Chapter 5 – Media of Separation

Figure 1: A family spends the afternoon at the Waal river, as seen from the Tiel control room in the summer of 2018. Figure 2: Photo of a radar-AIS interface in the Zandvliet control room, located in the port of Antwerp, taken in 2017.

"There is an enormous shortage in skippers," says Jerry, a skipper on a 135-meter long container ship, as we leave the Duisburg container terminal, heading for Rotterdam (Field note 29.3.17). Jerry explains that inland navigation is a "closed world, not many new people get in, also because it is hard to combine with a social life." (ibid.) There was a time when many families lived on board, but most family members have left the ships and now have a home on land. Many skippers left too, some of them became operators. Those left work long solitary shifts.[1]

Still, they manage to achieve quite a lot. Much of the international transport to and from the Netherlands is done over inland waterways (Filarski 2014, 357) and in 2014 Dutch ships made up 60 percent of the cargo capacity of the entire Western European fleet (374). Between 1950 and 2003, the Dutch fleet went from 17,000 ships to under 5000, while the transported tonnage grew 64 times larger over the course of the last two centuries (359). So, a significant economic contribution is made by a relatively small group, in 2014 of just over 17,000 people (374).

This requires ships to be almost constantly on the move. By following not only actors but also practices across multiple sites this chapter reveals how navigating

1 An earlier version of this chapter appeared in *Mobilities*, titled "Follow the Action" (2020).

inland waterways is accomplished both on water and on land. Thus far the static view from land has been dominant in this dissertation. This resulted in a double deficit: mobility and water were only studied from afar. The first deficit is inherent to the workplace studies on control rooms: most have reinforced the centrality of the control room by neglecting what is outside, whose movement is coordinated from inside. To counter this, I have mobilised my method and travelled with actors in the field. The field of mobility studies (cf. Sheller and Urry 2006) has managed to do this consistently. Through its interest in practices, integration with the fields and disciplines I have drawn on most so far—media studies, (historical) anthropology, workplace studies, and sociology at large—is possible.

In 2014 Anim-Addo, Hasty and Peters signalled a preference within mobilities studies for "mobilities ashore" (2014, 337). What's more, they determined the "absence of the sea from explicitly focused mobilities research" (341). The same is true for inland navigation, rivers and canals. The remedy would appear to simply study these types of mobilities more. After all, the promise of the mobilities paradigm is that it "remedies the academic neglect of various movements, of people, objects, information and ideas." (Büscher and Urry 2009, 99) It is suggested here, that in order to address this second deficit, sea and riverine mobilities should be studied more without replicating the land-water dichotomy, because that is what enabled the neglect in the first place. Anim-Addo, Hasty and Peters thought, following Steinberg (2013), that the explanation for the lack of scholarly attention for shipped mobilities partly lay in "the broader tendency in Western thought to see the sea as a lifeless backdrop, a realm distinct and distanced from the land." (341) As discussed in the first chapter, water has been made into a modern abstraction, clearly separate from land (cf. Linton 2010). While this conceptual hygiene is central to the modernist project, everyday practice is made up of hybrids (cf. Latour 1993). Thus, central control-local agency, land-water, and also nomadic-sedentary are oppositions often refuted by actual practices, as is the case with the practices presented here.

So, despite the fact that skippers live a radical mobile life compared to most, their mobility should not be essentialised. Rather, it is interesting to look at the blurry "interplay" between "movement and stasis" (Ramella 2018a, 336), and see how "the work of 'mobilizing' and 'immobilizing'" (Büscher, Sheller, and Tyfield 2016, 490) happens both *from* land and from water, and *with* those on land and on water.

This chapter benefits from practice-oriented work done in adjacent fields, which explicitly goes beyond the land-water dichotomy. Laura Bear's invaluable research on navigation of the Hooghly river by pilots covers both work on the river and the bureaucratic and capitalist structures that obstruct safer practices (2014, 2015) — Bear's work is also discussed in conjunction with Penny McCall Howard's equally impressive on work Northsea fishermen (2017) in the conclusion of this book. Ashley Carse has done great work on the Panama Canal, both on how the surrounding jungle became the catchment for the channel and thus nature became infrastructure

(2012, 2014) and how the canal is navigated (2020). Especially in the first two studies, Carse shows how any thorough understanding of the Panama Canal depends on both a land and water(way) perspective. Also relevant, in light of the land bias, is the work done on delta's (Morita 2016; Krause 2017) that aims to be explicitly amphibious (cf. McLean 2011).

The mobilities studied in this chapter were centred around waterways, but never stopped there, nor did the ethnographic fieldwork. The result is a three-pronged argument. One, it is shown how mobilising and immobilising is done through constant (re)positioning in four different orderings. Two, these navigational, regulatory, market, and intimate orderings are ongoing alignments of particular assemblages of human and non-human actors from across the land-water spectrum. And three, often actors need to give the market orderings priority and rearrange the other orderings accordingly, which results in palpable pressure, manifested in different problems of time. In all of this, (nautical) media play a central role: they keep separate what would otherwise collide and connect to deal with separation.

This chapter connects with a whole range of studies that have shown what bearing the brunt of achieving mobility looks like. Taxi drivers' bodies in North-American cities "recalibrate to the time of others as a significant condition of their labor." (Sharma 2014, 20) In U.S. truck driving practices "risks are absorbed in drivers' bodies" (Snyder 2016, 124). Those on board of inland navigation ships absorb risk too, though it is not as dangerous or exploitative as seafaring (Abila and Tang 2014; Roberts et al. 2014; Ellis 2018; Jensen and Oldenburg 2019). As in trucking in the U.K. (Gregson 2018), sanitation is an issue in inland navigation, as wheelhouses typically lack toilets, these are downstairs, while most of the time skippers are alone at the helm.

Here, I follow this line of work, but also seek to complicate the object of inquiry more than has previously been done. To gather steam and come into motion, or seeking to moor while being on the move requires far more than mastering navigational ordering: it involves (re)positioning oneself in regulatory, market, and intimate orderings, with multiple temporal problems unfolding that need to be negotiated.

In this chapter, I will highlight how the pressures the people in the field endure and mitigate manifest themselves temporally: in addition to being (just) in time, actors try to save time by accelerating, or even steal it, by cutting a corner and make others go in reverse; some manage to cunningly create time; synchronous pockets of time are coveted, especially with loved ones, but (4/5G) network coverage is often lacking; waiting time is a challenge as the isolation of the depopulated wheelhouses is felt; while sharing time with people not on board requires careful planning and bodily risk.

In the ensuing section, the methodology of this chapter is introduced, after which an overview of the field sites is given through the process of boarding ships. The empirical material is presented subsequently, in four sections, each containing

several episodes. Such is the progression in this dissertation—historiographical questions about rivers, land, and control lead to a meandering first chapter, which arrives at the transformation of skippers into operators as reflected in the media history of the control room in the second chapter, from where the contemporary visibility and accessibility of the control room in the light of its representational and architectural history became the focus of chapter three and four—moving from the diachronic to the synchronic, that ever more material has to be distilled, which results in an ever tighter structure, as should have been apparent in the previous chapter and even more so below.

5.1. Navigating research: follow the practice

This chapter is based on three methodological steps, in which the key theoretical assumptions are anchored. The basic premise underlying all these steps is that mobilities are best understood as practice and should therefore be studied ethnographically.

I. Following actors empirically

The first step is to "empirically follow" actors (Gherardi 2018). If actors are on the move, so too should the ethnographer. This is a point that Büscher and Urry make (2009), and is why I ended up boarding almost every type of ship on Western European waterways after I had learnt how traffic at critical intersections and in ports is coordinated from control rooms through intense interaction with ships. Wherever I went on board, I visited control rooms. As a result, I can now present an understanding of inland navigation, which emerged as much from a mobile as immobile perspective, as some intersections were studied from the control room before they were ever crossed on board. Operators also actively encouraged me to do fieldwork on ships; and on two occasions operators brokered access to a ship.

II. Action is distributed and dependent on media

Following actors made visible that they can move because of distributed activities. The critical action hardly ever happens just in one place. This is why sustained participant observation in one control room or on board of one ship would not have sufficed, as the key is to understand the interactions that make up inland navigation. Therefore, as a second step, a "distributed" (Schubert and Röhl 2017) mode of ethnography was necessary. It became clear that maintaining a safe distance between hull, embankment and riverbed is an accomplishment across different sites, achieved through sociomaterial assemblages.

Media play a decisive role in these assemblages. Media are defined here as technologies that actively mediate between different actors, radar being a good example. Through beams of microwaves it connects to other objects and helps identify other actors, which enables maintaining (minimal) distance. Media allow smaller margins and more risk, but not on their own. Like with a sonic depth finder, which critically mediates between skipper, hull and riverbed: it does not keep the riverbed and the hull of the ship separate by itself, a skipper has to act on the indicated distance, based on experience with an ever-changing river. Furthermore, it is important to stress that separation seldom means disconnection: in the case of the sonic depth finder, distance is the measurement of the time that acoustic waves take to connect with the riverbed and return (cf. Borbach 2020, 2024). What it boils down to, especially in mobile nautical work, is that nautical media enable the control of distances.

III. Follow the practice of ordering

What is built through assemblages across all those sites? How does acceleration, temporisation, and mooring come about? Lucy Suchman's concept of "orderings" best explains this (1997). An ordering consists of "local interactions of participants" (ibid.), and is particularly apt to capture both the temporal *and* the spatial aspect of the organisation of mobility. Like with aviation or rail traffic, inland navigation is rife with critical events where spatiotemporal control needs to be achieved. More than 'arrangements', 'constellations', or 'networks', orderings emphasise a necessary spatiotemporal intervention, both in creating distance and drawing things near.

The notion is introduced in Suchman's "Centers of Coordination" (1997), central to the workplace studies on control rooms discussed in the previous chapter. There, she brought together many studies on control rooms (Harper and Hughes 1992; Heath and Luff 1992; Filippi and Theureau 1993), including her own on airport ground operations rooms (Suchman 1993). Central to the organisation of mobility was the idea of "ordering[s] from within" (Suchman 1997), which other studies on control room work had also emphasised (Button 1992; Harper et al. 1997), though not as clearly integrated into a practice theory. Instead of an overarching external order, orderings only come about "in the mundane reproduction of everyday activity" in which "the social world is reiterated." (Suchman, Gerst, and Krämer 2019) One might think a schedule is an external order, but even in aviation control rooms or train dispatching, in which schedules are important, mobility is not the result of the execution of a schedule, but of "situated action" (Suchman 1997) or "situated organisation" (Heath and Luff 2004, 117). A word that is often used in control room studies in this respect, which seems apt to describe work in the wheelhouse too, is "ongoing" (Suchman 1993, 114; Heath and Luff 2004, 117).

In this chapter, two steps are made beyond Suchman's work and the control room discourse: 1) orderings are studied from both the mobile and immobile perspective,

in the control rooms and on board of ships, and 2) the notion of orderings is expanded beyond the direct organization of physical movement.

The first point follows logically from the prioritisation of the locale of interactions, which is more than a consequence of following the actors. It is about following ongoing situated action across sites. However, this has rarely happened in studies on centres of coordination, nor is it common for mobile ethnographies to substantially draw on immobile sites. There are four studies that have combined mobile and immobile perspectives: Johan M. Sanne complemented his air traffic control fieldwork by joining the cockpit during flights while focussing on safety (1999); in her ethnography on labour, austerity, and infrastructure Laura Bear followed a variety of workers on and along the Hooghly River (2014, 2015); Benjamin Snyder studied both truckers and their dispatchers ethnographically as part of a broader interest in the disrupted workplace (2016); and Anna Lisa Ramella observed how rock musicians, both when on the road and at home, perform mobility and immobility through practices of mobilisation and immobilisation (2018a, 2018b, 2021). All these studies informed mine, but especially Snyder and Ramella sensitised me to issues of coordination, rhythm and temporality. Still, none were as interested in the trajectory of ongoing situated action across sites, nor tried to capture how so many different actors manage to relate to each other on an everyday basis. To follow practices of ordering allows for scaling up and seeing how inland navigation works.

Therefore, the second step beyond Suchman's understanding of orderings is to consider other activities as orderings, as long as they are intertwined with the organisation of the physical movement and require active intervention. Although not as rigorous as grounded theory, the four different types of orderings—regulatory, market, and intimate, in addition to navigational—are rooted in what I observed in the field, and thus not an external order of my own that I projected onto the field a priori. It became clear that skippers and operators were not only involved in accomplishing navigational orderings, or to put it differently, navigational orderings were depending, both in constraining and enabling ways, on three other types of orderings.

To conclude this section, it can be said that it is not enough to mobilise methods when trying to understand complex modes of mobility such as inland navigation, as will become apparent in the following sections. The three steps described above—follow actors, distributed across time and space, brought together in situated action—are part of one approach, which can be summarised as *follow the action*.

5.2. Boarding the ships

I have already written quite a bit about the accessibility of control rooms. As for the second strand of ethnographic fieldwork, conducted on board four different Dutch

ships—sailing between the Netherlands, Belgium and Germany, mainly focussing on the Rhine and its tributaries and branches—I had thought access would be even harder, but it took little effort to convince skippers. The difficulty was more finding them, which always required an introduction by a family member living on land whom I had met in the field, and once through my social network. The four boarded ships—selected in an effort to capture the diversity of commercial inland navigation—were:

The *Tigris* (193 x 22 metres) is a push boat and part of a fleet that is owned through a Dutch shipping company by a German steel producer. It transports iron ore from Rotterdam to Germany in up to six large steel barges tied in front of it. It had a crew of seven with Pat and John as the captains.

The *Liberty* (135 x 11 metres) is a privately owned barge, as most ships are. The owners are a married couple, Rebecca and Rob, who were born on a ship themselves. They are chartered per voyage, so with the help of several agents they broker their next cargo while on the move, which is the dominant economic model.

The *Sunrise* (135 x 14 metres) is a container ship owned by William (and his brother), with Jerry as second skipper (who was quoted in the opening paragraph). They are time-chartered by an agency, which means that they do not have to broker their own cargo, and sail back and forth along the Rhine between Rotterdam and Duisburg. Time-chartered is financially stable, contracts often run for a year or more, whereas with chartered per voyage profit and loss are hard to predict.

The *Porter* (110 x 11 metres), a tanker owned by Maria and Philip, is also time-chartered. Tanker shipping is subject to tight regulation: fire drills were frequent, electronic devices were not allowed on deck (because they may ignite the fumes of the chemicals), alcohol was banned on board, and every freight required extensive documentation (Figure 3).

Principally, the ships could not stop for an unimportant passenger like an ethnographer to get on board. Therefore, either an inevitable immobilising moment had to be seized upon, for example in a lock, or a moment of synchronous movement had to be created in the form of another (smaller) ship making the drop off. Strictly speaking a ship is not completely immobilised in a lock, it is just that movement is vertical instead of horizontal. The *Liberty* was travelling down the German river Main. Rebecca texted: "could you come on board (…) at the beginning of the Main? We are there late Sunday evening late." (Field note 27.11.16) Shortly after, she called and said they would have to pass 40 locks on the Main, so predicting a time would be hard, but 23.00 was their estimate. We agreed that I would wait at a lock near Frankfurt from 21.00 onwards. Three hours later the *Liberty* crept into the lock with only 30 centimetres margin on either side and I climbed aboard. Rob and Rebecca explained that they had often been unlucky with the single locks, where traffic from the opposite direction had repeatedly called in first (ibid.).

Figure 3: Philip shows the documentation required for one 20-hour journey. Making their journeys accountable was primarily done by Maria. Authorities, for instance a Rijkswaterstaat patrol vessel, could demand to see these documents at any time, although in practice this never happened. However, the danger was not only a sanction from authorities. Stakeholders in the tanker shipping industry have agreed that a serious safety-related failure will results in the indefinite blacklisting of those involved.

The *Tigris* and the *Sunrise* could be boarded once they had docked. Both could tell when they would arrive in port, but not when there would be space to berth, so their arrival time was kept as a marker. For the *Sunrise*, I had to get to the Duisburg, Germany, container terminal, part of one of the world's largest inland ports. These infrastructures are not made for strangers, especially not those on foot. Public transport will only take you so far. While walking on the shoulder, trucks raced past. After registering at the gate, Jerry picked me up, handed me a yellow vest, and we boarded the ship while it was being loaded with containers (Field note 29.3.17). As told in the prologue, there as only one taxi allowed on the vast metallurgy grounds, which include private docks, to bring me to the *Tigris*. The estimated boarding time had changed many times. At 7.00, a boat picked me up in an industrial landscape. The *Tigris* lay mid-river, using the current to turn downstream while the boat dropped me off (Field note 11.10.18).

Boarding the *Porter* was a matter of synchronising movement. The *Porter* is a tanker and as such legally restricted in where it can moor—a regulatory ordering at work. After our rendezvous failed twice—every time the *Porter* had to leave earlier than expected—I was on my way to the Rotterdam port from Cologne when Philip called. They would leave any minute, so my best chance was to get to Dordrecht, east

of Rotterdam, where there was a mooring place they were allowed to stop at. When I got there, Philip called again and told me to go to the local inland navigation traffic control room, which I already knew well.

It turned out that Philip had asked for a favour through his brother-in-law—who is an operator in another Dutch inland navigation control room, upstream—had asked for a favour: could a patrol vessel drop off a passenger mid water? Knowing the limitations of tankers and the time pressure skippers are under the patrol vessel agreed. While I waited in the control room, the *Porter* could be seen approaching on the control room screens long before it came into direct sight. While the patrol vessel sailed parallel, its skipper could see the exact speed of the *Porter* on his interface, and reduced the distance between the two ships to a small step. On board, Philip told me that they had rented out their ship to an agency that arranged their freight, called time-chartered shipping, which made their lives more predictable financially, but gave them minimal control and therefore little insight into where they would be when (Field note 19.2.17).

5.3. Undetermined future: conflicting priorities in navigating rivers

In two episodes, it is explained how a ship sails from its current location to a near-future destination. Most actors involved want to know what the others plan to do, so they can imagine a near-future ordering in which there is place for them too. The future is indeterminate in the sense that there is no timetable, but depends instead on situated action. This does not yet explain how a voyage is completed, or how the cargo is found in the first place, but shows how ships move through small actions and what role the control room and other traffic play in this. First, it is argued that the most elementary orderings of navigations are made through the dual assemblage of accounting and steering clear, and then that at times a third position, that of the control room, is necessary to achieve this.

Episode one: accounting and steering clear—navigational ordering seen from the wheelhouse

This episode stands out as it does not directly cite from the field, but is based on a whole range of observations. This allowed me to formulate that at its most elementary level, navigation is the repetition of three steps in ever changing conditions: 1) separating hull-water-riverbed, 2) determining current position, and 3) relating current position to the near-future position.

The ordering of hull-water-riverbed depends on accounting for the water level, draft of the ship, and the width of the shipping lane. Most ships have a sonic depth finder, which is particularly important during low water and when a heavy cargo

is transported and the ship lies deeper, and thus margins are slimmer. Otherwise skippers can rely on the shipping lane, marked by buoys and drawn on their digital maps. The shipping lane is kept stable by frequent dredging and regular inspection by Rijkswaterstaat patrol vessels. At fixed, shallower points on the Rhine, national nautical authorities permanently sound the depth of the river and communicate this to waterway users as the "least measured depth".

The second step in navigation is determining the current position, which is, compared to shipping at sea, as Hutchins describes in his seminal work (1995), a relatively casual task. This is due to the familiarity of skippers with the river and the abundant access to visual markers on the river banks and beyond. This is best observed during a shift change, when the new skipper or helmsman climbs the stairs to the wheelhouse. During the day, with good visibility, the first thing she or he does is look around through the panoramic windows of the wheelhouse. At night or during thick fog, the first thing they do when coming up is ask, and orientate by looking at the screen that displays the nautical map indicating their position via GPS.

To link current location and future destination—the third step of navigation—does not require a detailed plan. Construction work on locks or bridges, and occasionally bad weather, may require an alternative route, of which are few. Navigation as "situated action" (Suchman 2007) is about how to navigate the shallows, bends and currents of the river itself and passing other ships (and objects like bridges and locks). Across the width of the shipping lane, passing arrangements can be made extemporaneously through marine VHF radio. If allowed, as is the case on Dutch waters, starboard-starboard passings are carried out too, making for a more diffuse traffic pattern. Apart from the occasional dredger or anchored ship, everything is on the move, which is difficult to change: bringing a ship to a standstill can take several kilometres, as we have learnt from the incident with the *Jaroslaw* in chapter two. This constant movement and limited intervening capacity is a key spatiotemporal dimension of inland navigation. It requires actors constantly to anticipate the next ordering.

Other ships are accounted for through an assemblage that involves scanning the waterscape optically, listening in to the local marine VHF radio frequency, reading the overview that the AIS offers and the picture of surrounding objects that radar provides. AIS (Automatic Identification System) is a geo-locative system that through radio signals exchanges names, GPS position, departure and destination of a ship, which are then plotted on the nautical map. This exchange of positions is not frequent enough to navigate directly on the basis of this information, but it does provide a sense of traffic out of sight, around a bend, which cannot be seen by radar because the embankment blocks the radar signal. The dissemination of AIS was subsidised by the Dutch state before it was made mandatory.

Figure 4: (top left) Tigris's console is positioned to the side to provide a clear view of the deck and sailors, as photographed in 2018. Figure 5: (top right) Captain Pat of Tigris in radio contact with those on deck tightening the barge's lashings. Only from the wheelhouse can you see if the whole combination of pushboat and barges is straight. Figure 6: (second left) A helmsman of the Tigris went to the bow, 180 metres from the wheelhouse, to help enter a port. The barges have no electronics, so no CCTV. His hand on his chest means he is talking or about to talk on his radio, indicating to the captain to leave the frequency. Figure 7: (third left) Philip, captain of the Porter, operates the bow thruster with his left hand as the ship moors in the Antwerp docks in 2017, allowing him to move sideways. The bow thruster is controlled with one hand, indicating both direction and power. Behind his hand is the double throttle for the main engines, between which his hands alternate. His right arm is on the rudder. Figure 8: While navigating the Western Scheldt, Philip adjusts the scale of his AIS-layered chart, as the estuary is wider and vessels sail faster, requiring earlier detection. The radar is displayed on a separate screen at knee height in front of him.

Figure 9: The captain of a ferry navigates with two adjustable propellers, the steering is done by rotation, while the rotation of the propellers depends on the angle of the two sticks. I joined two ferries: one on the Waal, the other on the Oude Maas in Dordrecht for several hours. These ferries are very manoeuvrable and fast, as they have to slalom through the up- and downstream traffic while crossing the river. Figure 10: Photo taken aboard the Liberty in late autumn 2016, just past Mainz, with fog clearly visible on the horizon. It is not often that it announces itself like this. The time of year means it is expected, but the exact appearance can often still be a surprise.

It allowed the minister of Infrastructure and Environment to argue in 2015, at the height of the conflict between operators and managers, that control rooms could make do with fewer staff (see chapter two). When skippers are outside control room territory, they make themselves accountable by sharing their intentions and propose passing arrangements amongst themselves through marine VHF radio.

To account for other ships is one thing, to steer clear of them is another. To move from the present ordering into the desired near-future navigational ordering, another assemblage is needed. The link between the two assemblages—accounting and steering clear—is made by the skipper (or helmsman). There may be more than one person in the wheelhouse, but for the length of a shift only one person is responsible for linking them (figures 4 till 9). The steering assemblage unfolds through the interplay between the river, the shape of the hull, the helm and rudder (connected hydraulically), the regulator of engines that power the propellers (most modern ships also have adjustable propellers up front, called bow thruster), the cargo (and how it is distributed), the skipper and the feedback she or he receives through CCTV cameras (detailing the separations in locks), the sailors on deck (communicating over the internal radio frequency), the engine display (with fuel consumption as an important parameter). In these complex assemblages, it is easy to overlook the role of the skippers' sensory faculty. When accounting for the environment and relevant objects and when steering clear of them, skippers are able to verify and complement informa-

tion through an interplay of their senses and media (cf. Willkomm 2014, 2022). However, to steer clear of unaccounted objects is difficult, for instance when fog comes in to fill the waterscape (Figure 4.10). Then reliance on mediated detection becomes near total.

On a river (unlike a canal) there are no long straight stretches, no stable volume of water, no even riverbed. This means that navigation at its most elementary level has a short time perspective in which present circumstances are manipulated to achieve the desired near future.

Episode two: Conflicting temporalities of navigation—seen from the control room

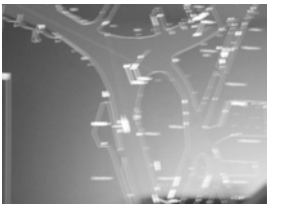
The basic picture painted in the previous episode is complicated here by describing the role of control rooms in different orderings. It reveals a fundamental temporal conflict in inland navigation between professional and leisure skippers. What becomes apparent is that the control room operators, when contributing to the accomplishment of regulatory orderings, are torn between market and navigational orderings.

To allow for safe and smooth passing at intersections and in ports, control rooms take up a coordinating role, as traffic is much more intense there. When everything is on the move, the place where this movement intersects becomes a "choke point" (Carse et al. 2020). The control room is elevated, not unlike air traffic control towers, but more than a direct view, an assemblage of (among other things) CCTV cameras, cargo databases, radar networks, and AIS, bundled into two rows of horizontally linked screens, provides a real-time overview. Every section on the river has a dedicated marine VHF radio frequency, and within control room territory, the operator as a rule takes the initiative when intersecting courses have to be smoothed out into new orderings.

The second episode evolves around leisure skippers. As a rule, leisure skippers are not deeply integrated in navigational orderings, relying primarily on direct sight to account and be accounted for. In the field, the presence of leisure skippers was met with little enthusiasm by skippers and operators alike, though, for a senior policy adviser at Rijkswaterstaat, the infrastructure agency of the Dutch state, they had found their place through a market ordering: "leisure skippering is a multi-billion Euro industry." (Interview 8.6.15)

In the previous chapter, I analysed how operators make their efforts to deal with leisure skippers public. Here, I focus on how operators keep track of them and are often asked by professional skippers if they have had contact with a particular yacht and know their intentions. In theory, this episode could be relayed afterwards on Twitter, were it not that this operator, Jan, is not on Twitter. He is the oldtimer who contributed to the oral history in the second chapter.

Figure 11: The P2000 display indicates that a skipper has run aground, a call made by operator Jan. It is "P 2", or Prio 2, which means it is urgent but not life-threatening. It is mentioned that it is a leisure skipper. Figure 12: The best operator Jan could do to get a view of the yacht, a few kilometres away from the CCTV camera, with a white sail out, left of centre. Figure 13: Failed attempt by the author to photograph the marked yacht, now at the intersection of the Dordtsche Kil and the Oude Maas. The lighting and movement made it hard to capture the interfaces photographically.

On a clear summer day in 2018, Jan was called by the skipper of a yacht over the frequency shared by all traffic in that section. With a distinctly upper-class accent, and using full sentences rather than the terse VHF radio lingo (both of which indicate that he is from another world), the man explained that he had run aground and damaged his keel and rudder (Field note 15.8.18). Jan issued an alert on the P2000 system (Figure 11) and searched for the ship by zooming in with a CCTV camera (Figure 12). The patrol vessel, which had just returned to Devil's Island at the end of its shift, was sent out again by Jan. Before the patrol vessel had arrived, a professional skipper had pulled the yacht clear, we could see on the CCTV screen. Jan was not surprised it was a professional skippers: "Another leisure skipper won't come and help." (ibid.) Over the radio the yacht indicated which port he would seek and thus how he would cross one of the busiest intersections of Western Europe, where traffic to and from the Rotterdam port, Antwerp port and Germany converge. When he subsequently did not sail accordingly, he was no longer replying to calls over the frequency. Jan was not surprised, as he had—"preventively" (ibid.).—marked him in a contrasting colour in his interface (Figure 13). Only Jan could see the marked yacht, he (a former skipper himself) had accounted for it on behalf of other professional skippers.

The regulatory orderings that operators seek to co-constitute are always tied between navigational and market orderings. Remember the official motto of the Rijkswaterstaat control rooms is "safe and swift". Apart from when he got stuck, swift was no priority for the leisure skipper, and his subsequent behaviour showed he did not share the same understanding of safety as the professional waterway users and regulators.

Linking a present location to a future course depends on the accountability of others as much as on giving an account. Where skippers act under ever-changing

time constraints, leisure skippers have all the time in the world. Operators assume a mediating role, a third position, in their attempts to reconcile these different temporal regimes into navigational orderings.

5.4. Just in time: navigating competition, speed and low water

The next three episodes are concerned with what is done to be just in time: skippers explicitly become competitors, taking more risks, with operators reaching the limits of what their assemblages allow. All these instances have to do with low water. For those ships chartered per voyage, low water results in lucrative freights, as more ships are required for the same amount of cargo to be transported—demand outstrips supply. Thus, it gets busier on waterways and ships sail faster (also afforded by lower weight) in order to pick up the next lucrative freight. To understand what is at stake in these episodes, rivers have to be understood as actors too, a view that was developed already in the first chapter, but now we can add the perspective from aboard.

Despite centuries of cultivation rivers are living. This is manifested not only in varying water levels, which, as discussed above, are kept a close eye on by skippers and authorities alike, but also in the current and the riverbed. Skippers know intimately how the current influences their course and speed, and where, closer to sea, it meets the tide. Through erosion and sedimentation, the currents mobilize and immobilize constantly, which is apparent to those who navigate it regularly, always in search of deeper waters and cautious to avoid sandbanks. During low water, the riverbed can change quickly. This is enhanced by the fact that all ships use only the centre of the shipping lane, digging a new channel in the riverbed as their propellers come close to it. People shape the landscape both by dwelling and through the paths they create, which renders a "taskscape" visible, in which "is sedimented the activity of an entire community, over many generations." (Ingold 2000, 204) In riverscapes paths are created too, often over long periods of time, sometimes quite suddenly.

Episode one: closing time window—balancing draft, speed and riverbed

The first episode is about being *(just) in time* and took place in 2016 on board the *Liberty*, owned by Rob and Rebecca, who we know from the episode discussed in chapter two, when I was asked to take over the helm. Their ship was built in 2002, just before the building frenzy of 2005–07, which led to an overcapacity after the 2008 crash that was still being felt in 2016. This meant that their debt (several million euros) was close to the value of the ship. Rob said he wanted to sail until his last day, Rebecca would have liked to be closer to her children and grandchildren, but knew they had to keep on sailing for a while as their pension depended on it (Field note 27.11.16).

On board of the *Liberty*, we crossed a threshold in the river, a relatively shallow and rocky part of the German Mittelrhein:

> Rebecca comes up to the wheelhouse because we scraped some rocks. When we hit a rock, Rob immediately halts the engine. "We have pulled it off again" Rob says to Rebecca and Leo, their sailor, after we passed the critical section. The water level is dropping. They are carrying a lucrative freight and would not have been able to make it half a day later. (Field note 28.11.16)

The legally allowed minimum draft is the depth of the shipping lane minus a 30-centimetre margin. We had exceeded that margin and had 10 to 20 centimetres left, Rob thought. Clearly, their market ordering was at odds with the ordering that regulatory bodies desire. Rob switched off the engines because they would make the ship dig in the water, positioning it deeper. Rob's relief that they had made it "again" suggests that this happens more often.

The conundrum of the *Liberty* was that it had to run for the dropping water level while the speed required to do so made the ship come dangerously close to the riverbed. The faster a ship sails, the more water its displaces from under its hull, bringing itself closer to the riverbed. Dropping water levels cannot always be foreseen, even when freights are brokered on short notice, as often was the case for the *Liberty*. Once presented with the closing window of opportunity, Rob and Rebecca decided to dash for it. As a result, they put their navigational orderings (hull-riverbed) at risk in favour of their lucrative market ordering, discarding the official safety norm.

Episode two: losing time—the collective problem of acceleration

The second episode took place in the late summer of 2018 on board the *Tigris*, which could not afford to approach the riverbed any further and had to take it easy. Meanwhile, it was surrounded by ships that could not afford to *lose time*. When other ships speed up, competition increases and so do inequalities. The operators then intervene and become referees.

The *Tigris* pushed so little ore that the barges in which it was loaded lay shallower than the sizable push boat itself. The crew was uneasy with every faster ship overtaking them or narrowly passing them, taking away just that little bit of water they had left. Then, an operator from the Nijmegen control room, which coordinates traffic on the Waal (the main branch of the Rhine in the eastern half of the Netherlands), intervened when we encountered a smaller ship passing on our starboard. "Give a little more space, for that is a pusher," the operator said over the shared frequency (Field note 13.10.18). In doing so, the operator demonstrated an understanding of our manoeuvrability and critical draft, preventing the passing ship from taking away from

under our hull the little water we had left. That the operator was capable of doing so, that he knew how to embody the relevant dimensions and foresee the critical variables at stake, almost certainly points to previous skippering experience. The grateful helmsman retold the story at the shift change.

This shows that if regulatory orderings are not actively construct when skippers give market orderings preference, navigational orderings risk running into the ground. The rules themselves do not prohibit passing at high speed; sometimes it is even safer to just get out of the way. Regulatory orderings allow for smaller margins in navigational orderings.

Episode three: stealing time—breaking agreements and consensus

In an escalation of the previous two episodes, here a skipper breaks with the consensually constructed navigational ordering to reposition himself favourably, which those involved considered unfair behaviour. He was effectively *stealing time* from other skippers.

This episode I observed in the Tiel control room, built at the intersection of the Waal and the Amsterdam-Rhine Canal. It took place earlier during the same 2018 low-water period (Figure 14). That day, the marine VHF frequency was filled with an unusual amount of swearing and heated exchanges among skippers. Ships coming out of the canal needed the control room, its elevated position overseeing the intersection and its radar network, to know when to turn up the river, either up- or downstream. All the approaching ships, many of them racing to their next freight, would listen in to hear what passing arrangement was proposed by the operator. Normally, operator Nicholas said, they would propose to give way by steering wide or reducing speed themselves, but during these busy days those skippers chartered per voyage could make up for an entire year of losses (Field note 17.8.18). A former skipper himself, Nicholas was acutely aware of the situation. Then, a barge turned up the river, though it had agreed to wait for the current batch of downstream traffic to pass. Several other skippers called in that this was not agreed, one had to go in full reverse to reduce speed, with the current pushing the ship forward. At that point, all Nicholas could do was confront the offending skipper on the radio, who, Nicholas thought, feigned ignorance. If there had been an accident, Nicholas would have had to make a report (like Dirk did with the pilot on the *Jaroslaw* in chapter two), and the tape of the radio conversation would have incriminated the rogue skipper.

This navigational ordering persisted despite one skipper breaking consensus. The norm of marine VHF radio communication in inland navigation is that passing arrangements are carried out as agreed verbally (and more fundamentally that agreement is sought in the first place). And yet, cooperation still took place if we follow Goodwin's definition of "co-operative action" (2013): action was enabled by and built upon the "former operations of others" (Schüttpelz and Meyer 2018, 175–6).

First, the deviant skipper benefitted from the overview the operator relayed over the frequency and from the adherence to the passing arrangements by the other skippers, which made them predictable. Then, the other skippers had to operate their ship in adjustment to the sudden move so that an ordering came about nonetheless.

The episodes presented in this section dealt with spatiotemporal scarcity. It is argued that the increased competition as a result of the scarcity makes the intensified interconnectedness of orderings visible. The decision to accept bodily risk might seem an individual one, but has collective ramifications. Operators try to salvage situations, but run into the limits of their agency as they rely on adherence to shared norms, and nudge rather than command ships into a desired ordering.

Figure 14: Two ships turning into the Waal as seen from the control room in Tiel during the low water period in 2018. Both have little or no cargo, as can be seen by how much of the hull is visible. The smaller barge in the middle, third from the right, is the only fully loaded ship, with its hull almost completely submerged. Even when loaded, these ships do not lie as deep as other ships. Their niche lies in the smaller waterways they can still navigate, which are off-limits to today's average-sized ships. As low-water periods become more frequent, these vessels will enjoy a new lease of life, challenging the dominant notion in shipping culture that scaling up, and hence massive investment, is necessary to survive.

Figure 15: The tanker in the foreground is turning downstream, so is already on the starboard side of the waterway, while the barge is rounding the buoy to turn upstream on the port side of the river, which is the wrong side. Often the traffic does not allow the vessels to move immediately to the right side and they have to arrange starboard to starboard passages with the help of the control room. These photos do not capture the exact situation described in episode three.

5.5. Resting time: navigating with assemblages of surveillance

This section consists of only one episode. It deals with the dark side of permanent accountability. The point is that being accountable all the time amounts to surveillance at the expense of rest.

The episode was told as a story by William, the skipper and owner of the container ship *Sunrise* (Field note 30.3.17). It related to charter per voyage, which he no longer did. From the skippers' point of view, the introduction of mandatory AIS for inland navigation—since 2012 in the port of Antwerp, since 2014 on the entire Rhine, since 2016 on all Dutch waterways—was controversial. As detailed in chapter two, Rijkswaterstaat subsidised the installation of transponders, but not the investment in equipment, but privacy was the main concern of the skippers, according to a policy advisor (Interview 8.6.15). Now skippers could be tracked at all times, not just by government authorities, but by anyone. Services such as the popular MarineTraffic (website and app, Greek-owned, Figure 16) plot AIS signals on a map—it offers the possibility of tracking a selection of vessels. The Dutch skippers stipulated that the

AIS information would not be made available to the general public, nor would it be used to enforce shipping laws, such as mandatory rest periods. The Dutch state has conceded both points, but this does not prevent skippers from sending their data and that of the ships they detect to services such as MarineTraffic. As did Rob from the *Liberty*, who said that agents use this information to offer voyages that might benefit him (Field note 27.11.16). Relatives on shore also use it to track where their loved ones are. On board, skippers can use official AIS data plotted on their charts. William from the *s* said

> that he knows of skippers that have an illegal switch built in to shut down their AIS. This is not only about privacy, but also about competition. William: "When several ships have to load at the same place, for instance from a sea ship, the person who arrives first gets his load first, the others have to wait for several hours. You know or can guess that you are on your way there too (plus everyone knows each other). If you then go for a sleep (which for the sailing time law has a mandatory minimum length of 6 hours, everyone knows this), the other ship can try to just overtake you, and that could end up in winning a day. For those chartered per voyage, this really matters." (Field note 29.3.17)

Here, to be accountable and to account for others, is where regulatory and market orderings meet. If the skipper decides not to rest and continues to sail, he risks not only bodily harm, but also a much more severe sanction than being caught with a 'malfunctioning' AIS signal. For the latter, there is a 24-hour grace period in which repairs can be made without central registration, so a skipper can always try to pretend to be within those 24 hours. The international regulation of sailing time consists of skippers documenting their sailing time in a centrally issued red book and infrequent inspections by local authorities. This book records the ship's movements over time and the activity of each crew member. The minimum number of consecutive hours of rest is six per 24-hour period and half the time over the course of a week, so 84 hours of rest are required. As there are no tachographs on board, the skipper can document whatever the rules require and act differently. This is a very sensitive issue that none of the skippers felt comfortable discussing. If caught in the act, a vessel can be banned from sailing further, and falsifying rest and sailing times in the logbook is a criminal offence.

Different tracking regimes clash, one digital, one analogue. AIS is supposed to track movement, but captures stasis too, whereas in the resting time book, it is the skipper who tracks his own bodily stasis. The latter reflects whether the skipper managed to pause, made possible by handing over the helm to someone else, while the former in this case reflects whether the ship paused or not. In this story, the market ordering is explicitly visible—on a digital map, the AIS shows all the competitors—and felt through surveillance. However, this assemblage depends on the

detailed knowledge of skippers of the wider fleet, and how regulation translates into particular patterns of movement.

Figure 16: Screenshot of MarineTraffic, the free web browser version, in which I tracked the Sunrise, and found it moored in the docks of the port of Rotterdam in 2017.

5.6. Asynchronous times: navigating shipping and family life

The main difficulty in intimate ordering is synchronising shipping and family life. Intimate orderings are far-reaching. There are orderings established between crew members, guided by nautical hierarchies and traditions, which are intimate too. The focus lies mainly on partner(s) and/or family who were not on board—as it is with these orderings skippers seemed most occupied—though the time and space shared in the wheelhouse and control room are raised too.

The distance has made those who are still on board increasingly reliant on media to keep participating in those intimate orderings. Life on board depends on more than nautical media, although they are routinely integrated into nautical assemblages. The problem is that those on land often live to different rhythm. There are two ways to draw family near: 1) to stack the intimate ordering on top of others, which means searching small synchronous pockets of time in which mediated contact is possible, or 2) to actively make meeting loved ones happen by negotiating through media between orderings.

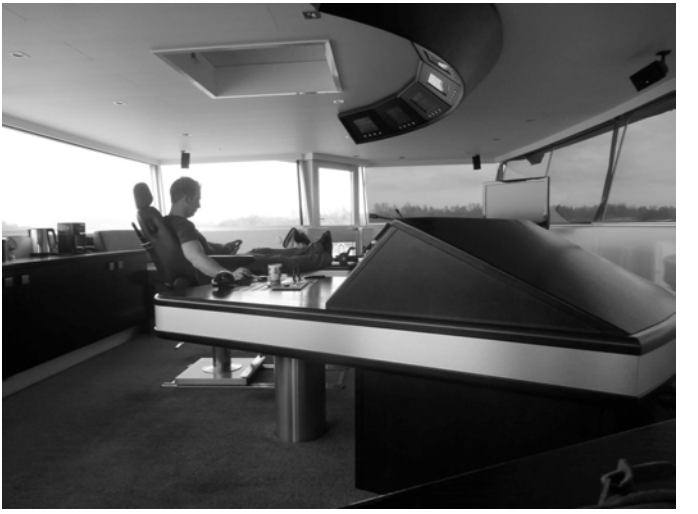
There are four episodes here: the first is an episode about finding pockets of synchronous time. Then I present an episode about relatively long stretches of solitary time, which were not solitary before. The third episode is about (in)tolerance during shared time with colleagues and the ethnographer. The final episode is about negotiating between orderings to share time and space with loved ones.

Episode one: pockets of synchronous time—stacking intimate orderings on others

At the very beginning of this chapter, Jerry explained how difficult it is to maintain a social life. He does not count mediated sociality as social. Work and social life—the latter understood here as intimate orderings—remain separate for him, even though he engages in various networked interactions with loved ones, some of which practices clearly predate the age of social media:

> Jerry has his girlfriend on the line (…). She asks when he will pass their house. He reckons around 1 or 2 o'clock, and says that is when William is steering. Connection is intermittent now, Jerry says he didn't get what she said. Routinely he says: "Not sure if you can hear me but perhaps it is better if we try to call later tonight, one bleep is yes, two no." (Field note 29.3.17)

Figure 17: Jerry—usually alone, but here accompanied by a photographing ethnographer—with his right hand at the helm and his smartphone in his left hand. Behind him on the left, a water cooker and a coffee machine, on the right a television, now turned off, but no toilet. Here the wheelhouse is in an elevated position (to be able to see over the containers the Sunrise is carrying), accessible only by outside stairs.



Jerry's girlfriend seems to be seeking a moment for them to be physically nearer, as their house is situated along the waterway the *Sunrise* will navigate later, but it becomes clear they live by different rhythms. William and Jerry alternated every twelve

hours, sharing a meal at shift change—both are one week on board and then one week off. Moreover, the near-real-time connection (notwithstanding the inevitable delay in transmission) is also slipping away. On every ship I have been on, I have witnessed actors struggling with poor mobile phone coverage. Mobile phone networks are clearly designed for different geographies of movement.

On the water befriended skippers sailed past now and again. At these instances, greetings were exchanged over the marine VHF radio frequency shared with all other skippers. On occasion, skippers would agree to switch to a separate frequency to chat as long as they were in radio range of each other. The pockets of time were never planned, but just happened spontaneously. In short, when stacking intimate orderings on top of navigational orderings, shared mediated time lasts as long as the connection holds.

Episode two: solitary time—media compete for attention

Especially during lonely night shifts, intimate orderings are far away. Retired skippers tell how night shifts used to be social events, filled with conversation and a game of chess (Interviews 5.1.18, 17.4.18). Now this time has to be filled in a different way. During the night shifts I was on board, the skippers were chatty, they seemed to enjoy having company for a change. Being alone in the wheelhouse is harder for women because the toilets are downstairs. As described in chapter two, in the limited time I was on board, I was asked twice and agreed to take over the helm when a skipper had to go to the toilet and her husband was asleep, even though I am completely unqualified.

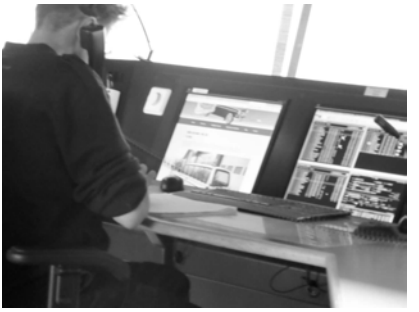
Otherwise, media keep the skippers company and are also used as instruments to keep them awake. Only the Tigris did not have a TV in the wheelhouse, and it was also the only ship where the night shift was not done by one person. The media—ranging from traditional scheduled television broadcasts to algorithmically driven on-demand viewing platforms or games on mobile phones—were used to fill the lonely hours, competing for attention with the navigational audiovisual input.

On the container ship the *Sunrise,* William and Jerry alternated every twelve hours, sharing a meal at shift change—both are one week on board and then one week off. Their sailor, Carlos, who was from the Philippines, visited the wheelhouse once during my two day stay, only briefly, his quarters were all the way to the front. Only on board of the *Liberty*, their (Czech) sailor Thomas was invited in twice daily for coffee and jumped in at the helm. The skippers and sailor mostly spent time together on deck, cleaning, checking cargo and, in the engine room, doing maintenance. Coming up after a nap, I saw that William of the *Sunrise*, was watching the series *Homeland* on Netflix during his night shift, on a large screen was mounted in a corner of the wheelhouse. He had never seen it before and decided to give it a try, running a few episodes during his night shift (Field note 30.3.17).

Phillip of the *Porter* used the waiting time in ports—their tanker had nine compartments that could be filled and emptied independently, which meant hopping from dock to dock in ports and more waiting time—to build model houses, meticulously modelled on a German village he had once visited and photographed for this purpose (Field note 20.2.17). Rob watched Dutch public television via his satellite (Figure 18), which, unlike William's on-demand viewing, followed a regular programme schedule. He liked a programme about neighbourhood disputes, about right of way and a tree hanging over someone else's property (Field note 29.11.16). He and Rebecca had a flat, but were rarely there. The show seemed somehow a symbolic access to a world preoccupied with mobility (a footpath) and mobilising the immobile (a tree) on such a modest scale.

Figure 18: Photo taken on board of the Liberty while navigating the Rhine in Germany in 2016. Rob is watching a show on adopted children looking for their parents on Dutch public television, which he receives via satellite. On the right parts of the radar interface and digital chart with AIS labels are visible, the chart is adjusted in brightness and the radar's main colour is black. As moderate sources of light they allow the skipper to still see what is outside at night. This is not the only contrast with the television screen. They are also integrated into Rob's navigational assemblage through their vertical position, so that the view of the water and on the screens is more compressed. The television is a horizontal screen, not designed to see beyond, therefore mounted in the corner of the wheelhouse.

Figure 19: An operator in a Rijkswaterstaat control room makes an enquiry per phone. On his right screen he is looking at a vintage car he is interested in buying, on the right is his cargo database. Figure 20: Part of a control room console, with on one screen the browser version of Facebook opened. Both this and the console above are less intense, more administrative. Although my interest in dividing attention by actors in the field was genuine, I have sometimes felt that photographing this amounted to surveillance.



As central as mobile phones are to a variety of critical assemblages, their affective appeal can tie operators or skippers too tightly. It is known from other contexts that boredom at work, especially during night shifts, can invite risk-taking (cf. Fassin 2013). In the Nijmegen control rooms, operators were very aware of the conviction of the German train dispatcher for causing a fatal collision in 2016 while playing a game on his mobile phone (cf. Truscheit 2016). The news broke on the day of my visit—operators were discussing in which type of infrastructure control rooms private smartphones were still allowed and in which they were banned (Field note 6.12.16). I later read that the developers of the game the train dispatcher was playing, Dungeon Hunter 5, promised it would be their "most immersive, accomplished and addictive" yet (Zibreg 2015).

Every burst of marine VHF radio chatter that fills the wheelhouse or control room can be vital. A television or smartphone is just one of many screens and gauges to keep an eye on (Figures 19 and 20), through which other critical orderings must be made. In the unmanned wheelhouse, the risk is no longer shared by the crew. Some of this risk is covered by new technology: the Tigris had an alarm installed for when the helm has not been moved for a certain period of time with the engines running. Nowadays, when there is an abundance of time on ships, there is often no one to share it with.

Episode three: sharing time and space—enduring intolerance

The final theme is *sharing time and space*, told over two episodes, first in the workplace and in the next episode with family and loved ones who are not on board. Here I want

to focus on an episode on board of the *Tigris*, supported by other experiences, also in control rooms. I have thought long and hard about including this, as it puts the people in the field in a bad light: it is about racism, bigotry, and homophobia. The key to including this is the way these issues manifest differently because of particularities of the field, like in chapter three. This is what justifies the inclusion.

During my stay on the Tigris, the national football teams of Germany and the Netherlands played each other, a classic rivalry in football and especially for the Dutch an important game. It had been a topic earlier that day, I knew it would be on in what they call the "mess" (Field note 15.10.18).

> Have watched a part of the first half half of Netherlands-Germany, but after a racist comment from the machinist, which I as a matter of fact did not let pass, I no longer felt like watching it. In a certain way this is a break with past experiences in the field. Before I have let these kind of things slide. Thought that I had to accept the field as it was, but now it was more directly addressed to me. He said it was such a pity that the Dutch team only played with four Dutch players, the others were foreigners. He meant the players of colour. (Field note 15.10.18)

The entire crew consisted of white men. It was through the television that an outside world had seeped in. The next day, the machinist came up to the wheelhouse, and stood behind me while I was typing on my laptop and said "Let's see what you are writing." I said he could go ahead. Then, in a voice as if he was reading it from the screen he said "Jordy [the first helmsman who was at the helm at that moment] is incompetent." (ibid.) Later, I made it clear to Jordy that this was not what I had written, but he already knew it was, he assured me. During the night shift, I was alone with John in the wheelhouse and the machinist became a topic. John could not afford to lose him, there was no one to replace him, but without saying much he seemed to know exactly what the machinist was. It reminded me of the story Ad van Zanten told (chapter two): once he knew who the bastard in his crew was, he should have kept him there.

Other incidents, which I did not object to when they happened, often involved the media and my presence. One operator used homophobic slurs as he told the others to be careful, my notebook was out, everything was being transcribed (Field note 4.11.16). Rob of the Liberty was talking on the marine VHF radio to an acquaintance who had just passed in the opposite direction and could not wait to be out of range when the acquaintance started talking about Sinterklaas, he said afterwards. The acquaintance thought that if a Dutch politician of Surinam heritage felt uncomfortable with Sinterklaas' assistant, Piet, wearing a black face, she should "go back to her own country" (Field note 28.10.16). It seemed to me that the exchange over VHF radio with other skippers often primarily served to foster links between people doing risky work, not knowing when help might be needed.

Episode four: sharing time and space—active negotiation between orderings

The final episode is the effort to share time and space with those who are elsewhere. It is about ordering oneself with loved ones to actually meet, either on land or on board. This is the challenge from which the operator-turned-skipper has freed himself.

Both Maria and Philip of *Porter* and Rebecca and Rob of *Liberty* took a few weeks off each year while another crew took over, all planned well in advance. The time was used to live in their house or flat, to see family, to travel. Neither could afford to tie up the ship for such long periods.

Smaller family events proved much harder to juggle with other commitments, especially market ones, as the following episode illustrates. Rob received a call from an agent offering a trip and answered his smartphone while at the helm. He was hoping not to sail the following Sunday as it was the annual family day with their children and grandchildren—a trip to the zoo and then dinner in Rotterdam. This meant they wanted to dock where they could get their car off the ship and be within a couple of hours drive of the city.

> Rob tells the agent about his family plans next Sunday. After he hangs up he mentions the price of 16,000 euros, and tries to figure out if the water levels allow for the weight of the cargo, so this is about the predicted water levels. Another agent calls. Rob receives a new offer, also steel coils, 17,000 euros, leaving from Antwerp, which means he has to go there empty first. Doesn't appeal to him. He asks if there is nothing for the Lower Rhine. (Field note 28.11.16)

Sailing empty meant covering his own fuel costs. For Rob to contemplate prices was to evaluate distance in time and future space on the river in terms of draft. The challenge is to geographically align navigational orderings with the intended intimate ordering, so as to switch: the intimate ordering cannot happen simultaneously, so other orders have to be paused. This requires negotiation, as Rob does with the agents.

On the Porter and the Liberty, they never know where their next journey will take them. This has made them familiar with a lot of the local infrastructure, partly because they had to get their children close enough to their ships, that is, when they were old enough to travel on their own between the boarding school and wherever the ship was moored. Before that, children were picked up by car from their boarding school for the weekend, regardless of where the ship was moored. From the 1980s onwards, skippers found ways to load and unload a car, mainly used for this purpose, although it was also convenient for doing groceries. Automobility augments and compensates nautical mobility (Figure 21). There were times when Rebecca of the Liberty would drive alone from southern Germany for five-hundred plus kilo-

metres to the Dutch boarding school on a Friday, drive back to Germany to bring her kids on board, returning them on Sunday afternoon, to drive back alone to Germany again (Field note 30.11.16). This way, she single-handedly amassed two thousand kilometres in three days. This illustrates that to align intimate orderings with market orderings implies taking bodily risks.

Figure 21: Rob unloading his car in the port of Antwerp in 2016 while on the phone.

The synchronisation of the different rhythms of those on board and those on land is difficult. When skippers are already engaged in other orderings and stack their intimate orderings on top of them, they are at the mercy of mobile phone coverage to convert available time in shared, yet mediated time. When there is no one to share time with, not only because of physical isolation, but also because of diverging rhythms, media keep skippers company. When intimate orderings are not residual but preferred over other orderings, when only the intimate ordering should be ongoing and the others put on hold, skippers manoeuvre to come to a market ordering that allows for an interval.

5.7. Conclusion

In this chapter, I have mapped out how ships on Western European inland waterways go from mooring to motion and back. Through sociomaterial assemblages,

four different orderings have been set out: navigational, regulatory, market, and intimate. In this way, ordering is an ongoing situated practice, distributed through time and space. The challenge, however, is for actors to reconcile the different rhythms across the water-land spectrum.

As a rule, practices can be studied ethnographically when zooming in, following actors wherever they go. However, when action is distributed, fieldwork should be too. It is shown that by following the action, different sites can be connected. As a result, ethnographies can be scaled up cohesively, without uncoupling itself from situated practices.

This approach helped to undermine the land-water dichotomy that has kept mobilities studies largely tied to land in at least three ways: control room work that necessarily has to happen from land, the ever-changing riverbed as a muddy taskscape, and loved ones who live by different rhythms on land.

First, it has brought us an integrated view of the efforts of inland navigation control rooms in achieving safe and smooth navigational orderings. Their mobilising ability rests on an overview that comes with being immobilised themselves. This is true in two ways: 1) most operators used to be skippers and actively use their knowledge and skills to deal with the demands that come with (re)positioning oneself in the different orderings while on the move, and 2) they can only utilise this experience when giving up the restricted view of the wheelhouse and embrace the removed, but not detached, view that the control room assemblage affords.

Second, the riverbed is jointly shaped by currents, ships and dredgers, and gives shape to how water flows and ships navigate in return. The less water the river holds, or the wider the river is, the closer the riverbed and the propellers of the ship come. Once they are too close, the ship will dig itself in, with likely calamitous consequences. Authorities try to secure this critical distance not only by deepening the river, but also by accounting for its state in the first place and restricting the maximum draft. Yet, skippers do not always align with regulatory orderings and instead stretch margins, but ultimately muddle through.

Third, intimate orderings tie shipping crews to land, either through stacking this ordering on top of others, or by negotiating a carefully timed mooring. The former means sharing mediated presence whenever the situation arises, which is easier to endure for hired crews who disembark after a week or two of sailing. The latter is a challenge for those who own the ship and carry the financial weight of not only immobilising themselves, but also the ship.

Four types of orderings have been theorised, which enable and benefit each other, but can also be at odds with each other. However, most often market orderings tend to prevail. When regulatory orderings allow for smaller margins in navigational orderings it is ultimately to the benefit of market orderings. Spatiotemporal scarcity on the river results in risky navigational orderings, spurred on by profitable market orderings. Climate change will likely exacerbate this.

Although low water is not uncommon, the 2018 low-water period on the Rhine described above was unlike skippers—some of them sailing professionally for four decades—had ever experienced.[8] With more dry extremes ahead and less routine to fall back on, problems mount, as this chapter demonstrated that less space on the river actually leads to more traffic. Until of course there is too little water left.

Finding a place in these orderings results in three main temporal challenges. Ships struggle to be just in time, made into a collective problem by the (lack of) water, though not always perceived by all skippers that way. Skippers are pressured to keep on sailing through assemblages of surveillance while in need of a break. And, third and last, conflicting rhythms make it hard to synchronise time (and space) with those on land.

In this chapter, I demonstrate that the empirical method needs to take account better of the distributed nature of complex interactions of actors by following their action. Analysis shows that these situated practices can themselves be theorised into four distinct, but interrelated orderings. This gives us an invaluable perspective on a hitherto under-analysed nexus of competing and conflicting priorities in shipped mobilities. Furthermore, the analysis sheds light on how human and non-human actors involved in essential work interact, when time is of fundamental significance. Ultimately, the way in which navigation on these waterways is accomplished by actors from both water and land brings into stark relief the central role of media to a fundamentally important infrastructure.

I have long relied on Zielinski's (2006) definition of media, on the idea that media are "spaces of action for constructed attempts to connect what is separated" (7), but found that it only covers one side of the coin. Alternately, it is shown here that media—depth finder, radar, marine VHF radio, smartphones, CCTV cameras, AIS, maps—keep separate what would otherwise collide. This perspective is afforded by escaping the boundary between media and technology (cf. Kittler 1999) and embracing an "open" understanding of media (Bender and Zillinger 2015, xxvi). This way, I could study the role of infrastructural media (cf. Schabacher 2013) in assemblages.

Media enable the control of distance. The question is not whether the connection or separation is attempted, but the practices of oscillation between proximity and distance. Every day, the challenge is to find out how close is still safe and how distant is still manageable.