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Graphic Capitaloscenes: Drawing Infrastructure as Historical Form

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ABSTRACT

This article describes "graphic Capitaloscenes" – narrative moments in which graphic novels draw infrastructure as a material expression of capitalism's historical development. Drawing on work that has described graphic narrative as both an "infrastructural" and "scenographic" form, it contends that graphic novels are particularly adept at *representing* infrastructure as historical *content* while themselves *materializing* that historical infrastructure on the page. Bringing this to bear on visual texts concerned with capitalism's frontier zones, this article suggests that graphic novels are therefore not only able to stage extractive infrastructures as historical forms, but that they are also themselves formally conjoined to the current historical moment of the Capitalocene. The article offers two case studies in support of its argument, each of which revolves around the extraction of fossil fuels: Joe Sacco's *Paying the Land* (2020) and Pablo Fajardo's *Crude, A Memoir* (2021). In each of its readings, the article shows how these comics are able to stage infrastructure as historical form, while at the same time bringing into view anti-colonial and anti-capitalist relations that offer a counterpoint to the accumulative relationships of the Capitalocene.

Introduction

We live in the age of the Capitalocene, a geo-historical era "shaped by relations privileging the endless accumulation of capital" (Moore, *Capitalism in the Web of Life* 173). Infrastructure is an expression of these relations of accumulation, opening up frontiers for resource extraction by partitioning humans from "Nature," which is capitalized to illustrate its abstraction into an object of plunder. As Jason Moore argues, this hegemonic way of seeing the world deliberately occludes the processes by which humans, infrastructures, and their environments co-constitute one another in the web of life. For Moore, the web of life refuses the abstraction of humans from "Nature" and instead signifies "nature as a whole: *nature* with an emphatically lowercase *n* . . . nature as us, as inside us, as around us . . . nature as a flow of flows" (Moore, *Capitalism in the Web of Life* 3). By bringing this conceptualization to bear on our built environment, we can move away from notions of infrastructure as abstract lines fixed in static planes of time and space, and toward a more dynamic view of infrastructure as a set of relations operating in a systemic field of flows. This shift in perspective has political stakes. Reading infrastructure in and through the Capitalocene allows us to bring insurgent infrastructural arrangements into view.

Learning how to read infrastructure in this way requires training and visual assistance. In this article, I suggest that graphic narratives are up to the challenge. I develop the phrase "graphic Capitaloscenes" to describe the way in which comics, as visual-narrative systems, help us to understand the dynamic historicity of infrastructure and its imbrication in the spatio-temporal fabric of the

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web of life. After two sections, the first contextual and the second theoretical, I ground my argument in two recent graphic narratives that portray infrastructures of accumulation in historic and contemporary resource frontiers: Joe Sacco's *Paying the Land* (2020), which documents the consequences of fracking and settler colonialism in Canada's Northwest Territories for the Indigenous Dene people who live there, and Pablo Fajardo's *Crude, A Memoir* (2021), which tells the story of an historic lawsuit brought against Texaco for their pollution of Ecuadorian Amazon. While one is marketed as documentary and another as memoir, I read these graphic books together as contemporary *fictional* compositions, or anti-novels, that work to historicize infrastructure precisely because they operate – like infrastructure itself – as narrative systems. But first, to grasp the insurgent potential of this process, we must consider why infrastructure has been tended to be represented as a "fixed" rather than a historical form.

Unfixing Infrastructure

Infrastructure is fixed capital. This is not capital's preferred *modus operandi*. Profits are more easily extracted and accumulated when capital is mobile in space and time. Nonetheless, at key points in its historical development, sinking capital into infrastructure is necessary to keep the show on the road – or indeed, to build the road itself. In such moments, while requiring delayed turnover times that place limits on accumulation, there is a recognition among investors that fixed capital may eventually increase productivity and profits in the longer term (see Harvey 204–238; Marx 734). When the market fails to develop the infrastructure capital needs to reproduce itself, historically the state has stepped in. Indeed, for many, this was always the *raison d'être* of the modern nation-state. In *The Wealth of Nations*, even Adam Smith, advocate of "the invisible hand," conceded that a sovereign body was required to build the roads and canals needed to sustain Britain's economic growth. For Smith, such investments should be limited to mere compensations of market failure, developing infrastructure for expanding growth and increasing the wealth of the nation through commerce, but offering little else (Smith 310–347).

Because investments in infrastructure are usually recouped long after it has been built, it is in capital's interest to frame fixed infrastructure as exactly that – "fixed," somehow outside of history and separate from the relations of accumulation that operate through the web of life. This is why *spatial* representations of infrastructure have evolved coterminously with the development of infrastructure itself. Cartographic practices in settler colonies around the world were technological precedents to the subsequent infrastructural redevelopment of those lands in the interests of accumulation. Maps allowed colonists to transform the terrain into abstract "Nature," emptying it of its inhabitants and erasing its existing topographies. While this primed land for exploitation and settlement, the subsequent mapping of infrastructural expansion in turn confirmed narratives of colonial supremacy and conquest (see, for example, Bhandar, Davies *Imperial Infrastructure & Spatial Resistance in Colonial Literature*, Huggan). Drawing infrastructure as a purely spatial, ahistorical form therefore worked to *deepen* the apparent fixity of capitalist infrastructures. Railways, roads, and more recently pipelines may have facilitated the "annihilation of space by time" (Marx 524), but as countless colonial maps of settler territories and contemporary maps of resource frontiers demonstrate, "Nature," represented as empty *space*, continues to exist beyond and between infrastructure's fixed lines. Any understanding of the spatio-temporal *historicity* of infrastructure and its historical development in the web of life is occluded by such representations.

This is important if we agree that the future of life on Earth depends on urgently resisting infrastructures and relations of accumulation by, for instance, limiting the extraction and consumption of fossil fuels. Thinking an insurgent infrastructure that orients away from this reliance first requires that we grasp infrastructure itself as a process that *produces* historical space-time, rather than a fixed feature running through abstract landscapes. This does not mean simply swapping spatial with temporal modes of representation. As Doreen Massey argued some time ago, Newtonian physics might be "still perfectly adequate for building a bridge," but thinking of infrastructure as "linear

process counterposed to flat surface" erases its variously destructive or insurgent qualities. "Space is not static, nor time spaceless," Massey continues: "spatiality and temporality are different from each other but neither can be conceptualized as the absence of the other" (Massey 263–264). We need to visualize the historicity of infrastructure in the web of life. Only that way will we grasp how infrastructure transforms the time-space relativities of the societies and environments through which it passes and in which it is built.

Grasping this quantum view of infrastructure has political stakes. As Andreas Malm reports, in 2018 two-thirds of the world's energy capital was fixed into fossil infrastructures such as drills, wells, rigs, and mines. It is in the interests of the governments and corporations that invested this capital that our view of infrastructure also remains "fixed" and narrowly confined. For their investors, these fossil infrastructures must still be operational in 2060 if they are to yield worthwhile and profitable returns: from capital's point of view, these infrastructures need to stay *fixed* in space, for a *fixed* duration of time. Yet if they do, they commit us to the environmental consequences of emissions accumulated not only in the present and the past, but for another four decades into the future as well. While a list of the consequences of these cumulative emissions is beyond the scope of this article, there exists an abundance of evidence that proves these infrastructures threaten the integrity of the web of life and the future of a habitable earth (see, for example, Wallace-Wells). Behind the obvious solution to stop fixing capital into fossil infrastructures *right now*, there resides a more complex question: how might we unsettle infrastructure's spatial fixity and bring its historical form into view?

Graphic Capitaloscenes

While developing scholarship in the environmental humanities has responded to this question in diverse and exciting ways (see Craps & Crownshaw eds., Caracciolo, DeLoughrey, Deckard), this article focuses on graphic narratives or comics – I will use the two terms interchangeably – as a historical and cultural form. Before turning to specific examples, I will first highlight three features of graphic narrative that allows it to draw out infrastructure's historical form at the systemic scale of the Capitalocene. Outlining these will also allow me to explain what is meant by the phrase in the title of this essay: "graphic Capitaloscenes."

First, graphic narrative's composition from sequentially arranged visual images makes it especially adept a representing infrastructure in its brute, physical form. Where textual forms like the novel are mostly confined to the cause-and-effect sequencing of linear syntax, the graphic novel has a scalar agility that allows it to move between terrestrial and cartographic viewpoints, drawing complex infrastructural arrangements into view. This is especially evident in the longstanding historical relationship between comics and the city (Fraser), which runs from the late nineteenth century, when the first strips were circulated through the city in urban newspapers (Ahrens & Meteling eds.), to the second half of the twentieth century, when the booming superhero genre saw characters slinging between buildings and delving into sewers (Hassler-Forest), to graphic narratives by artists in cities of the global South today, where the form is used to contest infrastructural violence, creative destruction and displacement, and aggressive neoliberal reforms (Davies *Urban Comics: Infrastructure & the Global City in Contemporary Graphic*). Graphic narrative is not only *drawn* to the increasing infrastructural complexity of the modern world, but has evolved in historical lock-step with it as well. If infrastructure is the physical manifestation of capital's long-term restructuring of the environment, then comics too have registered this restructuring, not only in their content, but in the historicity of their form.

Second, and relatedly, while graphic narrative is so-described because it juxtaposes multiple graphics into narrative sequence, it is equally *graphic* about its own narrative infrastructure. Comics pages are not only composed from sequential images, but also the spaces in between. These gaps are known to comics critics as "gutters," a decidedly infrastructural term, one that comes as part of a broader vocabulary that is used to describe the visible narrative infrastructure of the comics page: borders, panels, frames, captions, word balloons, splashes, and even pages themselves. Formally,

comics are both narratives *and* meta-narratives at the same time, communicating a story while also revealing the infrastructural systems necessary for that story to make sense. It is for this reason that the question of graphic narrative's status as fiction or nonfiction has been a point of ongoing debate among comics scholars. For instance, Jörn Ahrens contends that "comics do not make a distinction between fictional and non-fictional content," a flexibility that does not deter from but actually enhances their ability to create compelling narratives around instances of infrastructural violence (Ahrens). Some have claimed that this position confuses fiction with fictionalization, arguing that while graphic documentaries and memoirs engage in processes of fictionalization, they do so without "inventing stories" as such (see Schmid 52). In my own view, as I have written elsewhere and as I argue here, placing a critical emphasis on comics – including graphic documentaries and memoirs – as fictional compositions allows us to move away from questions of their performed "authenticity" and toward a deeper apprehension of their ability to represent complex distributions of power (Davies "Intolerable Fictions"). As simultaneously fictional compositions and reflections on that compositional process, this article proceeds on the premise graphic narratives can and should be read as double-edged contemporary fictions that allow readers to reflect on both text and context at once.

It is this formal ability to move between text and context that connects graphic narratives to the recent "infrastructural turn" in the social sciences (see, for example, Star, Graham & Marvin, Anand et al.). Attending to the infrastructures that usually remain concealed or removed from view, yet which are instrumental in the reproduction of capitalism, has allowed social scientists to describe the way systemic forces impinge upon a range of social, political, economic, and environmental relations. The processes of reading for infrastructure in the world and the reading of graphic narratives on the page is formally homologous, not only insofar as they have the same structural features and internal relations, but also because these features and relations are the product of the same historical forces as well. When graphic narratives turn to questions of infrastructure development, these homologies overlap, inviting us to see how infrastructure opens up particular relationships and possibilities while closing others down.

Critics have written of the homologous connections between the infrastructural form of graphic narrative and the landscapes they represent. Here is André Suhr on the French cartoonist Marc-Antoine Mathieu's sequential artwork:

> [The] grid of streets and blocks closely resembles a comics page consisting of panels in their grid of blank space, thus stressing the analogy between comics and the city in their respective rational organisation … Windows, openings, doorways, street entrances – they all frame our view, putting things into the picture and others out of it, just as comics' frames do … At night, the illuminated windows of an apartment block show scenes and situations in a frame, fixed in the building's dark grid – just like panels on a comic's page. (Suhr 237–242)

Though Suhr does not pursue it, there is an implied acknowledgment here of both infrastructure's organizing lines – frames, doorways, roads – *and* the reliable energy flows that are vital to the modernist experience of uninterrupted space-time. As critics have pointed out, we only tend to notice our energy infrastructures when they fail or break down, as they do in power cuts or rolling blackouts (Graham ed.). But in both a metaphoric and formal sense, all graphic narratives are rolling blackouts – that is, in order to generate the power to shine light on some scenes, they must remove others from view (see Glidden). Film, perhaps the quintessential modernist form, can create the illusion of seamless narrative action, showing twenty-four frames per second and overlaying each of these frames on top of one another in what appears as an uninterrupted stream. But comics must space these frames out side by side on the page, so that if we had twenty-four such frames for every second of narrative action, we would have a very large and tedious graphic novel. As comics critics have argued (McCloud 7–8), time *is* space in comics, and space is also time. Comics must therefore always leave some action in the dark, forcing readers to shift perpetually between the narrative action (shown in the panel) and the infrastructure that makes that action possible (the gutter): we read *with* the rolling blackout. Though we are unable to see the totality of the grid at any one time, comics never allow us to forget that infrastructure is out there, determining the action currently in view.

This "infrastructural form," as I have described it elsewhere (2019), makes comics not only adept at narrativising infrastructure as spatio-temporal force, but also turns them toward the concerns of the epoch known to geologists – as well as many literary and cultural critics – as the Anthropocene. In one of the best known literary studies, *The Great Derangement*, Amitav Ghosh suggests that the realist novel is not *formally* capable of narrating the scale of the climate crisis. He writes:

> In essence, narrative proceeds by linking together moments and scenes that are in some way distinctive or different: these are, of course, nothing other than instances of exception.
>
> Novels too proceed in this fashion, but what is distinctive about the form is precisely the concealment of those exceptional moments that serve as the motor of the narrative . . . It is thus that the novel takes its modern form. (Ghosh 17)

A form that emerged historically to imitate (and thus to reassure) the smooth experience of bourgeois life (see Moretti), the novel sets about concealing its narrative infrastructure, just as it so often conceals from view the infrastructures of energy extraction and circulation that make its comfortable middle-class content possible. Edward Said's well-known contrapuntal reading of Jane Austen's *Mansfield Park*, which turns the novel upside down to show how the eponymous estate is reliant on slave plantations in Antigua, critiques this formal concealment (Said 80–97). As Said shows, while such infrastructures and their accumulation of wealth may be hidden by the formal apparatus of novel, they nonetheless remain "the *motor* of the narrative" (to borrow Ghosh's energetic phrase), producing the world that the novel's characters inhabit even as they remain obscured from the reader's view.

For Ghosh, it is the smoothing over of its own infrastructure that has made it formally difficult for the "serious" realist novel to narrativise the more-than-human scales of the Anthropocene. But as we have seen, where the novel deliberately conceals its narrative infrastructures, the *graphic* novel wears them on its sleeve (see Menga and Davies, 667–668). Where the novel renders infrastructure – at the levels of both content and form – as a purely spatial and therefore ahistorical background, the graphic novel overtly builds infrastructure into its narrative time. In this sense, the graphic novel is a kind of anti-novel, at once a fictional narrative and a meta-fictional reflection on that narrative's development. As a consequence, it narrates infrastructure as deeply historical and visibly historicized, conjoining space with time in the form of the page. In a passing comment, Ghosh suggests that growing awareness of human-induced climate change and the rise of the graphic novel might be historically connected: "if it is the case that the last, but perhaps most intransigent way the Anthropocene resists literary fiction lies ultimately in its resistance to language itself, then it would seem to follow that new, hybrid forms will emerge" (Ghosh 84). As I am suggesting here, Ghosh's hunch rests on deeply conjoined formal and historical ground.

This brings us to the third and final reason why graphic narrative is able to draw infrastructure as historical form. In her reflections on the environmental graphic novel, Laura Perry coins the neologism "Anthroposcenes" to describe graphic narrative's ability to narrate connections between human and planetary timescales. This is achieved through comics' narrative infrastructure, and especially the gutter, which invites readers to draw cause-and-effect sequences between multi-scalar scenes that the formal apparatus of the realist novel or film would not be able to sustain. As Perry argues, thus "does the Anthropocene become evident in the graphic novel by way of a formal structure that resists straightforward, linear time, and emphasizes accumulation and rupture" (9). A necessarily "scenographic" form (D'Arcy), graphic narrative permits a rare spatial view on the confusing and contorting temporalities that so many critics have associated with the Anthropocene.

Yet I argue here that it is necessary to develop this notion of Anthroposcenes toward the more particular idea of graphic Capitaloscenes. Criticisms of the Anthropocene as a conceptual term include its homogenization of a deeply fractured and unequal "humanity" into a single actor, as well as its tendency to push us away from political democracy and toward a managerialist technocracy of authoritarian experts (see Davies *The Birth of the Anthropocene*, 52–53). When applied to graphic narrative, the same conceptual shortcomings are transferred into our analytical frame. Working with

Anthroposcenes gives a helpful sense of the connection between singular human actions and singular climatic events, expanding our ability to see relationships across larger scales of space and time. But these connections also remain confined to unidirectional sequences of cause and effect. By repeating "a long-held Cartesian principle, privileging substances over relations" (Moore, "The Capitalocene, Part I" 607), all we have done is replace a model of infrastructure's spatial fixity with an equally fixed temporal one – exactly what Massey cautions against. Perry gestures to relations of "accumulation and rupture," and bringing these into view is clearly part of her aim. However, the turn to Capitaloscenes that I'm suggesting here more emphatically reads infrastructure *as* relations of accumulation *within* the web of life. As Moore contends, infrastructure is not unidirectional but systemic: humans may make environments with infrastructure, but those environments also make humans – and our infrastructures – as well (Moore, *Capitalism in the Web of Life* 3).

The concept of Anthroposcenes misses this dialectical understanding of infrastructure as producer *and* product of the environment. By looking at graphic narrative through the rubric of the Capitalocene, which recognizes how "capitalism is co-produced by and within the web of life at every turn" (Moore, "The Capitalocene, Part I" 607), we can begin to grasp the full depth of infrastructure as historical form. Rather than focusing on graphic narrative's ability to simply narrate connections between human and non-human scales, the notion of graphic Capitaloscenes takes our view a step further, grasping the way in which a comic's narrative infrastructure produces meaning as a systemic whole. As Thierry Groensteen has argued, graphic narrative is comprised of a "spatio-topical system" that builds meaning not sequentially but through the entirety of inter-relations connecting its different parts: it is "an art of conjunction, of repetition, of linking together" (Groensteen *The System of Comics*, 22). This shift from a sequential to systemic reading of the comic's page is formally homologous to the shift from the Anthropocene to the Capitalocene as a category of analysis. It shifts our attention away from infrastructure as abstract lines joining together geographically disparate spaces and toward the historicity of that infrastructure as a force that is imbricated in the web of life. By mobilizing their own narrative infrastructures within a systemic field of mutually interacting pressures and flows, graphic Capitaloscenes train us to read *actual* infrastructures for the historicity of their form.

Again, there are political stakes in this point of view. For as the examples below demonstrate, it is by moving our attention away from infrastructures as fixed objects, and toward the historical relationships they express, that we can begin to apprehend graphic narrative's depiction of potentially insurgent infrastructural arrangements. These insurgent infrastructures do not exist in isolation, or on their own terms. As these graphic narratives show, they are composed from the anti-colonial and anti-capitalist relations that are themselves galvanized and mobilized *as part of* capital's restructuring of the web of life toward relations of accumulation. This is the affordance of graphic Capitaloscenes, and it is to our examples that we now turn.

Joe Sacco's *Paying the Land* (2020)

Joe Sacco is a deservedly canonized and critically celebrated comics artist. He is the author of several book-length graphic narratives that cover situations as varied as the Israeli occupation of Palestine, ethnic violence during the Yugoslav wars, and economic decline in the US. Yet they all share a thematic interest in the documentation and representation of stories from communities who are both imprisoned within and subject to the violence of capitalist underdevelopment, whether through militarized infrastructures of occupation or extractive infrastructures of accumulation. Sacco's most recent book, *Paying the Land*, is particularly interested in the second of these. It describes the socioeconomic tensions between the fracking industry's appetite for oil and gas in Canada's Northwest Territories on the one hand, and the land claims and ancient cultures of the Dene, an Indigenous group who have been steadily dispossessed of their territories by the settler colonial state, on the other. Sacco draws this disruptive entanglement of Dene social relations with fossil

infrastructures in his iconic style, moving from claustrophobic sequences in which gutters and borders clutter the page to large, open splash images that afford the reader moments of reflection and pause.

Paying the Land takes its title from the Dene's cultural practice of respect for the environment, which commits to "treat it gently, not dig holes or make too much of a disturbance" (Sacco 49–50). Throughout the book, Sacco invites us to read the narrative infrastructure of his comic, which he uses to organize and arrange the testimonies of key figures in the Dene community into a narrative sequence, as a formal extension of the settler and fossil infrastructures that have broken apart the Dene's environmentally sustainable relationship with the land. As he reflects at one point, "what's the difference between me and oil company? We've both come here to extract something" (107). Sacco encourages the reader to reflect on the extractive nature of his own graphic narrative – he has after all packaged up and resold the Dene's testimonies as a commodity on the literary marketplace. *Paying the Land* therefore compels us not only to pay attention to the Dene stories of violence and trauma at the hands of settler colonial institutions such as the residential school system, although certainly those are placed center-stage. In addition, we are required to attend to the way in which those stories are framed, contained, and most importantly, produced as narrative fictions by the infrastructure of the comics page.

Indexed in the infrastructure of Sacco's panel borders, then, are a set of relations – between the Dene and their land, on the one side, and the gaze of both Sacco and his reader, on the other. As the comic itself points out, these relations are predicated on accumulation. The reader is forced to acknowledge the bleed between the comic's formal infrastructure – its gutters, grids, panels, and frames – and the repeated depiction of fossil infrastructures such as fracking equipment and pipelines *within* these frames. Sacco does not present these infrastructures as ahistorical lines extending through abstract space, as they are on the settler state's early maps of the Northwest Territories or oil companies' maps of resource frontiers. On the contrary, Sacco draws infrastructure as a deeply historical form that infiltrates the web of life with relations of accumulation – relations that nonetheless are *also* contested by the Dene's contrasting relations of environmental stewardship, reciprocity, and care.

Consider the second chapter of *Paying the Land*, in which Sacco begins his journey to the remote Northwestern Territories along a penetrative infrastructural line. This line is the "winter road," a perilous route "north along the Mackenzie River Valley to places that are accessible to wheeled vehicles only when the ground is completely frozen over" (Sacco 27, see Figure 1). Sacco accompanies these words with a small panel containing a map of the territory. The map shows the road as an uninterrupted line running through a surrounding landscape that, aside from a few place names, is abstracted of topographical detail. It depicts the infrastructure as spatially fixed, merely overlaying the environment through which it moves. Yet this small segment of map floats next to another small panel, showing Joe and his guide, Shauna, sitting in the front of their car, with Joe peering at the map in his hands. When we read for the relationship between these two panels, which are separated but also connected by the borders that line their outer rims, it becomes clear that the section of map in the righthand panel is what Joe himself is sees in the lefthand one. We are not gazing here on a map that is abstracted from the world, but at a document that is materially embedded in the narrative infrastructure of the page. Moreover, both of these panels themselves hover over two situated views of the actual road. The upper image is drawn at the level of the road itself, while the lower one takes a panoramic shot, drawn from a slightly elevated perspective. In both of these scenes, the road is not apart from, but folded into the landscape through which it moves. In the upper shot, the snow has consumed the gravel road and removed it entirely from view. In the lower one, the road winds away until it becomes almost indistinguishable from the surrounding hills. This bleed between the road and the surrounding landscape is accentuated by Sacco's decision to draw these images as bleeds – that is, as images that run to the edge of the page, devoid of the framing narrative infrastructure that might otherwise be used to demarcate and contain them.

Just a few pages later, as the journey up the winter road continues, Sacco uses a similar page layout, although this time his floating panel shows an abstract diagram of the fracking process (33,

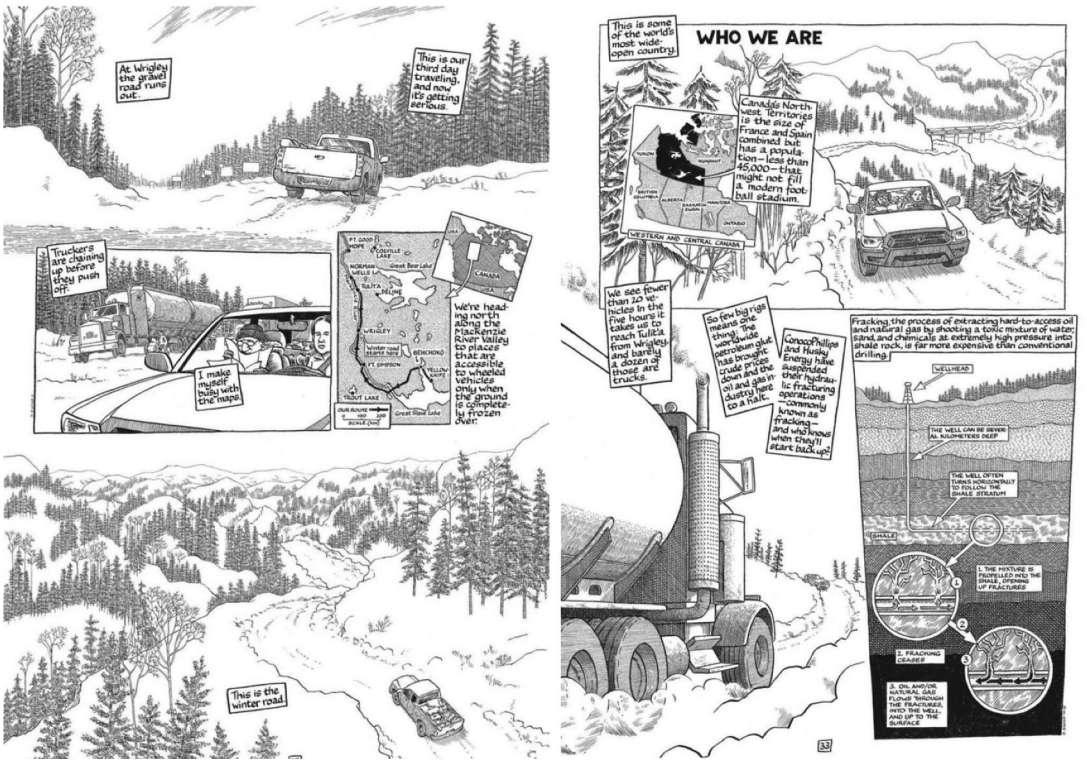

Figure 1. Two pages from the second chapter of *Paying the Land* (Sacco 27, 33). Reproduced with the permission of the publisher.

see Figure 1). Drawn from the side, it shows the chute running down from the wellhead through layers of rock until it hits the shale stratum, at which point it makes a perpendicular turn and the fracking begins. As Sacco explains, "a toxic mixture of water, sand, and chemicals . . . is propelled into the shale, opening up fractures" (33) through which the oil and natural gas then flow. The infrastructural line takes on a very specific form in this diagram. It begins by penetrating the territory before breaking out into web-like cracks that fracture and fragment the land on either side.

When we read this panel as a single image, it demonstrates how fracking infrastructure works, but little more. However, if we situate it within the larger visual economy of the comic, it becomes a graphic Capitaloscene that reveals infrastructure's historical form. Sacco invites us to read the line of fracking infrastructure against the invasive line of the winter road. Formally, the road runs penetratively into the Northwest Territories before opening out and shooting the toxic tendrils of the capitalist economy into the surrounding Dene villages and towns. Later in the comic, this formal process is repeated once more, though not with the straight line of the well or the road this time, but that of the Mackenzie Valley Pipeline. Sacco documents in great detail the infamous Paulette case, a pivotal moment in the contest between the settler state and the Dene over rights to the land. Initially, the Dene pushed collectively for a single land claim on the whole territory, successfully halting the pipeline. However, in the following decades, the pressure and promise of economic development pushed subgroups of the Dene to fragment away from the single claim and strike local deals with oil and gas companies. Sacco heads these sections of his story with revealing subtitles: "Divide and Conquer" (73) and "Dance with the Devil" (83). Taken as a systemic whole, the comic invites us to see infrastructure as a historical form. Roads, wells, pipelines – all introduce relations of accumulation into the Northwestern Territories through a penetrative line that then fragments the surrounding landscape *and* the existing social relations of the Dene communities who live there. Infrastructure is

not drawn as fixed capital in abstract space, but as a historical force of accumulation that fundamentally alters relationships in the web of life.

Throughout *Paying the Land*, Joe meets a number of Dene leaders who are grappling with these altered relationships in brutally concrete, economic terms. The infiltration of the capitalist economy has left them torn between their ancient cultural traditions of environmental stewardship and the seemingly inevitable metabolism of accumulation that will sooner or later bring fossil infrastructures to the Northwest Territories. Many leaders have understandably cut a deal, including Darrell Beaulieu, "CEO of Denendeh Investments, which promotes the economic growth of the Dene First Nations" (42, see Figure 2). Sacco relays this interview across a remarkable double-page spread that floats panels of Beaulieu explaining his decisions over dense infrastructural landscapes of fracking infrastructure and congested highways. With this narrative arrangement, Sacco threads together the decisions and actions of Denendeh Investments and the infrastructural conditions in which they must be made. As in the earlier sequence discussed above, the panel borders containing Beaulieu's testimony both separate but also connect his subjective view to the infrastructures of accumulation that are so fundamentally reshaping his world. "Darrel understands that the consequences of mining are not just a local concern," Sacco records, "that climate change is a global issue" (42). Meanwhile, in the background, the snaking lines of fracking pipes are visually echoed by the tangles of congested freeways. With this graphic Capitaloscene, the page's narrative infrastructure illustrates the systemic reach of the forces driving the extraction of fossil fuels. One consequence of this view is to move responsibility away from the Dene – "if you don't do it, somebody else will" (43) – and toward the unsustainable economic relations and social practices on which that extraction feeds.

What we see in this spread, and throughout *Paying the Land* as a whole, is the way in which the Dene are at once upended by inroads of accumulation, even as they find different ways to galvanize forms of empowerment and agency. This agency is not without compromise, somehow outside of the

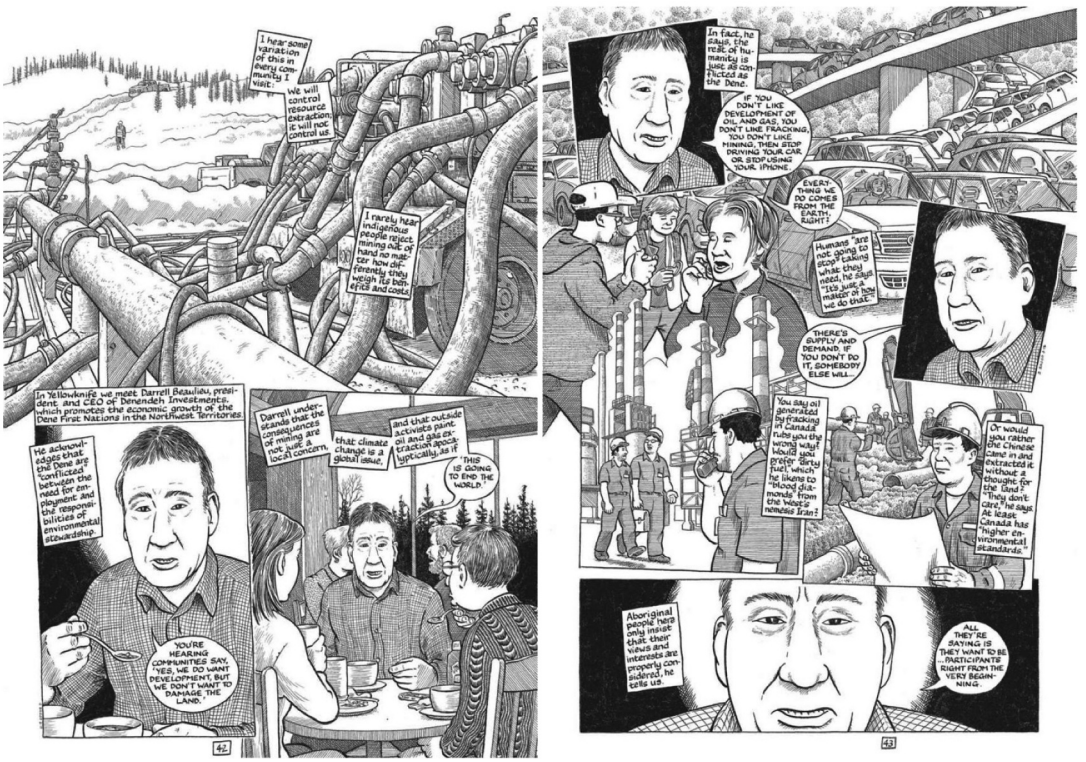

Figure 2. Two pages from the third chapter of *Paying the Land* (Sacco 27, 33). Reproduced with the permission of the publisher.

capitalist forcefield introduced by the fracking industry's infrastructures of accumulation. But there are nonetheless anti-colonial relations forming through the web of life in this narrative, as the Dene attempt to seize control of the rate of extraction and push back against the more invasive elements of the system in which they find themselves. Their traditional cultures and solidarities have been broken apart by the infiltration of settler infrastructures, with all kinds of violent consequences that Sacco documents in painstaking detail. But some of their central values have nonetheless endured into the alternative social relationships that now allow the Dene to forge modest counteractive pressures against capitalism's infrastructural reshaping of the web of life.

What emerges is an insurgent politics that is not only local to the resource frontier. Instead, while fossil infrastructures funnel oil and gas around the globe, this infrastructure also channels the potential for new solidarities between those living in zones of extraction and readers situated in high-consumption societies. Drawing these into view, *Paying the Land* helps us to see the historicity of infrastructure and, in so doing, to mark a political horizon beyond which relationships of stewardship and reciprocity might be activated within and against the rapacious metabolism of the Capitalocene.

Pablo Fajardo's *Crude, a Memoir* (2021)

A collaborative graphic memoir scripted by Sophie Tardy-Joubert and drawn and colored by Damien Roudeau, *Crude* tells the story of a decades-long legal battle between US oil giant Texaco and Pablo Fajardo, a lawyer representing the Indigenous people of the Ecuadorian Amazon. Like *Paying the Land*, it is a documentation of the consequences of decades of extraction by a multi-national corporation in a fraught resource frontier. However, rather than capturing an array of disjointed Indigenous testimonies, it instead centers its narrative on the one legal case that sought justice and reparations for Texaco's pollution of vast areas of Amazonian forest. Fajardo was not himself indigenous to the Amazon, but a migrant to the oil fields that were first opened up in Ecuador in the early 1970s. He was self-educated in the tradition of Latin American and global workers' movements, and he worked to unionize Ecuadorian oil workers through the rest of that decade. He also became involved with a group of Franciscan fathers who practised liberation theology and sought to promote the rights of Indigenous groups displaced by the oil fields, embedding him further in the community.

When their concessions ran out in 1992, Texaco abandoned a devastated landscape of oil spills and decaying infrastructure, causing infertility, disease, and death among those they left behind. Local communities decided to pursue the corporation for damages and reparations, and they chose Fajardo as their legal representative. While the first part of *Crude* is a memoir of Fajardo's formative years in the midst of a local extraction zone, the second follows him as he pursues Texaco (later absorbed by Chevron in 2001) through a series of international courts and the global legal system built to sustain and protect corporate negligence. The comic documents the variety of strategies used by the oil company to undermine Fajardo's case, as well as his credibility, including multiple convoluted legal clauses, switching between different national courts, sustained smear campaigns, and outright violence and intimidation. By the conclusion of the graphic narrative, justice has not been served. Instead, the comic ends on a simultaneously despondent and hopeful note, with Fajardo gesturing to future collaborations between local groups across the global South as they push for reform of the international courts and the development of new legal mechanisms to hold multi-national corporations to account.

Though very different from *Paying the Land* in genre and style, the two comics are comparable when we read them as contemporary meta-fictions. Tardy-Joubert and Roudeau use the same visual technique as Sacco, inviting readers to interpret the comic's narrative infrastructure – its form – and the material infrastructures of accumulation – its content – as conjoined and homologous. Yet they also exploit the reader's assumption of this homology to powerful effect. Consider two excerpts from the comic's opening four-page sequence, which begins by showing vast expanses of forest unbroken by any panels or grids (see Figure 3). The comic's lack of narrative scaffolding in these early pages is

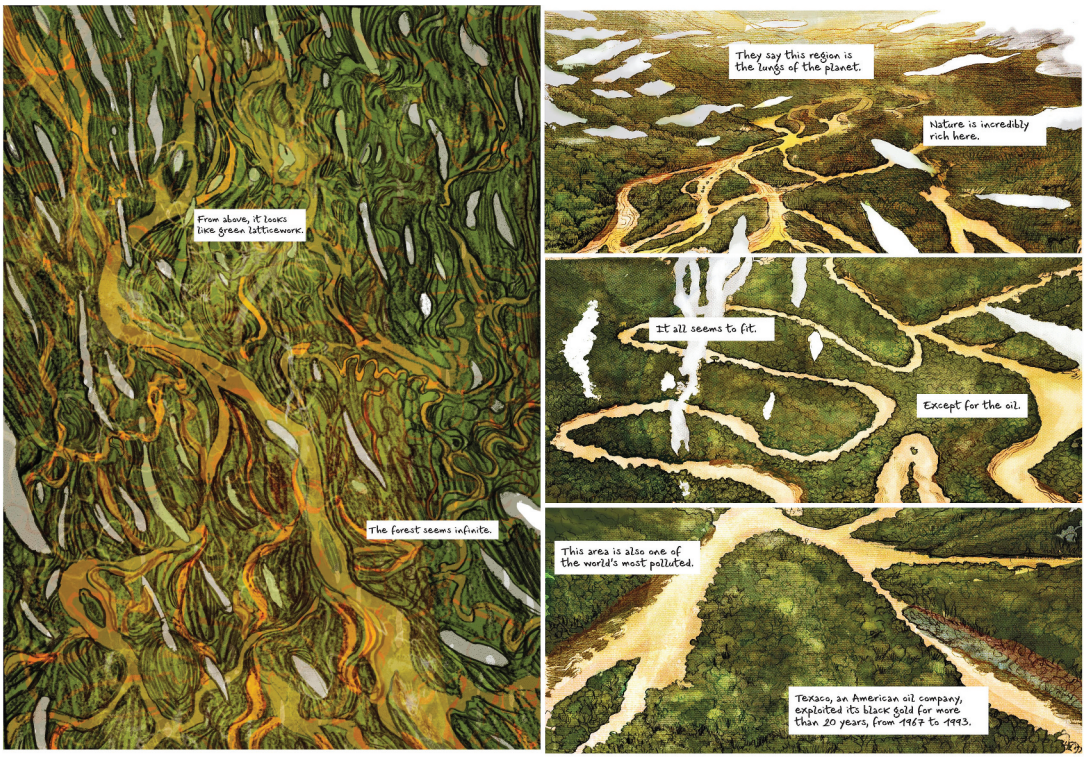

Figure 3. Pages 2 and 4 from Pablo Fajado, Sophie Tardy-Joubert, & Damien Roudeau. Crude, A Memoir. Graphic Mundi, 2021. ©2021 The Pennsylvania State University, originally published as Texaco ©Editions Les Arènes, Paris 2019.

further intensified by the abstract quality of the image. It construct the landscape as fictional "Nature" with a capital "N," inviting us to view the Amazon as a world that is "out there," romanticized and untouched by human intervention. Only the floating text boxes fragment the cohesion of this page, indicting that perhaps all is not as it seems: "From above, it looks like green lattice work. The forest seems infinite" (2). It looks green *from above* – but is it? It *seems* infinite – but is this really the case?

The next two pages in the sequence introduce first one and then two horizontal gutters, breaking the pages into two and then three panel grids (see Figure 3). As these gutters are introduced, the perspective of the images moves out and tilts slowly to the side, so that rather than looking directly down upon the landscape as might a satellite, an orienting horizon comes into view. With this shift, the landscape becomes more legible, breaking out into three-dimensionally distinct rivers, mountains, and islands of trees. Yet while the images continue to suggest an image of "Nature" as pristine and untouched, the accompanying text again casts doubt on this point of view: "*They say* this region is the lungs of the planet . . . It all *seems* to fit" (4, my emphasis). Then, in the final two panels of the sequence, the sense of foreboding introduced by the text is confirmed: "Except for the oil. This area is also one of the world's most polluted. Texaco . . . exploited its black gold for more than 20 years, from 1967 to 1993" (4). Suddenly, although the images of the landscape themselves have not changed, the text alters the way in which they are perceived. The gold rivers and green landscapes, glossed with brown tones, transform in front of our eyes from "Nature" to nature. This view then presses back on the opening page spreads that, we now realize, had deceived us, showing us not an abstract "Nature" but a landscape utterly reshaped by the consequences of capitalist accumulation. We are no longer looking on a healthy landscape that is somehow separate from human activity, but a polluted one that is firmly embedded in the historical era of the Capitalocene. Indeed, the absence of actual humans in

these images reinforces this systemic historicity, showing how it is not only individuals or even companies that are to blame, but a historical set of socioeconomic and environmental relations.

We can see the comic's infrastructure operating as a system on this page (4). The lines of the grid are soft, and there are no hard panel borders in this sequence: it is not these narrative infrastructures that have disrupted our view of the seemingly peaceful landscape. Rather, the narrative tension derives from the infrastructural relations between the images and the text. The images alone produce space as static, fixing "Nature" as an abstract idea. However, when a relationship is forged between these framed scenes and the captioned text, space is melded to time and becomes historical. The linear time of the written text gives the spatial images a sense of historicity, just as the space of the image breaks open the linearity of the text into a relative field: "Space is not static, nor time spaceless" (Massey 264). It is in this conjunction that we are presented with a graphic Capitaloscene. The narrative infrastructure of the page transforms boxed off spaces into nodes in a spatial network, their meaning derived not from their interior contents alone, but from their relational position within the time-space continuum of the page and the system of the comic as a whole.

When the comic turns to drawings of physical infrastructure, such as the trans-Ecuadorian pipeline (Fajardo 13), the page's conventional narrative infrastructure – its grids and frames – takes on a more conventional and more interventionist role (see Figure 4). Here, the layout that has hitherto been limited to no more than three or four broad panels per page suddenly becomes fragmented into eight much smaller boxes of time. That the formal infrastructure of the comic proliferates while it documents the construction of fossil infrastructure in its content is significant, working like Sacco to highlight their homologous qualities. The page shows quite straightforwardly how graphic narrative draws infrastructure as historical form, with each box leaping forward months in the construction process, from the arrival of segments of concrete cylinder, to the plunging of wells into the ground, to the maintenance and repair work on the

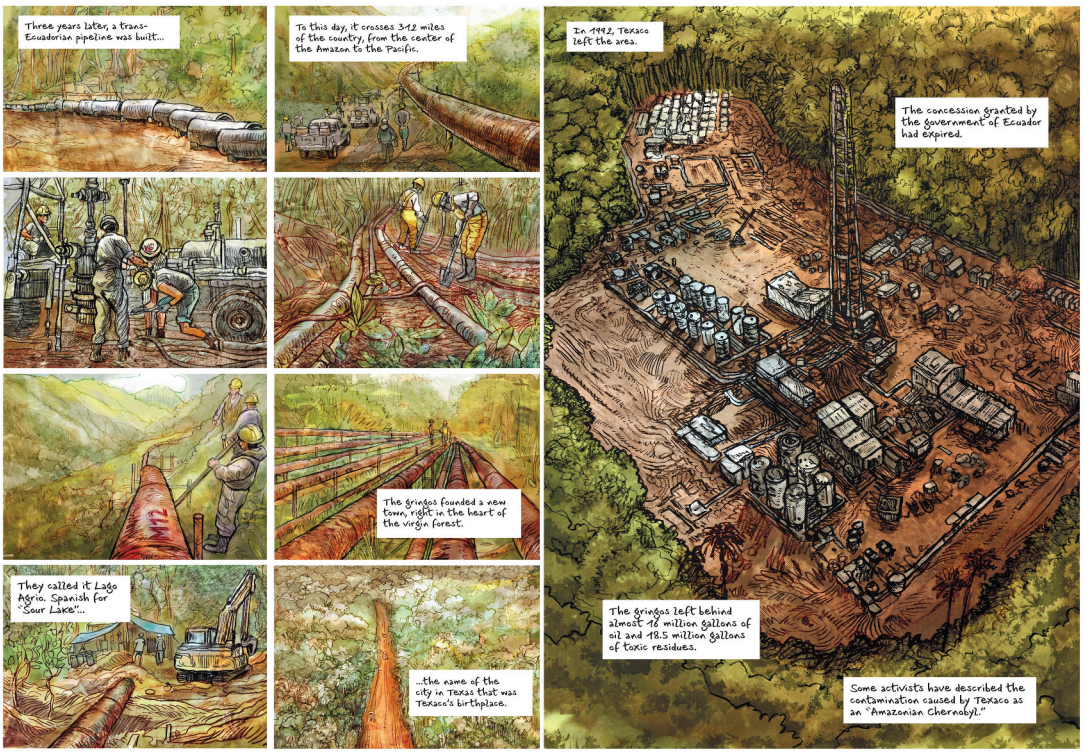

Figure 4. Pages 13 and 48 from Pablo Fajado, Sophie Tardy-Joubert, & Damien Roudeau. Crude, A Memoir. Graphic Mundi, 2021. ©2021 The Pennsylvania State University, originally published as Texaco ©Editions Les Arènes, Paris 2019.

pipeline. This works explicitly against the cartographic gaze that conceals the historicity of infrastructure by fixing it spatially into the landscape, as if it had always existed outside of history. The accompanying text then further complicates this chronology. While the boxes move steadily forward, the text points both backwards ("Three years later . . . ") and forwards ("To this day . . . "), layering the page with a dialectical historicity that complicates the superficial linearity of developmental time. In the final panels, the text notes the decision to name the town that grew up around the oil well Lago Agrio, planting Texan geography – "Texaco's birthplace" – into the heart of the Ecuadorian Amazon. Thus does the page finish with an implicit critique of the well-known colonial use of place-names to erase Indigenous inhabitants and to "fix" settler infrastructure into the landscape.

A little later in the graphic novel, Fajardo begins visiting rural communities on behalf of the Franciscan fathers. As he remembers, "I saw the effects oil had on people's lives" (46). In one particularly distressing scene, a woman shows Fajardo a pig who "just dropped dead" (47). She recounts how her husband cut the pig open to discover its belly full of oil. The perspective of the panels on this page move from Fajardo observing the pig to a close up of the woman's face, before then panning back down to the muddy ground on which the pig lies. Here, the swirling lines of brown and green call back to the comic's opening pages, where the oil was shown coursing through the "latticework" of the web of life. We then turn the page to discover a splash page showing an aerial view of the infrastructural chaos that Texaco left behind (48, see Figure 4). Accompanying text informs readers of the extent of the devastation: "The gringos left behind almost 16 million gallons of oil and 18.5 million gallons of toxic residues. Some activists have described the contamination caused by Texaco as an 'Amazonian Chernobyl'" (48).

Describing pollution as an expression of settler colonial land relations, Max Liboiron has shown that while the abstraction of territories into a fixed and empty "Nature" – *terra nullius* – is designed to render them ahistorical, it is nonetheless a deeply historical act because it allows "settlers to think of their uses of land, for pollution or otherwise, as proper and right because it belongs to them and their goals and *futures*" (Liboiron 68, my emphasis). Pollution operates according to the same spatio-temporal interests that defend infrastructure as fixed capital, committing not only to past and present but also to future environmental violence. Not only land, then, but the future of that land is colonized by capital in these relations: not only space, but space in time. This affords us a view onto infrastructure's historicity, which is not simply about the occupation and plunder of land in space, but the operation of that plunder in a longer continuum of historical space-time.

With this in mind, it is striking that the page introducing the extent of Texaco's pollution of the Ecuadorian Amazon is drawn as a splash, without any narrative infrastructures breaking up the image (other than the borders of the page). It shows a disused oil well in the middle of the forest. The borders of the clearing, though part of the image's content, take on a formal role, working a little like panel borders to frame the environmental atrocity. We stumble on the splash after pages broken up by dense narrative infrastructures, much as we might stumble upon this clearing after scrambling through the dense forest. As critics have observed, splash pages invite the reader to pause and contemplate a scene by partly exiling it from the rest of the comic's narrative time. Consider Groensteen's comments on Alan Moore and Dave Gibbons's use of splash pages in *Watchmen* (1986–87) to mark out the moment of nuclear apocalypse: "the only splash pages of the whole work have a remarkable impact. The rhythm of the narration freezes, and time is suspended over these images of devastation" (Groensteen *Comics and Narration*, 147). However, when read as a graphic Capitaloscene, *Crude*'s splash image of abandoned fossil infrastructures works in a different way. It is true that the reader pauses on this page, and that as a consequence the narrative time of the comic does indeed slow down. But the result is not to remove the infrastructural violence it depicts from history, containing it to a space that is outside of time. On the contrary, the page's narrative slowdown communicates the endurance of this fossil infrastructure *beyond* its own value-time. This is not the fast-paced mobility that powers infrastructures of accumulation, but the much slower time of infrastructures that have outlived their value as fixed capital, and which now occupy a very different time-space of pollution and decay.

As this page implies, *Crude*'s whole narrative is about the historicity of infrastructure, the comic centering on the polluting endurance of infrastructure beyond the "fixed" time of its

practical operation. The fossil infrastructures in the Ecuadorian Amazon may no longer be technically "accumulating" wealth, but they continue to poison "nature" understood as a set of flows that are – quite literally – "inside" as well as "around" these human and non-human communities (Moore, *Capitalism in the Web of Life* 3). Yet even as it captures the extent of this violence, *Crude* also demonstrates the way those fossil infrastructures have produced new social relations that *continue* to contest the accumulative logics of the Capitalocene, working *within* but also *against* the system that brings them into being. As noted above, the legal case for reparations has not been resolved by the end of the graphic novel, but neither has Fajardo relinquished his aims. In his concluding reflection, he emphasizes new anti-capitalist and anti-colonial *relations* as a route to infrastructural justice: "We are not the only ones. In different places around the world, people are fighting to assert their rights. Today, we are joining forces with other victims of multinationals [to] speak with one voice" (113). Functioning as a narrative system comprised of formal infrastructures that produce meaning through their multi-directional interrelations, *Crude* is able to draw into view the forces and flows that comprise capitalism in the web of life: these are the comic's graphic Capitaloscenes, and they draw infrastructure as historical form.

Conclusion

I have made several interlocking arguments in this essay. I have insisted on the need to rethink the way that we customarily view infrastructure as a spatial and static form, somehow separate from an abstract "Nature" that is "out there," beyond our infrastructural lines. I have suggested that Jason Moore's concept of the Capitalocene, which describes capitalism's restructuring of relations in the web of life toward ceaseless accumulation, is one way in which we can step outside of this narrow view of infrastructure and redraw it as historical form. This reorientation helps us to grasp the processes by which humans, infrastructures, and their environments co-constitute one another in the web of life.

By combining this work with existing comics scholarship, I then suggested that graphic narratives are especially well-placed to retrain us in this way of reading infrastructure, comprised as comics are of their own narrative infrastructure, and insisting as they do that we always read this infrastructure *in relation* to both the spatial and temporal vectors of the narrative system in which they operate. As I have suggested, graphic narratives – whether documentary, memoir, or fiction – might therefore be read as anti-novels, at once composing contemporary fictions while inviting us to reflect meta-fictionally on the infrastructures that make such compositions possible. I have used the phrase "graphic Capitaloscenes" to describe those moments when comics allow us to perceive this compositional process as capitalism's reshaping of the web of life, particularly in the way that they draw infrastructure as an historical rather than merely spatial or temporal form.

Through the examples of two recent comics, Joe Sacco's *Paying the Land* and Pablo Fajardo's *Crude, A Memoir*, I then tried to show how this works in practice, on the page. But in these readings, I have also emphasized the ways in which infrastructures of accumulation draw insurgent relations and perhaps even alternative and informal infrastructures into view. As my examples suggest, these always remain precarious and contingent, and sometimes compromised. Nonetheless, these graphic narratives importantly show us that any such movements are not separate from or outside of the forces and flows of the Capitalocene. On the contrary, they are fundamentally constituted by and constituting of human and more-than-human relations as they operate through the web of life. It is here, I think, that the hope and utility of graphic Capitaloscenes resides. By pushing our understanding of infrastructure away from ahistorical objects fixed in space, and toward historical forms that are imbricated in the material production of the world, we can begin to think beyond relations of accumulation and bring new political horizons into view through the form of the comics page.

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