while also highlighting the conditionality and precariousness of human intergenerational care. Taken together, these approaches point to deep-seated fault lines running through both our home planet and our own psychosocial being. Confronting these rifts might help loosen the hold of notions of ontological reconciliation between humans and nature that risk exacerbating the very problems they seek to resolve, while also helping us to seek attachments that are more conducive to living with and through earthly volatility.

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## Planetary Troubles, Paleo Stories

"The fundamental goal of the adults in any society is to protect their young and do everything they can to leave a better world than the one they inherited," proclaimed a group of young climate activists recently: "The current generation of adults, and those that came before, are failing at a global scale."[1] As well as underscoring how climate change threatens their future, these youthful campaigners reminded their elders that

1. Thunberg et al., "This Is the World."

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children are more vulnerable than adults to extreme weather and related environmental threats.

Alongside or entwined with such narratives is the testimony by colonized and formerly enslaved peoples that their worlds have already been lost—through repeated acts of violence that have frequently targeted children. At the same time that young people are announcing a breakdown of intergenerational trust and responsibility, so too is there ample evidence that this failure has roots reaching far deeper than the current global environmental crisis.[2] In painful and fraught ways, then, contemporary issues are entangling politics, the highly conditional matter of collective imagining and decision-making, with care, attachment, and love—and especially the unconditional bonds we are often assumed to share with our offspring.

The same planetary predicament that intensifies issues of futurity also brings the deep past into visibility. While end-of-the-world tales are proliferating, so too are paleo stories: narratives of beginnings, extended duration, and evolutionary development. In this article we ask what happens to our thinking about care and responsibility in the context of environmental crises if we step back from future horizon-scanning and turn to the no-less-obscure realm of human origins. What should we make of the evidence that our ancient ancestors learned to love, laugh, cry, chatter, and squabble in landscapes that were deeply rifted and geoclimatically unstable? Why does it matter that being a striding, bipedal primate presents dilemmas for birthing and raising our young? And how might these paleo issues begin to speak to contemporary questions of livability and survival—and all their specters of intergenerational betrayal?

Thinking about the future, as deconstructionist thinkers counsel, is inevitably tied up with thinking about origins. And origins, they add, tend to be messy, complex, and troubling.[3] By training we are not paleontologists, paleogeographers, or evolutionary anthropologists. But as social scientists raised on issues revolving around what came to be called modernity, we are finding it hard to hold the insights of the deep-time disciplines at bay. Today the contemporaneous, the futural, and the deep past seem intent on imploding. Geologists speculate about the lithic strata that current human activities will leave behind; climatologists conjecture about how far into the future contemporary climate changes will continue to impact; biologists grapple with the finality of extinction. Likewise, humanities scholars find themselves shuttling between resurfacing evidence of ancient human life and questions about what kind of remains we are bequeathing to the future.[4] Just as Gilles Deleuze and Félix Guattari once proposed that all "history is a geohistory," we find ourselves musing over the extent to which all geography bears

2. Alongside the recent revelations about the Canadian Indian residential school system and its counterparts in other settler societies, we are thinking here about Europe's domestic history of infant abandonment and of the dismal failure of most of the "modern" institutions that arose in response to this problem. See Boswell, *Kindness of Strangers*, 431–34.

3. Kirby, *Quantum Anthropologies*, 30–31; Yusoff, "Anthropogenesis."

4. Farrier, *Footprints*.

traces of paleogeography.[5] We take inspiration from Shumon Hussain and Felix Riede's call for a "paleoenvironmental humanities" that seeks "to align the rich, long-term archeological datasets on human-environment interactions with issues, concepts, and concerns of the emerging environmental humanities and the climate change debate at large."[6]

All science has elements of conjecture, but studies of human origins are especially reliant on inference, extrapolation, and speculation. Like all originary tales, human evolutionary stories are partial, reflecting the cultural-historical situatedness of their narrators.[7] They are also more prosaically patchy and localized. Evolutionary histories extending over millions of years are pieced together from skeletal fragments, with lingering doubt as to whether sites yielding specimens are representative of ancestral homelands or simply the most felicitous setting for preserving bodily remains.[8] Small wonder, then, that accounts of human origins, even when restricted to Western onto-epistemological traditions, are complicated, plural, and contested.

We focus on two sets of theories that deal with different aspects of human origins but that share a concern with rifts or stress points that complicate originary events and scenes. The first is a family of approaches to human evolution—including the "pulsed climate variability hypothesis" and the "complex topography hypothesis"—that are seeking to account for the significance of dynamic earth processes in pivotal hominin evolutionary developments.[9] The second set centers on how ancestral humans raised their children. Contesting earlier accounts that privileged male-female pair bonds, the "cooperative breeding hypothesis" contends that communally distributed childcare arrangements are a definitive characteristic of the genus *Homo*. While both approaches challenge theories that have come to appear politically and culturally dated, we are well aware that in a contemporary intellectual milieu that is increasingly critical of universalist claims, they should not be above suspicion themselves. Attentive to risks associated with theorists from particular cultural-historical and onto-epistemological traditions telling a singular human story, we are also interested in the way that the two sets of hypotheses in question unsettle certain assumptions of modern Western knowledge formations from within.

Approaches to human evolution that emphasize dynamic climatic and geological processes not only draw attention to the ordinariness of living with physical uncertainty; they also underscore the very contingency of the human lineage.[10] While the cooperative breeding hypothesis affirms the advantages of close-knit communal relations and the importance of human affective aptitudes, it also highlights the constant risk of insecure

5. Deleuze and Guattari, *What Is Philosophy?*, 95.
6. Hussain and Riede, "Paleoenvironmental Humanities."
7. Haraway, "Situated Knowledges."
8. King and Bailey, "Tectonics."
9. The term *hominin* refers to the genus *Homo* and its immediate predecessors.
10. See Hussain and Riede, "Paleoenvironmental Humanities."

caring networks—in ways that resonate with psychoanalytical insights about the self-dividedness of the human psyche. Taken together, we suggest, these paradigms point to deep-seated fault lines that run through both our home planet and our own psychosocial being. Where literary critic Lee Edelman proposes that the modern ideal of "the rock of compassionate love" is built on shaky foundations,[11] we are also interested in the implications of that precariousness extending literally into the ground beneath our feet.

In bringing together the deep dividedness of both human subjects and our geophysical abode, we by no means wish to disavow attempts to construct more just and durable human-nature relations. What we do want to suggest is that ethico-political approaches to the current planetary predicament that fail to confront this dual rifting run the risk of pursuing forms of reconciliation or ontological repair that reinforce the very problems they seek to fix. While the paleo stories we review will not solve the challenge of securing livable conditions for future generations, we suggest that they may hold insights for learning to live with and through the condition of being self-divided creatures on a self-differentiating planet.

### Cracks in the Earth

The current consensus dates the appearance of early or proto hominins to somewhere between four and seven million years ago, with the genus *Homo* emerging in the vicinity of 1.8 to 2.5 million years ago; the majority of fossil specimens that evidence these developments having been recovered from the rift system of East Africa.[12] The question of how the primate ancestors of humans descended from trees and began to walk upright has long been linked to environmental change, a concern that has developed rapidly over the last half century as the geosciences have pieced together ever more of the planet's history.[13]

Early scholarly efforts to incorporate climate change in hominin evolution made connections between increasing aridity in the African continent resulting from changes in the global climate system and the adaptation of hominins to ground-dwelling life on the savannah, with variations on this theme drawing attention to the impact of repeated pulses of climate change.[14] But other researchers raised questions about the "savannah hypothesis," particularly by drawing attention to the specificities of the East African Rift Valley. Subsequently, a newer group of hypotheses has emerged that combines climate change with the continental scale tectonic activity that formed the Great Rift system.[15]

Geologists characterize the African Rift as the earth's largest and longest-lasting example of the continental rifting that occurs when the planet's crust is stretched: the

11. Edelman, *No Future*, 91.
12. Maslin et al., "East African Climate Pulses."
13. See Clark and Szerszynski, *Planetary Social Thought*, 19–27.
14. Maslin et al., "East African Climate Pulses."
15. Trauth et al., "Human Evolution," 2982.

process known as extensional tectonics. While early theories had tectonic plate motion wrenching Africa in two, current hypotheses have the African plate splitting as rising magma in the earth's mantle pushes upward against the rigid crust. As the crack opens, land subsides, resulting in extensive, linear, near vertical-walled valleys.[16] According to the "pulsed climate variability" hypothesis, this tectonic forcing combines with global climate change to produce rapid shifts between wet and dry conditions in the Rift Valley and on the mountain shoulders around it. One of the major impacts of these climatic-tectonic rhythms was the repeated formation and disappearance of large, deep lakes in the rifted landscape: a dynamic process, researchers suggest, that both encouraged hominin ecological flexibility and periodically separated groups from each other—thus promoting speciation.[17]

While pulsed climate variability theorists observe that ongoing volcanic activity contributed to the fragmentation of lake basins in the Rift Valley region, "complex topography" theorists push this further, proposing that seismic and volcanic activity played key roles in the shaping of a distinctive "human niche."[18] Rugged, variegated terrain, they contend, offered platforms from which early hominins could observe and later channel the movement of animal prey, while hardened lava flows functioned as natural stockades, offering tactical advantages to a ground-dwelling and relatively defenseless primate. Complex topography theorists also suggest that the demands of traversing steep, uneven ground point toward scrambling as the vital intermediary between primate arboreal locomotion and hominin erect walking. They advance this as a more convincing route to bipedalism than a direct transition from tree-climbing to striding across savannah or the more recent hypothesis that proposes an intermediary "woodland" phase.[19] Only later, as lower limbs grew more suited to sustained upright walking, they argue, did hominins venture onto the savannah.

These claims remain contested, and even their advocates readily concede that understandings of linked climatic-tectonic dynamics are still formative.[20] As paleoclimatologist Martin Trauth and his colleagues sum up, "The incompleteness of the fossil and the inaccuracy of the paleoclimate/environmental records will probably never provide the degree of detail that would be required to prove or disprove any of these hypotheses."[21] While acknowledging the fragmentary and jumbled quality of paleontological data in this way is important, there are other aspects of partiality with regard to ancestral human remains that are coming under scrutiny. The entire project of paleontology—and especially the field of paleoanthropology—is increasingly being pressured to confront its historical entanglement with Euro-modern colonialism and racism. This includes reconsideration of practices of extracting and appropriating bodily remains, the issue

16. King and Bailey, "Tectonics."
17. Trauth et al., "Human Evolution"; Maslin et al., "East African Climate Pulses."
18. King and Bailey, "Tectonics," 267. See also Clark, Gormally, and Tuffen, "Speculative Volcanology."
19. Winder et al., "Complex Topography."
20. Maslin et al., "East African Climate Pulses."
21. Trauth et al., "Human Evolution," 2982.

of erasure of Indigenous or other place-based peoples' knowledge and assistance, and broader questions about the epistemic privileging of Euro-modern ontological storytelling.[22]

We suggest, however, that paleontological and paleogeographical insights can be used more collaterally to do some unraveling of certain Western narratives from within. The combining of climatic and tectonic processes in recent evolutionary thought helps us to see the pervasiveness, indeed the ordinariness, of significant geophysical change in the drawn-out process of becoming human. Situating human history within a much deeper planetary history or paleogeography in this way foregrounds the earth's own capacity to transform and self-differentiate—to become other to itself, with or without human influence.[23]

"Though Earth seems like a solid foundation for us," reflects philosopher Todd McGowan, "it is actually even more at the whim of the violence of an identity at odds with itself than we are."[24] But the changeable planet that recent paleo stories describe does more than unsettle the foundationalism or quest for stable grounds that has been so central to modern Western thought. It also raises questions for those of us whose efforts to overcome modernity hinge on assertions of human-nonhuman interrelationality or mutual entanglement. For in their consideration of such momentous physical processes as the orbital forcing behind climate change or the inner earth dynamics that drive plate tectonics, these accounts draw our attention to differential forces that both impact humans and far exceed our reach or influence. And as we will see, this sense of the earth's own self-dividedness or noncongruity has implications for any endeavor to imagine and compose worlds in which human life is reconciled with its material environment.

Thinking through a nonunified earth, however, by no means downplays the issue of how we inherit worlds from those who come before us, and what we pass on to those who come after us. With their foregrounding of the physical challenges faced by ancestral humans, the pulsed climate variability and complex topography hypotheses also raise practical and ethical questions about how our offspring enter the world, how we care for them, and how they are conveyed through and across the earth's episodic rifting. In the following section we stay with themes of human origins but turn to theories of hominin infant care. While considering matters of intergenerational survival, we are also interested in the way that certain approaches to the evolution of childcare open up issues of human subjectivity that go beyond simply enduring variable and volatile conditions. For just as some paleo stories help us to see how the earth is constitutively fractured and self-divided, other evolutionary stories—resonating with McGowan's point—suggest that humans too may be riven and at odds all the way down.

22. Monarrez et al., "Our Past Creates Our Present." See also Hussain and Riede, "Paleoenvironmental Humanities."

23. Clark and Szerszynski, *Planetary Social Thought*, 8–9, 23–27.

24. McGowan, *Emancipation after Hegel*, 42.

### Rifts in the Self

While child raising hasn't been central to human evolutionary theories focused on climate change and active tectonics, researchers have made connections between the availability of "nesting sites" and shifting reproductive dynamics. As Winder and her colleagues observe, "The relative security offered by topographically complex environments . . . facilitate[s] the appearance of the modern human life history, with extended childhood and shorter interbirth intervals."[25] So too, they add, would fertile Rift Valley ecologies have offered high-quality nutrients for primates possessed of a growing, energy-demanding brain—a claim complicated by hypotheses that put more weight on the way climatic variability destabilizes the ecologies in question.[26] It is also worth noting that pulsed climate variability theorists are far from insistent that climatic change is always the key variable in human evolution. As Maslin and colleagues remark, "It should also be remembered that climate may not have always been the underlying cause and that intrinsic social factors may have played a significant role especially with increased encephalization."[27]

Accounting for the apparently rapid growth in hominin brain size has long posed challenges to paleo researchers. Giving birth to larger-brained, bigger-skulled babies poses what evolutionary theorists refer to as the "obstetrical dilemma" of requiring a broadening of the pelvis, which would in turn compromise bipedal locomotion.[28] This problem is usually viewed as being partially resolved through the evolution of early birth followed by a significant phase of postnatal brain and cranial development—but the resulting extended period of infant dependency in turn is seen as imposing exceptional childcare demands. Throughout much of the last century, evolutionary anthropologists—mostly men—responded to these issues by foregrounding feats of male hunters providing for pair-bonded, hearth-bound maternal child raisers. By the closing decades of the twentieth century, however, a new generation of researchers—many of whom were women—were exploring more dynamic female roles that included innovative contributions to caregiving, foraging, and infant-carrying.[29]

With its stress on "alloparenting"—collaborative and flexible infant care—the cooperative breeding hypothesis was one of the most influential approaches to emerge from this milieu. "Without alloparents," asserts Sarah Hrdy, one of the paradigm's key theorists, "there never would have been a human species."[30] But this approach also reorders the storyline of the demandingly large brain. "Creatures may not need big brains to evolve cooperative breeding, but hominins needed shared care and provisioning to evolve big brains," Hrdy observes. "Cooperative breeding had to come first."[31]

25. Winder et al., "Complex Topography," 11.
26. See Maslin et al., "East African Climate Pulses."
27. Maslin et al., "East African Climate Pulses," 14.
28. Isler and van Shaik, "How Our Ancestors."
29. See Hager, *Women in Human Evolution*.
30. Hrdy, *Mothers and Others*, 109.
31. Hrdy, *Mothers and Others*, 277.

The cooperative breeding hypothesis at once unsettles assumptions of human exceptionality and focuses on the definitive features of the hominin lineage. It has long been known that many different kinds of animals—from birds to small primates—share the nurturing of youngsters beyond biological parents.[32] Yet among the great apes, infant care is overwhelmingly performed by the mother, and collective food provisioning is exceedingly rare.[33] In this regard, hominins differ from other apes both in their routine willingness to share infant care among a range of kin or community members and in the regularity with which food is collectively distributed.[34] The combination of collective parenting and provisioning, Hrdy and others propose, made it possible for hominin mothers to bear children at shorter intervals than their great ape relatives, while also enabling the "energetically expensive" evolutionary innovation of increasing brain size.[35]

Alongside these explicitly sociobiological considerations, the cooperative breeding hypothesis draws on developmental psychology and psychoanalysis—notably the attachment theory formulated by John Bowlby in the 1960s. Already associated with key issues in evolutionary anthropology, attachment theory stresses the importance of close, affectionate infant-caregiver bonds in humans and other social primates for establishing the foundations of emotional security, while drawing attention to the lifelong repercussions of missing this developmental phase.[36] But whereas early attachment theorizing was firmly centered on maternal-infant relations, evolutionary anthropologists and psychologists with field experience of child raising in nomadic and foraging societies offered supplementary evidence of formative bonds that far exceed the mother-infant pairing or the mother-father-child unit. These insights developed into the cooperative breeding hypothesis, with its emphasis on contributions by extramaternal caretakers such as grandparents, siblings, aunts and uncles, and assorted other community members, with senior women often assuming special significance.[37]

Caregivers, however, are only part of the story. When it comes to accounting for the "runaway" development of the hominin brain and the intensive social relationships that supported this trajectory, the cooperative breeding paradigm also highlights the contribution of infants themselves. From within a few hours of birth, human babies can respond to faces, sounds, and gestures, an attribute that opens the way to a biologically exceptional acquisition of capacities to read the moods and mental states of potential caregivers and to respond accordingly. In this way, Hrdy and others contend, small humans actively solicit the care they depend on.[38] These early acquired propensities for emitting and interpreting affective signals, cooperative breeding theorists

32. Hrdy, *Mothers and Others*, 92–99, 177–80.
33. Hrdy, *Mothers and Others*, 68–71.
34. Hrdy, *Mothers and Others*, 73–82.
35. Hrdy, "Comes the Child," 89.
36. Bowlby, *Attachment*; Hrdy, *Mothers and Others*, 82–84.
37. Hrdy, *Mothers and Others*, 250–54.
38. Hrdy, *Mothers and Others*, 53–56, 285–86.

argue, are the cognitive foundations of all the other collective, intersubjective, and hypersocial capabilities that make us human—including our celebrated capacity for complex information sharing.[39] In other words, it is through their early need for care and attention that humans eventually become capable of generating symbols, telling stories, offering reasons for what they do, and collectively deciding on paths of action—or becoming what we might see as political animals.

Building on the potential pathologies identified in attachment theory, cooperative breeding researchers point out that the centrality of distributed caregiving and highly developed "other-regarding" tendencies in the hominin lifeworld has a dark side. Whereas most female primates bond quickly and inextricably to their neonates, Hrdy observes, human mothers attach more gradually and more contingently. There is, as she documents, widespread historical and transcultural evidence that mothers who feel that they lack alloparental support have a high likelihood of abandoning their newborn infants.[40] More generally, Hrdy proposes, the flip side of the fundamental fungibility of hominin childcare is the omnipresent danger of failing to assemble or sustain adequate caregiving networks. In sum, cooperative breeding may have turned out well for the lineage that ended up as *Homo sapiens*, but it's a fraught and risky strategy.[41]

As we begin to consider the possible contemporary relevance of the cooperative breeding hypothesis, it's important to recall the long-standing resistance to sociobiological approaches from critical scholars based in both the humanities and natural sciences. From the time of Edward O. Wilson's formulation of the field in the mid-1970s, sociobiology has been vociferously denounced for its genetic determinism and more general reductionism.[42] Writing some three decades ago, science studies scholar Donna Haraway raised concerns about the way Hrdy's work, in linking certain reproductive strategies to evolutionary success, served to naturalize liberal ideologies of an "investing strategic self"[43]—an argument linked to her broader insistence on the drawbacks of any knowledge claim that failed to recognize its own situatedness and partiality.[44]

Haraway also noted the deconstructive potential of Hrdy's "sociobiological feminism," with special emphasis on her foregrounding of female proactive sexuality and collective agency.[45] Subsequently, critical social thinkers have acknowledged that sociobiology has moved on from its early manifestations, with Hrdy's contribution featuring prominently in recent reappraisals.[46] In important respects Hrdy's later work actually

39. Hrdy, *Mothers and Others*, 37–38; Burkart, Hrdy, and Van Schaik, "Cooperative Breeding."

40. Hrdy, *Mother Nature*, 288–317. See also Boswell, *Kindness of Strangers*; Scheper-Hughes, *Death without Weeping*.

41. Hrdy, *Mothers and Others*, 29.

42. Power, "Sociobiology."

43. Haraway, *Primate Visions*, 1021.

44. Haraway, "Situated Knowledges." Marshall Sahlins earlier advanced a similar critique of sociobiology, observing, "The characteristic adoption by sociobiologists of an economic discourse suggests (an) ethnocentric problem." See Sahlins, *Use and Abuse of Biology*, 55.

45. Haraway, *Primate Visions*, 1046, 1022.

46. See Power, "Sociobiology."

appears more willing to weave together somatic, psychic, and sociocultural factors than much related humanities scholarship, though questions remain about the tendency of her version of evolutionary anthropology to ultimately take survival or adaptive utility as the definitive measure of the human or other species.[47]

In this light—and noting the prominence of psychology in the collective breeding hypothesis—we should be alert to the break psychoanalytic thought made with final causes all the way back with Freud. As McGowan elaborates, "The dominance of the final cause over our thinking . . . obstruct[s] our ability to grasp what we might call the immanent cause, the cause that inheres in an action done for its own sake rather than for a larger purpose."[48] At the core of the psychoanalytic tradition is the idea that behind the motivations we consciously believe to be directing our actions is a set of unconscious desires. The things, objects, or attachments we desire are all attempts to overcome a deep sense of loss arising out of human infant experience—which in the Freudian tradition revolves around some variation on the theme of a traumatic, erotically tinged rupture of a self from an encompassing object world. What makes all this complicated, psychoanalytic theory contends, is that we were never in possession of what we unconsciously feel we have lost.[49] By this reasoning, much of the worldly striving of the burgeoning human subject—forming an identity, seeking to belong, looking for love—is bound up with restoring an original unity or wholeness that never actually existed.

What we might take from these theories with regard to the collective breeding hypothesis is a sense that even when a young or grown-up hominin finds the rich tangle of attachments they desire, the originary tensions or ruptures within the self are never fully overcome. There is an otherness, a self-division within the subject, psychoanalytic thought insists, that continues to perturb all our affective and practical efforts. In this way, "objects of desire," as Edelman puts it, "crack you open"—they return us again and again to the rifts or nonrelations at the core of our being.[50] But we should also keep in mind that the Western psychoanalytic tradition has its own issues about cultural-historical specificity to attend to and that many of its core concerns and principles preceded the evolutionary and ethnographic insights that Hrdy and others bring to the field. While theorists of psychic and affective relations speak of "primal abandonment" as an unconscious, phantasmic experience,[51] collective breeding theorists propose that being abandoned is a palpable, physical risk for hominin neonates. And where contemporary psychoanalytic thinkers talk of misrecognition and thwarted intimacy as an inevitable accompaniment of social relating, Hrdy and her colleagues flag up how these have historically been matters of life or death.

47. See Laracy, "Hrdy's Evolutionary Model."
48. McGowan, *Enjoying What We Don't Have*, 152.
49. McGowan, *Enjoying What We Don't Have*, 26–29, 145–46.
50. Berlant and Edelman, *Sex*, 13.
51. Berlant and Edelman, *Sex*, 92.

Just as the complex topography and pulsed climate variability hypotheses point to the contingency of the early hominin physical world, the cooperative breeding hypothesis highlights the conditionality and precariousness of human intergenerational care. While the focus of evolutionary theory on climatic-tectonic factors draws attention to the rift running through the ancient human lifeworld, thinking through the collaborative child-raising paradigm and its psychoanalytic counterparts diagnoses a self-divisive crack running through the human subject. In the final section we sketch out some possible synergies between these two sets of theories and begin to ask what such an encounter might have to offer to the intergenerational psychic, affective, and sociopolitical challenges posed by the contemporary planetary predicament.

### Love Will Tear Us Apart

The human evolutionary theories we have been looking at work from within particular knowledge formations to compose paleo stories applicable to all of humanity. In the process, however, both sets of approaches take into consideration multiple hominin species that tend to be excluded from ostensibly more onto-epistemically inclusive critical social thinking about humanness. And despite a certain univocal mode of inquiry, we argue, they do useful work in complicating their own broader disciplinary atmospheres of understanding humans and the planet. We suggest that by helping disclose deep, insuperable rifts running through both the human subject and its planetary home, the pulsed climate variability, complex topography, and cooperative breeding hypotheses can speak to the emergent crisis of human intergenerational relations—without pointing to resolutions or reparation. In this final section, we tentatively identify three main ways these paleo stories could contribute to understandings of the current conjuncture, and the human condition more generally.

First, in conversation with other psychoanalytic schools, the cooperative breeding hypothesis offers insights—which supplement more familiar ideological explanations—as to why concern over the fate of younger or unborn generations is not necessarily translated into appropriate actions and may be diverted into activities that worsen the problem. While the evolutionary perspective of the cooperative breeding paradigm drives home the depth of the human yearning for attachment and the precariousness of achieved bonds, psychoanalytic thought discloses the impossibility of ever attaining full and unconditional connection. More than this, psychoanalysis shows how, in seeking to close unbridgeable gaps, human subjects compulsively return to the imaginary scene of loss—leading us to repeat the very actions that threaten to undo us.[52] Understanding this scenario, albeit in obscure and troubling ways, can help us to grasp how the very desire to protect those we are most attached to is often displaced into deeds that ultimately exacerbate the danger. And just as caring or desirous attempts to repair rifts between people may deepen these very divisions,[53] we would add, so too

52. McGowan, *Enjoying What We Don't Have*, 13; Berlant and Edelman, *Sex*, 6.

53. Berlant, *Desire/Love*, 105.

can well-intentioned attempts to identify or reconcile with nature lead to dangerous oversights—especially in relation to the rifts, ruptures, and discontinuities within the earth itself.

While the preceding point is largely in keeping with familiar psychoanalytic insights, our second point swerves in a different direction. We've already touched on critiques of sociobiology that caution against equating liberal Western values with supposed biological truths. So too should we heed charges that the "universal liberal human project" has frequently been wielded to brutalize and demean those peoples viewed as falling short of full humanity.[54] But there is an intriguing sense in which the cooperative breeding paradigm inverts this logic. Hrdy argues that child raising in late eighteenth- to early nineteenth-century Europe qualifies as one of the most pathological deviations from the three-to-four-million-year history of hominin childcare. Not only had infant abandonment in European cities reached epidemic proportions by the latter eighteenth century, she observes, but the widespread practice of dispatching newborns to rural wet nurses results in the antithesis of the distributed, richly affective bonds necessary to raise emotionally literate, "other-regarding" human beings.[55] While Western child raising may have moved on from that nadir, this line of critique points to the problem that key modern institutions—including those that are conspicuously failing to deal with the current global environmental predicament—were forged or finessed at a historical low-water mark of empathic socialization.

But we should also consider Hrdy's claim that childhood security, trust, and other-regarding tendencies overflow what we in the West would see as the social sphere. "Infants nurtured by multiple caretakers grow up not only feeling secure but with better-developed and more enhanced capacities to view the world from multiple perspectives," she notes.[56] If, as Hrdy adds, such children "tend to share a view of their physical environment as a 'giving' place,"[57] we might also imagine them to be far more able to accommodate themselves to jolts, shifts, and upheavals in their material world—an orientation that would come as no surprise to many Indigenous peoples. The implication, in short, is that a globalizing modernity imprinted with deep traces of thwarted affective aptitude provides an exceptionally problematic platform for responding generously and generatively to worldly uncertainty.

Yet if we are to think about modernity as, in some ways, an unfortunate swerve away from longer-standing human capabilities, orientations, and experiences, we need to be wary of simply affirming the survival capacities of our deep ancestors—which leads to our final summative point. In the previous section, we acknowledged the criticism of some versions of evolutionary anthropology for reducing human intersubjective and

54. Jackson, *Becoming Human*, 28.
55. Hrdy, *Mother Nature*, 288–380.
56. Hrdy, *Mothers and Others*, 32.
57. Hrdy, *Mothers and Others*, 133.

practical capabilities to matters of adaptive utility. In this regard, Edelman's warning about shaping our politics around the image of "the Child" as the bearer of futurity feels relevant for any imaginative bridging between the evolutionary past and the crisis-ridden present.[58] By elevating the survival of the Child to the ultimate value of human existence, he argues, we justify the sacrifice of our present pleasures and possibilities and, in so doing, bind ourselves to the repetition of loss and self-denial that psychoanalytic thought presents to us. And in this way, insists Edelman, we end up ensuring that "the future is mere repetition and just as lethal as the past."[59]

While Edelman's dismantling of heteronormative "reproductive futurism" may not directly evoke environmental crises, it helps us to see how the endangering of generations-to-come might actually be less a matter of callousness than of compulsive overinvestment in the child figure.[60] But it is here that we should step back and reconsider some of the potential that rumbles away beneath the surface of the paleo stories we have been addressing. For if we divest the cooperative breeding paradigm of its lingering traces of adaptive utility, what we are left with is an affirmation of aimless affection and sensuality—though with an inescapable dimension of risk and precariousness that is as important to the story as successful attachment is. For it is not simply that tending to children is decentered from the mother-infant dyad or the family unit but that child-carer relations appear as part of a much broader continuum of unmasterable intimacy and pleasurable experiences.[61]

What, then, might viewing ourselves and our world through a paleogeographic or paleoenvironmental humanities lens mean for engaging with the current, anthropogenically triggered planetary predicament?[62] It's worth emphasizing that the idea of inherently rifted social beings encountering an inescapably fractured physical existence is less an insistence on the separation of humans from nature as a reminder that both sides of this equation share a fundamental incompleteness and disunity. With any deep dive into human evolution, and especially with a retelling of paleo stories that foreground the achievement of surviving tumultuous environmental change, there is always the risk of romanticization or overdramatization of "our" deep past. The impression we would rather convey by stretching out our temporal horizons, however, is that of the profound ordinariness, in both human and planetary terms, of finding ourselves obliged to negotiate noncoincidence, rupture, and excess.

In no way does thinking of this condition as ordinary and interminable excuse those social forces that are currently gouging these rifts deeper, removing the safety

58. See Edelman, *No Future*.

59. Edelman, *No Future*, 31. It's worth noting that, while sharing deep misgivings over the "culture of the child," José Muñoz responds to Edelman's position by offering a more optimistic account of forward-looking temporization—or what he refers to as "queer futurity." *Cruising Utopia*, 22, 49.

60. See also McGowan, *Enjoying What We Don't Have*, 41–42; Sheldon, *Child to Come*.

61. See Berlant and Edelman, *Sex*, 122.

62. See also Hussain and Riede's wide-ranging response to this question in "Paleoenvironmental Humanities."

nets and supports that human collectives erected to buffer themselves, and eroding the redundancy or superfluity that more-than-human life draws on when it is under pressure. By the same token, conceiving of an earth-oriented politics or praxis that loosens up on the vision of fully resolving the ontological rifts of society or planet by no means rules out the possibility of collective activity that seeks to improve our ability to endure or even flourish amid the out-of-jointness of existence. Indeed, it ought to make space for what cultural theorist Lauren Berlant tentatively describes as "the capacity to make new settings for occupying the irreparable rivenness of subjects and worlds":[63] a summons and invitation to the kind of modest worldbuilding that views relations as shot through with nonrelations, interconnectivity as coursing with disjuncture.

Neither the offloading of responsibility to deal with anthropogenic planetary degradation onto coming generations nor the kindred elevation of children into futurity's last hope seem like promising scene-settings for confronting the primal dividedness of both self and world. But hominin child-raising paleo stories do provide hints that infants and adults are capable of building attachments that, however provisional they may be, have helped humans live with and through earthly volatility. So we might be forgiven for taking solace from the fact that our branch of the human family has made it through a great many mundane wrenchings and ruptures of the earth. Just as importantly, though, we should be mindful that this living on may have been little more than a fortuitous side-effect of acts that provided enthrallment and joy in and of themselves.

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63. Berlant and Edelman, *Sex*, 111.

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