Transport

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Transportation, that is getting something or somebody somewhere, is the key mover of human life and society. Since its inception humanity has conceived a plethora of technologies to facilitate this task: the wheel, the shoe, the basket, pack animal breeding, the ship, and so on. Beginning in the early 1800s, the era of mechanized movement set off a marvellous distribution of mass transportation: we have come a long way from the 40 kilometres of railroad tracks between Stockton and Darlington, opened in 1825, to over one million kilometres of global railroad networks today. Carl Benz, in 1886, could hardly have dreamed of our estimated 1.4 billion cars. The first international commercial airplane carried one passenger from London to Paris on 25 August 1919. Today, there are four billion air travellers per annum (World Bank, n.d.; International Union of Railways, n.d.; Foster, Cromer, and Purdy 2024).

This figure-laden 'techno-tale' of ever-increasing global transportation and thus interconnectivity is well-known but also misrepresentative. First of all, it tends to conceal that transportation has not only worked *for* people but also *against* them, most cruelly in the Atlantic slave trade or Nazi deportation. But even if we leave this darkest side of transportation aside, the master narrative of global integration is still misrepresentative. It ignores the contradictions inherent in transport and mobility: transportation systems do indeed accelerate, but they also immobilize (→ **Im/mobility**); they connect, but they separate at the same time.

Such contradictions are encapsulated in the concept of dis:connectivity, which entails the simultaneity of connections and disconnections. Rejecting popular but simplistic assumptions of a binary between the two, dis:connectivity helps us to shift our focus to delay, interruption, and resistance and to regard disentanglement and exclusion as formative elements of interconnectedness: these aspects have deeply informed the development of global transportation and the making of global connections since the nineteenth century. The concept of dis:connectivity also proposes to explore tensions and the complex dialectics of globalisation. Acceleration-cum-standstill and connection-cum-disruption, the two contradictions outlined above, are characteristic of many processes of globalisation in the past two centuries. Focusing on passenger transportation, we will explore both aspects in some detail on the following pages.

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Acceleration and standstill

It is obvious that steam, automobility, and aviation have drastically reduced long-distance journeys from weeks to days and hours. A primacy of speed had dominated discourses on transport since the first half of the nineteenth century and upper-class passengers, in particular on trans-oceanic journeys, demanded ever-faster trips (Faugier 2017). The first passenger steamships crossed the North Atlantic in less than twenty days in the 1830s. One hundred years later, the fastest passenger liners required only four days. In 1939, the first commercial airplanes to carry passengers from the United States to Western Europe took 27 hours.

The primacy of speed also came to dominate the post-World War II boom period with its highways, high-speed trains, and jet aircraft. However, it has been tailing off more recently in light of financial and environmental crises: the supersonic jet Concorde needed three and a half hours to cross the North Atlantic, but it was decommissioned in 2003. According to Peter Lyth, the cost prohibitive operation of Concorde, which has still no successor to date, exemplifies the limits of unconditional speeding-up and marks an endpoint to the quest for ever-greater speed (Lyth 2020).

This quest had always been merely academic: standstill is part and parcel of transportation. Large-scale breakdowns caused by a volcanic eruption, Brexit, COVID-19, or a container ship stuck in the Suez Canal are the fissures in transport systems that make worldwide headlines. But breakdowns happen every day and practices of repair, maintenance, and tinkering are crucial elements of our transportation systems (Graham and Thrift 2007; Pooley 2013). Congestion is the everyday experience of commuters around the world. The European air space was closed for one week following the eruptions of Eyjafjallajökull in Iceland in April 2010. Compare that to the less newsworthy six full days lost on average to traffic congestion by London road users in 2023 or the 89 hours in Mumbai. In Lagos, commuters are said to spend an average of 30 hours per week in traffic (Tomtom 2023; Obi 2018). Waiting (→ **Waiting**) in a traffic jam, at traffic lights, in line at the ticket booth, at an airport gate, for the train, and so on is thus the 'often-inevitable and frequent experience woven through the fabric of the mobile everyday,' as David Bissell (2007, 277) calls it.

Yet not all users have to wait for the same amount of time. The extent to which they can speed up depends on the chosen means of transport, its capabilities, the physical environment through which it is supposed to move, and the users' readiness to pay more than others (e.g. for a direct flight, priority boarding, or an express lane). Neither the experience of acceleration nor that of standstill are thus universal. Andrey Vozyanov (2015, 70) reminds us that while it was traumatic for air travellers, 'the Eyjafjallajökull volcano eruption in 2010 was hardly noticeable to those who could never afford a flight.'

Connection and disruption

Exclusion (→ **Exclusion/Inclusion**) is equally as important to the history of transportation as inclusion. Both processes frequently went hand in hand with regard to both places and people: what a focus on dis:connection puts at centre-stage are the many processes of making and unmaking connections in the process of integration. There is a cliché that new technologies possess the power to annihilate time and space. However, rather than erasing them, transport lanes do in fact create and alter spatial relations (Schivelbusch 1986).[1] The cosmopolitan coast, for instance, is distinguished from the hinterland because it has access to sea transport. Railroad expansion in the United States was thought of as a powerful tool of territorial integration. By the turn of the twentieth century, the same language of opening-up permeated the infrastructure (→ **Infrastructure**) projects developed by European empires to interconnect the imperial sphere and extract their colonies' resources.

Still, connectivity, that is access to a network, is not a streamlined process but a bumpy road. Take aviation: aircraft before World War II could only fly for comparatively short distances and had to make many scheduled intermediary stops to refuel and stay overnight. This put peripheral places at the centre of global maps, as Ruth Oldenziel details for the Pacific islands of Guam and Midway: both had first become important stopping places for steamships restocking coal. They lost their importance when ships began to run on fuel, only to resurface a few years later again as refuelling places for aircraft. When airplanes became able to fly for longer distances after the mid-1940s, intermediate stops were given up and both islands, as well as many other places which had been connected for a brief moment of time, fell into oblivion (Oldenziel 2011).

Centres and fringes of transport networks align with broader cleavages within and between societies. The availability of public transport systems across a cityscape, for instance, reflects the distribution of wealth as much as the question of who should be granted facilitated access to city centres. On a global scale, the availability of both individual and public transport systems confirms this observation. A brief look at a map tracking commercial flights is indicative: while North America and Europe are plastered with aircraft in this very moment, the African sky is almost empty. Accessibility and usage of modes of transport is likewise highly uneven. Inequalities permeate many historical and contemporary day-to-day transactions. They are based on categorization along the lines of income, class, age, gender, race, nationality, or physical ability.

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1 For this debate, see also Roland Wenzlhuemer, *Connecting the Nineteenth-Century World. The Telegraph and Globalization* (Cambridge University Press, 2015).

In the U.S. South, a colour line prevailed until the 1960s across all aspects of social life, including buses, trains, and airports. Racial segregation, governed by the so-called Jim Crow laws, was introduced for transportation in some areas as early as the 1880s and officially sanctioned in 1896 when the Supreme Court confirmed Louisiana's separate train cars. With transportation being a prism of U.S. racial segregation, the entirety of the Jim Crow society later came down to the question of 'mobility justice' (Sheller 2018): it was a case of civil disobedience in public transport that fuelled the civil rights movement in 1955 when Rosa Parks refused to give up her seat in a Montgomery bus. Following her arrest, Black Montgomery citizens created their own alternative infrastructure system. They boycotted the city's buses for more than a year but remained mobile during that time through self-organized carpools (Bay 2021).

The Civil Rights Act of 1964 outlawed transport discrimination, but uneven mobilities persist and are inscribed in the built environment. Seemingly neutral infrastructure systems carry in themselves – intentionally or not – practices of exclusion (Winner 1980).[2] Infrastructure planning forcefully demobilizes or cuts off certain groups and their preferred modes of mobility in order to facilitate the movement of others. A case in point is the expansion of automobility since the 1920s which caused the elimination of traditional street uses and forced non-motorized forms of movement aside. Ironically, the oversupply of cars and the resulting congestion simultaneously belied the ideal of uninterrupted motor traffic flow. We have outlined these two contradictions inherent in global transportation systems – connection-cum-disruption and acceleration-cum-standstill – in the previous sections. In the remainder of this contribution, we will focus on one particular case, the development of automobility in the city of Rio de Janeiro, to demonstrate that these two contradictions also persist on a local level.

Dis:connected mobility in Rio de Janeiro

Beginning in the early 1900s, the city's elite imported the first cars from Europe. Rio's car ownership rose from twelve cars in 1905 to a little under 10,000 cars in 1926 (Miller 2018, 104). Car enthusiasts worked towards broader car ownership and the popularization of car culture in Brazil, using automobile magazines and newspapers to disseminate the idea that cars were engines of modernization and progress (Wolfe 2010). In stark contrast to this notion, however, stood the reality of traffic flows in Rio. Congestion shattered dreams of traffic flow early in the twentieth century. Then, auto enthusiasts not only blamed pedestrians when traffic got

2 For an objection to Winner's argument, see Bernward Joerges: "Do Politics Have Artefacts?" *Social Studies of Science* 29, no. 3 (1999), 411–431.

clogged, they also complained that they had to share street space with horse-drawn vehicles and streetcars (Revista de Automoveis 1912). However, drivers soon had to learn that automobility's own spatial expansion did much to worsen the problem. In November 1949, the city saw its worst traffic jam yet, with up to 10,000 cars lined up over a three-mile stretch, unable to move for the better part of the working day (Miller 2018, 271–72). Getting stuck in traffic jams became a daily routine for commuters. There were far fewer competing users on Rio's downtown streets than in earlier decades, but with about 140,000 cars by the 1960s, there were now simply too many.

The growing demand for parking only aggravated an already bad situation. In the search for space to store their cars, motorists parked on narrow streets, public squares, and sidewalks. As Shawn William Miller notes, the city council, like so many other municipal administrations in Brazil and elsewhere at the time, 'concluded that the only solution was to build more space for the car – more lanes for driving and more lots for parking' (Miller 2018, 271). Consequently, the car's massive occupation of space even when not in motion further minimized the potential for alternative forms of street use and transportation. For centuries, Rio's streets had been a place of play, sociality, and commerce; they had been urban commons where all sorts of people engaged in all sorts of activities. When the automobile arrived in ever larger numbers, it erased many of these former functions, transforming streets into a space that, according to Miller, served 'the linear function of mechanical movement' (Miller 2018, 4).

Not only was the impact of the automobile on people's daily lives disruptive; in many instances it was disastrous. As early as 1913, Rio's newspapers published daily reports on fatal accidents with authors lashing out at incautious drivers who were 'ceaselessly killing defenseless city residents, especially children' (*O Paiz* 1913). Faced with widespread opposition, the proponents of motorization fought back, seeking to radically change the public discourse on traffic-related issues. On a quest for an exclusive right to street use, they looked to other countries, particularly the United States, where Los Angeles and other cities had made 'jaywalking', that is walking in traffic, a crime (Norton 2008). Brazilian car-lobbyists, supported by auto-related U.S. businesses, blamed 'reckless pedestrians' for most accidents (*Correio da Manhã* 1929). By the 1930s, more and more people accepted the idea that deaths caused by motor vehicles were an inevitable price of modernity (Miller 2018).

The car conquered urban spaces, especially the downtown areas. Discursive strategies, and, perhaps more importantly, the automobile's potential for destruction, did much to secure the greatest share of the street for drivers. Today, there are over 300,000 cars circulating in the city and Rio's drivers endure an annual average of 78 hours of congestion. Awareness for the problematic dominance of cars has recently grown within the city council. In 2012, a Bus Rapid Transit (BRT) was

launched, using express lanes on the major thoroughfares, and reducing commute times by 65 percent (Prefeitura da Cidade do Rio de Janeiro 2023). Much of the historic district is now also accessible by light rail and Rio's beachfront avenues are closed to motor traffic on Sundays and public holidays, allowing citizens to reclaim the streets and make them pop-up urban commons, much as they used to be before the car.

This development is emblematic. Many cities around the world have dealt with similar boom phases of individual motorization since the 1990s, especially those with rising middle classes in Asia, Latin America, Africa, or former Soviet republics. But despite 1.4 billion cars plying the roads worldwide today, nowhere has the car become fully hegemonic. At least since the 2010s, cities around the globe have invested heavily in BRT and metro systems to tackle the problem of congestion. Walking is arguably still the most common form of movement and urban bicycle culture has persisted since the 1900s. Different modes of transportation thus always exist in parallel; they coincide and coalesce (Mom 2015).

Transportation via water, rail, road, and air has indeed tremendously expanded over the last two centuries, on both local and global scales. The concept of dis:connectivity reminds us that delay, malfunction, and disruption have as much been part of the story as faster travel and increasing connectedness. Wherever new transportation networks connected specific places and people, they left other places and people unconnected or even cut off existing connections. Those affected sought ways to subvert exclusion and they resisted the limitation of alternative forms of movement. Recent scholarship has begun to explore these complex dynamics of transportation, but much remains to be done. Studying them within the framework of dis:connectivity enables scholars to pursue a dialectical take on transportation and provide a corrective to narratives of ever-increasing global connectivity.

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