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# Labor organizing at chokepoints along Amazon's supply chain: Locating geo-strategic nodes

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## Abstract

Amazon seems to be creating a new hybrid model of capitalism combining some elements of classical Fordist vertical integration, or even the over hundred-year-old “Taylorism” of scientific management, with 21st century elements of labor “flexibility” and reliance on gig labor and subcontracting. This hybrid model offers opportunities for organized labor to gain a foothold within some of Amazon’s vertically integrated nodes as the firm lengthens its corporate commodity chain to grow increasingly close to consumers. Building on earlier work on opportunities for, and constraints on, labor in a variety of global commodity chains, our empirical cases examine how Amazon’s corporate strategies may open opportunities for labor in three illustrative cases ensconced in fulfillment centers—the Fordist vertical integration side of the model—in the Inland Empire and Otay Mesa (both in southern California) and Northern Kentucky.

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## Keywords

Amazon, logistics, e-commerce, chokepoints, labor, global commodity chains, Fordism, vertical integration

## Introduction

“This April (2022) Amazon launched a one billion dollar technology investment in U.S. warehouses in order to create revised massive supply chains, workers safety and speed up enormous volumes of local ‘last mile’ consumer delivery.” (Palmer, 2022)

While employment in the logistics sector in the United States began growing during the logistics revolution in the 1960s (Bonacich and Wilson, 2008), over the past decade a distinct subtype of logistics employment burgeoned: logistics connected to e-commerce called the “e-logistics revolution” (Alimahomed-Wilson, 2021). What separates the e-logistics revolution from traditional logistics are both the speed and the geographic scale at which the supply chains operate. In the classic model, typified by Wal-Mart (Bonacich and Wilson, 2006), retailers often utilized a hub and spoke model in which a major distribution center sat equidistant to several retail stores. A key problem for corporations was that a bottleneck at a single warehouse could prevent goods from getting to the storefront in time for their sale.

However, the e-logistics revolution has a distinct logic, one prioritizing speed and new geographic patterns to ensure that goods arrive to consumers exactly when promised. In practice, this means that e-commerce sped up the supply chain, requiring a host of changes in how goods move to ensure on-time deliveries. To make this possible we see new management tactics such as “pick towers” where individual commodities are stowed by labor, then robotically located using technology (Delfanti, 2021, Chapter 2). In fact, workers complete four differing tasks, all designed to store and send goods to particular consumers: receiving/prepping, stowing, picking, and packing (Kassem, 2023, Chapter 6). Rapid on time delivery is now the main priority—even if this means utilizing transportation modes that were seen as “too expensive” or “less efficient” in the past, including a greater reliance on air-freight, less-than-full-truckload shipments, and smaller ocean vessels (Alimahomed-Wilson, 2021). But it also involves welding together both workers and technology, so that needed products can be received, located, and shipped out through the stow and search processes in a gigantic warehouse (or pick tower) (Delfanti, 2021, see Chapter 5). In fact, Delfanti (2021) notes that Amazon’s responses to the e-logistics revolution, particularly in warehouses, constitute the “frontline of contemporary capitalism” where the “battle for the future of work is increasingly being fought” (p. 17).

This paper traces the predominance of a new form of economic organization that employs a large labor force in ports, transportation, and other logistics work. Enacted by a suite of large e-commerce companies and typified by Amazon, this hybrid model of capitalism is structured simultaneously around elements of Fordism (vertical integration), as well as Taylorism, *and* Post-Fordism (flexibility and subcontracting) such that commodity chains now extend all the way to consumers rather than ending at retail outlets. While companies like Amazon may use more vertical integration than their predecessors (e.g. Walmart), worker disposability (or obsolescence Delfanti, 2021: 94–99) is often reproduced through discourses of unskilled labor and high worker turnover (Loewen, 2018). Shifts in economic organization always incorporated work in particular ways, and we examine this e-logistics revolution as it unfolded in the real-world contexts of COVID-19, trade wars, and logistics challenges, to demonstrate the benefits and challenges it presents to labor organizing efforts.

In what follows, we introduce our conceptual and theoretical framing before moving to our empirical analysis of labor issues in logistics, focusing on three crucial nodes in Amazon’s supply chain network—the Inland Empire east of Los Angeles, CA; Otay Mesa in San Diego, CA; and the Cincinnati/Northern Kentucky International Airport (CVG). Because these major fulfillment centers

and airfreight facilities are key strategic nodes, they tend to occupy places in Amazon's network that represent a return to Fordist vertical integration and Tayloristic forms of worker control via surveillance and technology (see Delfanti, 2021 for a discussion of direct hiring, deskilling, and "pay to quit" policies to dispose of unneeded workers; see also Emmons Allison and Reese, 2023: 112; MacGillis, 2021). The Fordist vertically integrated components of Amazon's supply chains are different than the post-Fordist model typified by the logistics of companies like Walmart in that Amazon directly employs workers, rather than working with employment agencies, subcontractors, and other intermediaries. As we argue, many of Amazon's geo-strategic locations for labor organizing are within their Fordist vertically integrated side of the business model due to their strategic location along the supply chain as well as workers' ability to negotiate directly with the company. It should be noted that the cases we have selected are not places where labor organizing is necessarily more active than other places around the country. Rather, we have identified geo-strategic locations which we believe offer the potential for maximum disruption along Amazon's supply chain.

These fulfillment centers are linked through the movement of goods to smaller sortation centers where last mile deliveries take place. What we are seeing here is two distinct Amazon patterns: on the one hand, one big reality is "fulfillment" or distribution centers (in places like U.S. operations, including the southern California ones we study, Italy's Piacenza (Delfanti, 2021) or other European "digital platforms" (Kassem, 2023)), while the other involves very distinct local "last-mile" targeted warehouses (found worldwide). Both are important, if rather different—and while we mostly attend to the key role of the giant fulfillment centers, more local distribution centers rapidly delivering goods to well-off consumers are also heavily embedded in realities like gig labor and subcontracting (underlining the corporations extended hybrid nature, particularly for immediate deliveries). Building on earlier work on opportunities for and constraints on labor in a variety of global commodity chains, our empirical cases examine how Amazon's corporate strategies may open opportunities for labor in three illustrative cases: ensconced in fulfillment centers in Otay Mesa, the Inland Empire, and Northern Kentucky. Alongside these cases, we also consider how major distribution centers elsewhere are deeply implicated in labor flexibility, low costs, high levels of technology and automation, and widespread discontent and contradictions for crucial workers.

Smaller sortation centers often use third-party firms or gig economy workers. These third-party services are often more difficult to organize because, if unionization was to take place, all Amazon would need to do is subcontract to another partner, as they recently did with their first ever unionized third party contractor (Jamieson, 2023). Because of this, the three cases in our paper focus on the Fordist vertical integration part of Amazon's supply chain. Furthermore, as was shown in the United Auto Workers' (UAW) stand up strike tactic against the big three auto manufacturers in the US, mapping the strategic nodes within a supply chain can impact all workers. Locating strategic nodes that can inflict maximum disruption on a firm's supply chain limits risk for workers while at the same time opening up the possibility to win better pay and working conditions for all workers, even those not involved in the labor disruptions (Kuttner, 2023).

## Theoretical framework

The decline of core manufacturing (Vidal, 2015), the globalization of industrial production to low wage countries around the world (Arrighi, 1994; Silver, 2003), and the e-logistics revolution over the last five decades were major shifts in the global economy. This moved very large numbers of employees out of factories in the U.S. and other wealthy countries and created a recent explosion in jobs in ports, warehouses, transportation, and logistics to move goods from distant factories to the homes of consumers. How can we explain this?

Our theoretical framework emphasizes examining these changes from a sectoral perspective using the raw materialist lengthened global commodity chains model (Ciccantell et al., 2023, 2024;

Ciccantell and Smith, 2009; Sowers et al., 2014). Building on commodity chain analysis in world-systems theory (Bair, 2008; Gereffi and Korzeniewicz, 1994; Hopkins and Wallerstein, 1986) and on the research in geography on Global Value Chains (GVCs) and Global Production Networks (GPNs) (Bridge, 2008; Gereffi, 2018; World Bank, 2020), we focus on raw materials extraction, but also on processing, transport, and communications technologies that link multiple nodes of the chain from raw materials sources through industrial processing to logistic distribution and, ultimately, to consumption and, eventually, waste disposal. Obviously, among the key assumptions here is that “production” is key and getting the material supplies are essential. The raw materialist lengthened global commodity chains model provides a lens to examine spatially-based disarticulations (the marginalization or outright elimination of particular nodes from a GCC) (Bair and Werner, 2011) and contestations over extraction, processing, transport, consumption, and waste disposal across these chains. This approach further highlights the role of contestation and resistance to the construction and reproduction of a particular commodity chain in particular places (Ciccantell et al., 2023, 2024; Sowers et al., 2014).

To understand the e-logistics revolution, we also need to extend our analysis to major distribution centers, transport systems, and ultimately to consumers’ homes as delivery locations at the end of these chains. The final link is how to reach that “last mile” problem of how to move goods to individual consumers. This is a much more economically, managerially, and spatially challenging task than moving goods from warehouses to retail stores *à la* WalMart in the 20th century. Our larger goal in extending our analysis to lengthened commodity chains is to analyze the role of transport and distribution (“logistics”) as generative sectors driving economic development via economies of scale, reducing diseconomies of space, and expanding the geographic scale and scope of GCCs. In attempting to formulate a “critical logistics studies” (Chua et al., 2018), we emphasize the contributions of transport and distribution to capital accumulation, the turnover time of capital, and the efficiency of capital investments at both the upstream raw materials and downstream consumer ends. Bonacich and Hardie (2006) highlight two meanings of logistics, including the classic “nuts-and-bolts distribution functions that a firm must undertake, namely, transportation and warehousing” as well as the more recent “management of the supply chain, including the relations between retailers, their producers/suppliers and their carrier/transportation providers” (p. 163). Chua et al. (2018) extend this by highlighting two functions of logistics, the calculative rationality that organizes physical movement, as well as the material and spatial practices that reconfigure networks of production and distribution. Consistent with this view of logistics as a driver of the global economy, Allen (2020) argues in his analysis of UPS that “the rise of modern logistics [is] the force reshaping global capitalism” (p. 153). Furthermore, Danyluk (2018) argues that a “logistical fix” (i.e., enhancing the mobility of commodity capital) became an essential condition of globalization since the 1970s. There may be a misperception among some political economists that value is only created via production or perhaps via extraction. In fact, Marx himself in *Capital*, Volume II, did argue that “circulation” operates as a specific mode of accumulation by selling a “change in location.” Moody (2022) elaborates, arguing that the speed of circulation substitutes for volume of capital by speeding up the turnover time in an M-C-M<sup>1</sup> cycle—where M represents the initial investment, C represents the production and distribution of a commodity, and M<sup>1</sup> represents the initial investment plus a profit. Chua (2021) evocatively argues that we need to focus on how “logistics enmeshes” infrastructure, people, society, and territory into a larger and larger “machine of supply chain capital” via growing “logics of distributive efficiency.” This is something relatively new, but undeniably important, needing more attention!

If value is realized through circulation by selling a change in location, then that same value added can be leveraged and negotiated by logistics workers (e.g. truckers, warehouse workers, longshoremen, etc.) to achieve tangible gains in their work lives. Can these workers create a bottleneck or a chokepoint within the logistical network of a company? If so, they can create substantial “stakes” to achieve demands for higher pay, union recognition, or even political demands—such as when dock

workers in the Northern California refused to offload South African cargo in solidarity with the anti-apartheid movement (Alimahomed-Wilson and Ness, 2018; Cole, 2015). However, chokepoints are place-dependent, meaning they can only exist if they effectively “choke” operations to a bit of a halt. This is because chokepoints exist where workers have structural (Silver, 2003; Wright, 2000) or positional (Perrone, 1983; Perrone et al., 1984; Wallace et al., 1989) power, meaning workers exist at a place within larger production and distribution networks where they can influence both upstream and downstream parts of the commodity chain.

Thus, redundancies in supply chain networks, such as when one node can easily be swapped out for another, tend to sharply reduce (or eliminate) the potential of that node to perform the essential work of “choking” operations. Danyluk (2019) discusses supply chain redundancies in terms of the “fungibility of space” (a reference to the economic term fungible, which denotes the interchangeability of identical items in a marketplace). While Danyluk uses this concept primarily to discuss supply chain urbanization, we find the concept informative for thinking through chokepoint potentialities. This means that attempts by labor to organize a chokepoint in a supply chain network will be most successful when directed at non-fungible/irreplaceable nodes. Scholars of Amazon argue that network redundancies in the company’s supply chain network block the possibility of workers using chokepoints as organizing tactics (Barthel, 2019; Vgontzas, 2020). However, we speculate that, while this is true in certain contexts, organized labor may be able to locate strategic nodes that are central to the company’s supply chain and thus workers may be able to operationalize a chokepoint at certain distribution centers via the use of disruptive power (see Kassem, 2022). This means that, by locating strategic nodes in the network—combined with an element of surprise as seen in the 2023 UAW strike—workers may be able to disrupt Amazon’s supply chains and make sizable gains in terms of working conditions, wages, etc. In recent decades, transportation and distribution emerged as essential elements to lengthening GCCs, due to increasingly vast commodity chains linking extraction, production, and consumption in distant parts of the globe. These lengthened chains are constantly building more complex networks, linking producers and consumers and creating potential chokepoints for labor.

To analyze the evolution of Amazon and the three case studies of potential chokepoints, we utilize a combination of methods. Our analysis of Amazon and its evolution examined corporate documents, the business press, and the growing body of academic analysis of Amazon’s growth, as well as our collective databases and previous research on the political economy of Amazon, a variety of transportation industries, and the logistics industry. The three case studies are based on field research by two co-authors that included observations, interviews, and active participation with stakeholders that included dialog and observations with managers, workers, and labor and community organizations.

## **The evolution of Amazon’s strategies and labor**

Communities and governments often welcome Amazon’s arrival for the influx of jobs, but the quality of these jobs and their impacts are often questioned by workers. Here we outline the evolution of Amazon’s strategies from a startup seeking to use information technology to disrupt an existing industry, which is a classic case of post-Fordist technology firms over the past three decades, to becoming a logistics-based retailing giant with a growing reliance on some classic Fordist strategies reminiscent of 20th century firms. We then discuss some general concerns with Amazon’s strategies toward workers and before presenting the logics behind our three case studies of critical corporate operations and their impacts on workers and labor organizing.

Amazon began in Jeff Bezos’ vision as an information technology firm that would use the internet revolution to disrupt an existing business. After considering a number of potential retail industries, Bezos settled on bookselling, using information technology to present a huge selection and existing logistics firms to deliver products rapidly (Stone, 2013, 2021). This early unprofitable (but industry

disrupting) success led to moves to increase the diversity of products and services sold—some were successful, but many others failed. This post-Fordist organization relied on a core group of technologists who developed increasingly sophisticated automation to encourage consumers to buy more and more products. A growing variety of products and the challenges of increasing speed of delivery in the 24/7 world of instant gratification led Amazon to grow their logistics capabilities. In many ways, Walmart's network of distribution centers allowed Walmart to outcompete smaller retailers during the 20th century. This was an organization that Bezos admitted to admiring, with the addition of increasingly sophisticated information technology and a growing cadre of retailing managers and a peripheral workforce of low paid and disposable (often seasonal) warehouse workers (Levinson, 2011; MacGillis, 2021; Stone, 2013, 2021). The original lean post-Fordist technology company grew rapidly in the 2000s and 2010s, becoming much too large to manage without rapidly increasing numbers of facilities, workers, and managers. The COVID-19 pandemic in 2020 suddenly created even larger demand for Amazon's delivered products as the company scrambled to keep its supply chains working despite the massive disruptions (Ciccantell et al., 2023, 2024; Sowers et al., 2014). Amazon moved to increasingly Fordist vertical integration (e.g. owning or leasing not just warehouses but ships, planes, and trucks and subcontracting with manufacturers to produce products) in order to increase efficiency and cut costs, although it also relies on subcontractors and gig labor for "last mile" delivery.

Amazon's rapid growth required two major innovations. First, as discussed below, Amazon's vast size, widely dispersed operations, and efforts to promote efficiency led to increased efforts to control workers more extensively and intensively, creating many of the difficult working conditions that encouraged worker organization in Amazon's warehouses. Here we see Taylorism and growing inequalities, as well as increasing worker injuries and environmental costs (Emmons Allison and Reese, 2023). Second, the massive investments in information technology, particularly computer servers, to support retail operations helped build Amazon's information technology business, Amazon Web Services, into a major component of the corporate internet and a major profit center for the firm. While we do not discuss AWS here, it is a critical part of Amazon's corporate strategies, including efforts to control workers. It is important to note that our analysis focuses on Amazon's operation in the U.S. and on the border with Mexico and not on its extensive operations in many other countries. We focus here on the logistics part of Amazon in the U.S.

In addition to speed, the e-logistics revolution prioritizes new geographic patterns to ensure that goods arrive directly to consumers exactly when promised. Alongside the speeding up of supply chains, and the use of various modes of transportation previously seen as too expensive, the spatial distribution of warehouses also changed so that workers are controlled in the receiving, stowing, picking, and packing of commodities—in ways that are both efficient and cost-saving. Amazon fulfillment centers and distribution centers are often clustered in semi-urban and suburban areas that feed sortation centers in the core of urban areas, and there are normally several sortation centers in a single urban area. Finally, the corporation is poised to move shipments in those places to consumers' homes (Alimahomed-Wilson and Reese, 2021).

As we will emphasize below, these patterns of major distribution centers, warehouses, and transportation networks in these sprawling supply chains also emerge as loci for both organized labor and for worker challenges to major corporations, including Amazon and other businesses delivering to customers. Because of this geographic pattern, Amazon can shift distribution around bottlenecks, including those created by organized labor. This analysis recognizes the constraints to organizing posed by a geographically dispersed supply chain such as Amazon, while at the same time illuminating what nodes may be central enough to impact Amazon's bottom line.

Amazon's model represents a major economic shift in the past few decades. In the 20th century, the United States (and most other advanced countries) were centers of manufacturing and industrialization (Silver, 2003). But there was a major economic shift in the final decades that led to the rapid

dissipation of the old pattern of “classical Fordist vertical integration” (Vidal, 2015), which defined the processes of large manufacturing firms like automobiles, steel, and other big factory assembly lines and work forces. Instead, a new approach emerged that emphasized ports, logistics, and transportation in these nations. This meant the decline of giant firms like US Steel and General Motors, but the rise of new dominant corporations, like Wal-Mart in the late 20th century and Amazon in more recent years. This enormous transformation reflects a shift away from the old pattern of rich countries dominated by gigantic and immensely profitable manufacturing enterprises, and the rise of e-commerce in the form of direct to consumer-driven worldwide supply chains, a new center of economic dynamism. Interestingly, the control and exploitation of relatively low wage labor (in warehouses or fulfillment centers rather than old industrial factories) remained in place (Delfanti, 2021; Emmons Allison and Reese, 2023; Kassem, 2023). These changes are not uncontested and face serious challenges from labor organizing as well as exacerbating environmental problems. This process results in a fundamental transformation to today’s economy, particularly in places dominated, to some extent, by wealthy consumers.

Each of these forms of economic organization created a distinct landscape for workers and labor. For instance, the classical Fordist era of manufacturing and industry was a time when traditional labor unions succeeded in improving workers’ lives, since the geography of in-country production facilities offered direct targets for labor campaigns. The shift to what is called Post-Fordism in the late 20th century, again shifted global economic organization, and with it, the landscape confronting workers and labor. Far-flung and flexibly organized decentralized commodity chains contained groups of workers engaged in various acts of transportation and logistics, like longshoremen, warehouse workers, and truckers, and a key labor strategy thus focused on creating bottlenecks, or “chokepoints” (Bonacich and Wilson, 2008). This occurred in strategic locations within commodity chains in which slowed or halted operations leveraged workers. The dominance of customer-driven e-commerce, however, is yet another significant economic shift, with ramifications for workers that makes finding strategic nodes in Amazon’s and other leading corporations’ supply chains more important. It may be all the more difficult, given the increased flexibility that Amazon and other companies build into their networks to enable them to shift or restructure around potential bottlenecks.

A leaked recent internal Amazon memo detailed it would run out of workers in key regional labor markets, including inland Southern California, within the next 5 years (Del Rey, 2022). In terms of the hybrid model we consider here, the tension between vertical integration and flexible gig labor shows itself in expecting workers to remain with the company for less than 3 years. Despite warehouse workers’ formal status as employees, Amazon privileges short-term productivity over employee permanence—creating what Emmons Allison and Reese (2023) call the “high churn” model (p. 112) that reflects conceptions of workers as “disposable” or “obsolescent” (Delfanti, 2021: 104–108). The result is that Amazon needs to hire more than the equivalent of its entire front-line workforce every year, which is double the attrition of comparable industry-wide attrition rates in retail (Del Rey, 2022). Automated supervision is often responsible for firings via surveillance technologies, based on time off task and unmet quota metrics. One shift recommended by the leaked memo is involving human resources more in warehouse location decisions “to apply labor forecasts to future site selection” (Del Rey, 2022). This suggests the company may intend to target specific regions based on worker characteristics, likely further contributing to Amazon’s already heavily racialized and immigrant frontline labor force (Reese, 2020). Amazon has already built warehouses in the Otay Mesa region of San Diego and in El Paso, Texas, in which they can employ migrant labor commuting across the border. Furthermore, the tensions between running out of workers and Amazon’s “churn and burn” model are starting to become clear. While a high turnover rate at Amazon warehouses enables the company to exploit workers and hedge against unionization (organization typically occurs among workers with longer job tenures), the company may literally run out of workers.



While some short-term options exist for Amazon (e.g. reducing automated terminations), this nonetheless demonstrates the impact of its warehousing on employment conditions of entire regions. For example, worker turnover and shortages are exacerbated by the consequences of dangerous working conditions at Amazon facilities. In 2021, Amazon’s injury rate remained double the non-company industry average, and recovery times were longer for serious injuries (Strategic Organizing Center, 2022a, 2022b). Such serious injuries are often musculoskeletal ones resulting from repetitive stressful exertions, including from awkward postures (Tung and Berkowitz, 2020). While the company often claims increased use of robotics and automation will improve worker safety, data from the US Occupational Safety and Health Administration (OSHA) and internal Amazon records indicate higher injury rates in these facilities (Johnson, 2022). Despite the injury rate falling in early 2020 after the company ceased enforcing productivity quotas, high injury rates resumed when productivity quotas returned (Horseman, 2022). High injury rates also exist for delivery drivers, including higher rates for contracted drivers (Clark, 2022). Clearly, the future of Amazon’s workforce is in danger, with every sign pointing to a sharply diminishing supply of labor, much worker churn, and high rates of injured workers either needing recovery time or being unable to return to work (Delfanti, 2021; Emmons Allison and Reese, 2023).

Amazon also has a flexible or post-Fordist side to their distribution model, relying on third-party contractors, particularly in the “last-mile.” Here, workers are not directly employed by Amazon, but they nonetheless work exclusively on its supply chain. A host of companies compete for Amazon contracts, which reduces costs due to market competition, and this downward pressure is ultimately passed on to workers. On this side of the business model, worker organizing can be very difficult. Recently, workers at a third-party firm in California contracted with Amazon voted to unionize, which led Amazon to immediately drop the company as a service provider (Jamieson, 2023).

Thus, our analysis of potential chokepoints in Amazon’s supply chain network focuses on the Fordist side of Amazon’s business model: executing a chokepoint is most successful when workers are in a non-redundant, or non-fungible, place in Amazon’s supply chain. Due to competition between third-party firms on the last-mile or flexible/post-Fordist side of the model, there are likely many redundancies. Because the company relies on this repetition in their vertically integrated, directly-hired side of the supply chain network, labor organizers need to locate strategic nodes that serve important semi-irreplaceable functions within the logistical network. In what follows, we speculate that three such nodes exist in the United States—the Inland Empire, CA; Otay Mesa, CA; and the airport just south of Cincinnati in Kentucky.

## **Potential chokepoints at Amazon**

In what follows, we discuss three cases in terms of their chokepoint potential. We analyze why these nodes serve as important places on Amazon’s supply chain and why labor organizers might leverage each of the three regions/facilities as a chokepoint. While above we discussed Amazon’s hybrid business model, here we focus primarily on major distribution centers rather than “last mile” facilities. This is because we believe that focusing on these large central nodes within the supply chain network allows for greater potential disruption of Amazon’s business model and therefore increased worker bargaining power.

### *Amazon in the Inland Empire*

The Inland Empire in Southern California is one region now fully transformed through distribution centers. This region is located 40–60 miles inland from the twin ports of Los Angeles and Long Beach, which together handle about 40% of container traffic coming into the U.S. (much of that coming from East Asia), making them the largest container ports in the US. Connected through an

extensive road and rail network in proximity to one of the largest population centers in the US, the western portions of Riverside and San Bernardino Counties are now the leading logistics warehouse hub in the country and one of the largest in the world (Emmons Allison, 2020; Gutelius and Theodore, 2019). With already higher concentrations of industrial development compared to the surrounding region, the combination of high unemployment following the Great Recession (see Bonacich and De Lara, 2009), and growth of online retail launched Inland Southern California into the highest concentration of warehouse workers in the US. Now Amazon is at the forefront of this transformation, accounting for half of all regional freight movement by 2018 (Flaming and Burns, 2019). In fact, Amazon quickly became one of the largest regional employers within 3 years of the arrival of the first fulfillment center in San Bernardino in 2012 (Horseman, 2021). This giant firm now operates approximately 20 facilities, totaling over 17 million square feet (Kennedy and Drummer, 2020).

Amazon's direct-hire labor market strategy in the region targets workers just above the lowest segment of warehouse labor in terms of wages, benefits, and regular hours (see Emmons Allison and Reese, 2023). This includes those who worked outside the warehouse sector prior to Amazon, particularly younger workers from retail and food service. While the lowest rungs of the hierarchy of the regional warehouse labor force experiences extensive downward pressures from sub-contracting (see De Lara, 2018), by comparison, Amazon may seem an appealing alternative.

The rapid growth of warehouses, Amazon or otherwise, in the Inland Empire points to a potential over-reliance on this form—which could be beneficial to labor interests seeking strategic places to disrupt economic activity. Indeed, over the last decade, many of the former local boosters of regional logistics-orientated warehousing growth called for the industrial diversification of the Inland Empire to prevent overreliance on logistics (Saraiva and Albright, 2023). Furthermore, because the Inland Empire is a suburban area of Los Angeles where major distribution hubs can be constructed due to comparatively cheaper costs of land, it occupies a node in Amazon's supply chain network that relies on the Fordist vertical integration part of this business model. These are mainly distribution and fulfillment centers handling large volumes of goods coming from the ports and heading elsewhere in the United States, and most workers are employed directly by Amazon rather than as subcontracted gig hires. This is a marked change from companies like Walmart, which also operate large warehouses in the Inland Empire, staffed mostly with temporary subcontracted labor (see Bonacich and De Lara, 2009). Because these warehouses are used to circulate goods before they enter sortation centers closer to city centers that often rely on last mile drivers in the gig economy—again, a workforce often harder to organize—they are not only strategic nodes for labor, but also have the potential to be organized in-house.

This pattern could be widely problematic for the region if other areas (particularly in less labor-friendly states) emerge as potential gateways for incoming goods (Phillips, 2022). Despite reports of warehouse excess capacity, linked to reduced online sales from early in the Covid-19 pandemic and rising opposition to warehouse development, Amazon continues to increase its presence in the region. This includes construction of a 4.1 million square foot facility in the City of Ontario, which will be the largest Amazon warehouse facility in the world (Collins, 2022). Such larger facilities with greater automation further demonstrate the expansion of Fordist warehouse strategies by Amazon, consisting of large place-dependent investment in fixed capital. While the Ontario facility is owned and developed by ProLogis, the world's largest industrial property owner (Grant, 2023), Amazon increased the land and facilities they own as opposed to the more typical retail practice of leasing warehouses (Soper and Wong, 2022). Greater investment by Amazon in vertically integrating real estate operations potentially creates opportunities for chokepoints in their logistics network, since companies are less likely to stop functions at a facility when they have fixed capital invested.

There are already several environmental, community, and labor groups in the Inland Empire opposing warehouse development through environmental-based lawsuits and activism, though this resistance is an "uncoordinated battle" with many actors but few coalitions (Phillips, 2022). Even so,

successful organization efforts, both locally at the San Bernardino airport (Kulish, 2020) and further off in Newark, NJ (Scheiber and Wise, 2022), demonstrate that disparate Amazon constituencies could be united in struggles for justice at key nodes in supply chains. Indeed, this same San Bernardino air hub became the site of the first organized action by frontline workers at an Inland Empire Amazon warehouse. One hundred sixty employees, led by Inland Empire Amazon Workers United, walked off the job following a petition signed by about 900 workers demanding increases in pay and working conditions (Whitehead, 2022), an event that followed a month of extreme heat such that warehouse temperatures exceeded 95°F on most days (Yee, 2022). The Amazon workers' action at a warehouse in the San Bernardino airhub also followed years of community opposition to the redevelopment of a decommissioned US Air Force base, suggesting greater potential for labor organizing in warehouses where opposition to warehouse development occurred.

There are other examples of regional peripheralization and disarticulation following the Great Recession making workers vulnerable to Amazon and warehouse development in the Inland Empire. Unemployment in Moreno Valley, a mid-size city, was nearly 20% in the early 2010s. The developer of World Logistics Center, the largest and most contested planned warehousing project in the region covering 10% of the 51 square mile city, was extensively involved in city politics (Downey, 2018), including substantial campaign contributions to political candidates, among them a former consultant to the developer (Garrison, 2014). The project was only approved after substantial concessions by the developer to alter site plans. Such organized community opposition, including the support of local warehouse labor organizations, suggests the possibility for community and labor coalitions to directly or indirectly influence organizing at Amazon centers. Evidence of this came in a Moreno Valley Amazon fulfillment center in September 2022, when workers filed an Amazon Labor Union-supported petition to hold a union election (Hussain, 2022).

The above examples highlight how community and labor coalitions might create even more widespread challenges to Amazon's use of Fordist/Taylorist labor control through operationalizing choke-points through disruptive power. However, these examples also serve to highlight the flexible aspects of Amazon's hybrid approach to real estate asset site selection, particularly for last mile sites. Flexible site selection for these warehouses allows less costly locational shifts. The ability of community and labor coalitions to limit such flexibility enhances the potential for creating non-fungible nodes in Amazon's logistics network.

### *Amazon in Otay Mesa*

In 2021, Amazon opened their first major fulfillment center in San Diego County. The massive warehouse is over 3 million square feet—making it currently Amazon's largest warehouse in the state of California (Gurley, 2022). Shortly thereafter, Amazon opened a second major fulfillment center across the street. The two warehouses are located next to the border in the Otay Mesa region of San Diego, giving them access to the primary commercial port of entry in the region—the Otay Mesa land port of entry between San Diego and Tijuana—and to a highly precarious workforce that lives in Tijuana and commutes over the border to San Diego. Before this fulfillment center opened, Amazon met the demands of the San Diego consumer market—itsself the eighth biggest city measured by population in the United States—by moving goods down a major highway (Interstate 15) from the Inland Empire to smaller sortation centers within the city. Now Amazon uses advanced robotics facilities and a workforce largely made up of racialized, highly exploitable Mexican labor to fulfill orders in the San Diego area and beyond.

The function of the warehouses themselves is somewhat debated. Amazon's official position is that the Otay Mesa warehouses are used to fulfill domestic orders and are not related to trade with Mexico (author's interviews). However, other regional stakeholders, including the chair of the Smart Border Coalition who works with Amazon on border issues, say that Amazon uses its Otay Mesa warehouses

to intake goods from Mexico—particularly from a third Amazon warehouse in Tijuana, just a few miles away. If this is true, the massive fulfillment centers might constitute a major chokepoint in Amazon’s North American supply chain network (Alimahomed-Wilson and Ness, 2018). The importance of this node as a potential chokepoint stems from a few factors, including the advantages of operating across national borders, and the lack of alternative nodes, if this node were compromised. Where international advantages are concerned, the importance of goods coming across the border to the Otay Mesa warehouse allows Amazon to benefit from Mexico’s cheap manufacturing labor costs and/or avoid tariffs based on special stipulations within trade law that allow e-commerce companies to fulfill international orders duty free, so long as the order is under \$800 per day (author’s interviews). This has become particularly useful in the context of former President Trump’s trade war with China. E-commerce companies can manufacture goods in China and avoid tariffs by circulating or “drop-shipping” those goods through Tijuana where they are gathered and sent back to the United States. Because Tijuana does not have a seaport, this process relies on importation through the twin ports of Los Angeles/Long Beach where goods are put in bonded trucks, bypassing US customs. By utilizing a bonded truck, the goods technically sit outside US customs territory even as they move through the United States (for a full analysis of bonded trucks and bonded warehouses see Orenstein, 2018, 2019). There are not presently alternate nodes that could substitute for Otay Mesa here, because goods coming from Mexico cannot go directly further into the U.S. (since trucks from Mexico are restricted to a small buffer zone in the US that the Otay warehouse sits within). Taking these two factors together demonstrates that Otay Mesa workers could actualize the importance of their node in Amazon’s North American supply network, organizing work stoppages, slowdowns, or strikes to “choke” Amazon’s operations to make demands and achieve gains.

Along with the positional power of workers in the Otay Mesa warehouses, these workers are employed directly by Amazon. Like the Inland Empire, this means that these Otay Mesa workers are part of the Fordist vertical integration side of Amazon’s business model and can engage in contract negotiations directly with the company, unlike some last-mile drivers in the city center of San Diego working for third-party firms or as part of the gig economy for Amazon Flex.

There are also challenges to organizing a chokepoint at the warehouse at Otay Mesa, however. First, the facility is an advanced robotics facility (Delfanti, 2021), meaning that the facility is highly automated; and automation is often called a technological fix for capital (Silver, 2003). In automated contexts, fewer workers are needed compared to another facility of the same size without automation, and remaining workers are also deskilled and easily replaceable. Furthermore, because goods are moved robotically from station to station, the labor process does not necessitate much human interaction which can make organizing difficult (author’s interview). Second, Amazon employs a workforce that largely lives in Mexico and commutes across the border each day to work. These workers exist in a legal gray area, have heightened precarity, and are more vulnerable to employee dismissal. If they are fired, they may have to work across the border doing the same job, likely something workers try hard to avoid, given that Otay Mesa Amazon workers nearly make in an hour what Amazon workers in Tijuana make in a day. Thus, the border functions as a disciplining mechanism because workers make a high enough wage to reproduce themselves and their families in Tijuana, where the cost of living is much lower than in San Diego. This also expands the industrial reserve army for the Otay Mesa facility, as workers in Tijuana are eager for opportunities to work in the US for higher wages. Because of this, the Otay Mesa facility does not experience the same labor retention and shortage issues discussed previously. In fact, the Otay Mesa management is proud of being a leader in worker retention for Amazon (author’s interview). This demonstrates the myriad of ways the malleability of national territory is used in processes of globalization along e-commerce supply chains (Orenstein, 2018).

This heightened precarity, however, does not stop these workers from organizing for better working conditions. Recently Amazon workers at the Otay Mesa facility delivered a petition with over 600

signatures to management, demanding an extra break on mandatory overtime 10-hour shifts, a pay increase, access to health care in Mexico, and a shuttle for those workers walking across the border to work (most workers walk either because the low pay at Amazon prevents them from owning a car, or because it is quicker than driving, or since wait times are still wildly inconsistent and can take multiple hours). This labor action was led by Tijuana-based workers who maintained their action despite management preventing them from getting signatures in front of the building. After delivering the petition to management, a shuttle program from the border started, and the company claims it is looking into health care options in Mexico (which would save Amazon money), but the workers have yet to see a pay raise (Gurley, 2022).

Due to the Otay Mesa facility's unique geography of sitting next to the US-Mexico border, it operates differently in its position along Amazon's supply chain as well as in the class relations on the shop floor. First, as argued previously, because the facility sits on a cross-border supply chain where tariff avoidance offers Amazon cost savings, it is a potentially powerful chokepoint due to its irreplaceability as a node for cross-border trade. Next, because its location allows workers to commute across the border for daily work, it solves Amazon's worker retention problem. While workers retaining their positions leads to greater potential for labor organizing (workers wanting better conditions at existing jobs rather than leaving them for better conditions elsewhere), the extreme precarity of these workers due to the cross-border nature of their work helps Amazon hedge against labor organizing. However, this strategy is not foolproof, as demonstrated by the recent organizing effort.

### *Amazon at the Cincinnati/Northern Kentucky Airport (CVG)*

While Amazon uses its clusters of warehouses in the Inland Empire largely to intake goods from the seaports of LA/Long Beach, and its warehouses in Otay Mesa to at least partly intake goods across the land port at the border from Mexico, there remains a third modality of transportation in Amazon's logistics network. With the need for speed in Amazon's supply chain model, they utilize airfreight to move goods across the country and around the world. In order to outcompete competition in the e-commerce marketplace, Amazon promises same- and next-day delivery for shoppers. When a shopper's order is not already in a warehouse, they simply use airfreight to move goods around the country as needed. This rationale is part of the e-logistics revolution which prioritizes the speed of logistic turnover time.

In 2015, Amazon launched Amazon Air to help facilitate this (Schwieterman et al., 2021). While other logistics firms use hubs near the population center of a country where they can then truck goods to the majority of the population within a day's drive (Negrey et al., 2011), Amazon instead elects to ship goods via air freight into different regions across the country. The diffuse supply chain network of Amazon Air links distribution hubs to one another across the US and makes using chokepoints more difficult for workers because central nodes within the network are harder to find. If workers were to try to leverage a chokepoint at one place in Amazon's airfreight network, Amazon could simply use a different airport.

Because the majority of Amazon's airfreight network is not place-bound, it is important for labor organizers to locate strategic sites for labor organizing—and Amazon appears to be developing a central node within their air transport network at CVG. According to Schwieterman and Walls (2020), "This hub appears to be the lynchpin to Amazon's efforts to develop a comprehensive array of domestic delivery services across the United States. This hub, when complete, will likely have a role similar to the FedEx 'megahub' in Memphis" (pp. 2–3). Because of the intended central role of the CVG airport, this could potentially be a powerful chokepoint in Amazon's airfreight network.

Like the warehouse clusters in the Inland Empire and Otay Mesa, workers at Amazon's central air-hub in Kentucky are part of the Fordist vertical integration side of Amazon's business model. Amazon's tendency is to have vertical integration in more central processes while having more

flexibility closer to the last mile delivery. This means that not only are these processes more central to Amazon's distribution system, making them strategic sites for organizing, but also, they are places where labor organizing can more directly target the parent company—Amazon.

Organizing Amazon's air-hub at CVG creates challenges. Amazon relies on immigrant labor at CVG, as in the Inland Empire and Otay Mesa (author's interviews), and, as already noted, the precarity of workers increases the difficulty of organizing. Unlike California, Kentucky is also a "right to work" state. This will undoubtedly make organizing the airport difficult. Further, the airport also uses advanced automation—another hallmark of Fordist production—deskilling workers and increasing their precarity. Amazon also uses several other airports near CVG, such as one just north of Cincinnati in Wilmington, Ohio, and another in Rockford, Illinois (Schwieterman et al., 2021)—and both could be used to redirect traffic during a work stoppage. In other words, although CVG is a central hub, there are still redundancies in the supply chain network. An additional complication is that Amazon shares the facility with DHL, which in an emergency could be contracted to fulfill Amazon orders (though DHL has only limited domestic 3PL (third party logistics) service). According to both DHL and Amazon executives, the CVG alliance is a partnership, rather than two companies competing for the same market (Thompson, 2020).

Despite these obstacles, if workers at the CVG Amazon facility organize, they could leverage a powerful chokepoint due to the difficulty for Amazon to reroute packages anywhere else in their airfreight network. Furthermore, identifying other important locations in Amazon's airfreight network such as airports in the southern California Inland Empire, New York, and other locations close to the median population center of the country (close to CVG) could be important when using a selective strike strategy to disrupt the supply chain. If multiple nodes within the network stand up and strike together at strategic times, workers could gain bargaining power for better pay, working conditions, and union recognition.

## Conclusion

This paper explored a comparison between older models of production and distribution and our contemporary moment, defined by major e-commerce companies and typified by Amazon. Our analysis demonstrates the ways in which labor organizing is hindered by Amazon's model as well as the potential vulnerabilities in Amazon's network that can be used to "choke" Amazon's supply chain. Amazon's hybrid model combines elements of Fordist and Taylorist and post-Fordist labor relations, which both creates opportunities for, and challenges to, worker organization efforts. In what follows we offer some concluding remarks about the challenges and opportunities for organizing logistics workers in the contemporary moment dominated by e-commerce.

Social scientific interest in the logistics sector and its workers rose alongside the deindustrialization of the U.S. and the concern over disappearing stable jobs for blue-collar workers—an apparently massive process in the late 20th century. Though there is some discussion of "bringing back" manufacturing to the US (and other advanced countries), it may be that this is, in fact, unlikely (much of crucial manufacturing today occurs in world regions with lower paid industrial workers). Our own view is that ports/transport/logistics are likely to remain quite critical parts of our economy in this country—and we are very skeptical about the reality in our country of "bringing back" manufacturing. This means that labor organizers need to focus on the logistics sector to ensure better working conditions for the jobs that continue to become available to US blue-collar workers. Even when manufacturing is located within the US, labor organizations focusing attention on the supply chain side of the business is good strategy. This is because when worker organizations can map supply chains, they can use a selective strike strategy that limits worker risk, maintains strike funds, and channels maximum disruptive power (Kassem, 2022). This can be seen in the UAW's strike strategy against the big three auto manufacturers. The UAW targeted selective sites for "stand up" strikes that

were meant to disrupt the supply chain with the least possible workers needing to go out on strike. This strategy limited loss of pay to workers and maintained the strike fund (Kuttner, 2023). The agreement reached between UPS and the Teamsters union in summer 2023 may be the most striking example of the power of workers in the logistics sector, with workers winning large wage increases, thousands of new job opportunities, and better working conditions from highly profitable UPS, an agreement that avoid potentially massive costs to the U.S. economy (Gurley, 2023). Fundamentally, logistics are central to the logic of 21st century capitalism. Amazon is creating a new hybrid model of logistics that seeks to avoid inefficiencies and vulnerabilities in earlier forms of capitalism. Labor organizations need to understand, strategize, and organize to succeed in this new era.

Companies like Amazon continue to engage in multifaceted strategies to control and reduce labor costs, such as opposing unionization, seeking highly exploitable workers, and utilizing technological advancements to cut down on labor costs. In fact, Vallas et al. (2022) highlight the practice of “managerial bricolage” where multiple simultaneous mechanisms of control exist that resonate with different groups of workers performing different tasks—which has the impact of further segmenting the workforce and impeding organization efforts. Strategies include the expected coercive controls, but also ones that generate consent by constituting workers as “individual subjects” who control their own work experience (unpaid time off policies, tier work, transferring). This produces a multifaceted employment nature even in a single warehouse, and further suggests that correspondingly multifaceted strategies are necessary to unite all workers. One such strategy is an anti-racist approach to organizing—typified by grassroots labor organizations like Amazon Labor Union and Amazonians United—in order to unite workers across socially constructed antagonisms that lead to the racialization of workforces. Yet, the extent to which Amazon warehouses transform working conditions for entire regions also raises the question of community opposition to continued logistics warehousing. This highlights how the company’s handling of real estate asset control and site selection also reflects its hybrid model.

This is reflected in Southern California’s Inland Empire, which was the site of the first organized labor action at any of Amazon warehouses and is also a case that demonstrates Amazon’s ability to position itself favorably to landlords and developers, whose tenancy only raises the value of warehouses as investment assets. External factors also affect the availability of jobs at companies like Amazon, and therefore the potential to make those jobs “good jobs.” The Otay Mesa region of San Diego is part of a cross-border trade axis that connects Tijuana to San Diego (which are both without a seaport). As more and more cargo moves across the border each successive year, there is increasing stress on infrastructure and a rising cost of doing business due to delays (SANDAG, 2021). Some insiders warn of a freight funnel narrowing and argue that, without adequate investment in cross border infrastructure, the region’s future competitiveness could suffer (Cassidy, 2019).

In contrast, some places in Amazon’s network have a more stable positionality. The Northern Kentucky region is not facing the same set of potential problems as the Otay region of San Diego. Kentucky offers what is often thought of as a good business climate: it is a “right to work” state that generously caps jet fuel tax for airline companies, and it offers tax reductions to expanding companies (Negrey et al., 2011). Furthermore, Kentucky gave Amazon \$45 million in incentives to procure the e-commerce giant’s central air-hub (Thompson, 2021). It is safe to assume that the state will not be on the side of labor in any future labor battles.

Many questions remain as to how workers can organize within and across Amazon’s distribution network. What is likely to happen in the future of global capitalism and the logistics industry? Will robotics and technologies like drones and self-driven vehicles cut labor costs? None of this is certain: but these are certainly potential “issues” for Amazon workers. Nowadays, we are seeing that Amazon is testing this technology (and a number of innovations in it, too). How will this play out in the years to come? Finally, Amazon seems to be both eager to oppose labor organizing but also to enforce policies that make workers precarious and prevent their forward progress. This provides daunting

challenges for labor organizing at Amazon and could potentially spread across the economy as Amazon becomes a standard setter in both logistics and retail.

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