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Memory and learning: Selecting users in the port of Rotterdam, 1883–1900

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During the closing decades of the nineteenth century, the port of Rotterdam experienced very strong growth. Changing views and concrete experiences induced the port to widen the initially limited circle of regular users of berths. We study this case in order to increase our understanding of the dynamic interrelationship between organisational memory and learning. While organisational memory guides the application of routines, this practical experience may also question underlying beliefs. Our study of deliberations by the Rotterdam government – to a significant degree representing the preferences of the local business elite – demonstrates how so-called lower order learning on the level of routines induces a so-called higher order learning on the level of beliefs. Finally, our case-study suggests that the traumatic nature of initial experiences that are part of organisational memory may hinder the deliberation of beliefs and thus retard higher order learning.

Keywords: organisational memory; learning; local government; ports

Introduction

For a century or more, Rotterdam has been the largest European (continental) port and between 1962 and 2004 it even ranked as the world's first. Besides the superb location at the junction of the Rhine estuary and the North Sea, the dominance of stevedoring firms fiercely competing for cargo has been considered one of the pillars underlying this sustained performance. However, precisely during its ascendancy to European leadership in the late nineteenth century, the port denied independent middlemen the right on permanent berths. This right of use, a vital asset in a port having difficulty to keep up supply with the demand for its services, was legally reserved for liner services since 1883. Particular requests for a permanent berth, however, led to extensive deliberations whether the general interest of the port was best served by such a narrow delineation of preferred users of berth space. Eventually, the city government decided to liberalise the regulation in 1900. From then on, all types of firms could apply for permanent berths, including 'middlemen' like stevedoring, warehousing and forwarding companies.

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We analyse this widening of the circle of accepted users of permanent berths as a process of learning in relation to organisational memory. In general, there is an interesting tension between these two concepts, as memorising past insights and knowledge will eagerly create inertia, while learning is to be equated with change. Contributions on organisational learning are very scarce in the business history literature (Fear, 2001). The few existing ones (e.g. Chandler, 2001; Finkelstein, 2006; Lamoreaux, Raff, & Temin, 1999; Miranti, 2005), including rare examples of relating learning to organisational memory (Ville, 2007; Yates, 1990), do not deal with learning as a step-by-step process in a detailed way.¹ Studies in organisation science (Becker, Lazaric, Nelson, & Winter, 2005; Nelson & Winter, 1982) provide a theoretical base for historical investigations of the use of several forms and functions of memory in the process of organisational learning. In the next section, we give an overview of concepts and perspectives on organisational memory and their impact on processes of organisational learning. We conclude that organisational memorising and learning should be viewed as a multi-level phenomenon where learning on the level of routines gradually transforms into higher order learning and demonstrate this with our case study of decision making in the port of Rotterdam in the late nineteenth century.

A multi-level view on organisational memory and learning processes

Theories of organisational learning conceptualise the process how intuitions and ideas from individuals or groups within the organisation and cues from the environment are selected, distributed and institutionalised in an organisation (Crossan, Lane, & White, 1999; Nooteboom, 2000; Zollo & Winter, 2002). A common starting point for organisational learning is variation, defined as 'a combination of external stimuli with internally generated information derived from the organization's existing routines' (Zollo & Winter, 2002, p. 343). This process of adopting new ideas takes place in the tension between existing knowledge in an organisation as laid down in various forms of organisational memory and the expected advantages from the new input. Our study focuses on the processes of organisational learning by drawing on extant organisational memory on the one hand and adopting new ideas and insights on the other. This implies a view on organisational memory as actively and selectively used in an organisation in the process of remembering.

A common definition describes organisational memory as an entity on a supra-individual level (Paoli & Prencipe, 2003; Walsh & Ungson, 1991). Organisational memory is stored in diverse retention facilities such as routines, stories, shared interpretations and organisational structures (Nelson & Winter, 1982; Walsh & Ungson, 1991). Organisational memory fulfils two different functions, which relate to their forms: providing guidance for, first, interpretation through beliefs and, second, action through routines (Moorman & Miner, 1997). Beliefs describe the cognitive map or thought world that influences processes of encoding environmental data and constructing meaning (Daft & Weick, 1984). Routines, defined here as stable behavioural patterns (Becker, 2004), guide action as 'organizations remember by doing' (Levitt & March, 1988; Nelson & Winter, 1982).

The inertial tendencies of organisational memory for organisational learning are identified both on the cognitive level of beliefs and on the behavioural level of routines. As organisational memory influences perception and interpretation of the

environment (Daft & Weick, 1984; Paoli & Prencipe, 2003), there exists the danger of not recognising changes in the environment (Crossan, Lane, & White, 1999). Organisational memory thus can lead to inflexibility and ‘competency trap’ (Levitt & March, 1988) and to myopia in learning (Levinthal & March, 1993). Routine *behaviour* can also lead to mindlessness (Ashforth & Fried, 1988).

However, such a strong inertial effect of organisation memory is also questioned in the literature. Fiol and Lyles (1985) introduce a distinction between higher and lower order learning. Higher order learning takes place when changes in the belief system occur, whereas lower order learning rests on changes in routines. Although organisational routines are based on past experience, people can learn from their experience and thus change a routine. Learning in this case is driven by the perceived gap between an aspiration level or preferences on the one hand and the observed consequences of an action on the other (Levitt & March, 1988). In a similar vein, Feldman and Pentland (2003) perceive cumulative improvisations upon the routine as performed by human agents as the source of changes of the routine. This is considered a form of adaptive learning that might not lead to higher order learning, that is, changes on the level of beliefs or preferences,² but will overcome inertial effects on the behavioural level.

Deliberation on the experience derived from action outcome is an important ingredient for overcoming the inertial effect of memory in adaptive learning. Deliberation is a process of ‘significant cognitive effort’ where the cognitive and the behavioural level of remembering and learning are intertwined (Zollo & Winter, 2002). Organisational members accumulate experiences, articulate these experiences and may finally also codify them. Articulation takes place by constructive discussions sharing and confronting views on causal mechanisms in action–outcome links. According to Zollo and Winter’s often-cited paper, co-evolution of the three learning mechanisms of experience accumulation, articulation, and codification is vital for the improvement of the existing routines. However, they do not explain how higher order learning is induced by this process.

Alternatively, while acknowledging learning from experience as gained from action–outcome linkages, March, Sproull, and Tamuz (1991) hint at higher order learning through this experience. The interpretations of an action outcome can bring in variation which makes organisation discover ‘values, aspirations, and identities in the process of experiencing the consequences of their actions’, whereby the ‘preferences and values in terms of which organizations distinguish successes from failures are *themselves* transformed in the process of learning’ (March et al., 1991, p. 5; emphasis added). In this way, experiences with applying the routine may lead to higher order change of preferences and beliefs.

Our overview of the literature on memorising and learning suggests that organisational learning processes should be considered as a multi-level phenomenon. As change is often provoked on the level of routines when gathering experiences from action–outcomes linkages, routine change might transform into higher order change on the level of beliefs or preferences. We want to further our understanding of this transformational learning process. Two main questions guide our case study. First, as routines are a form of organisational memory, how do deliberation processes based on accumulated, articulated and codified knowledge contribute to learning on the level of routines? Second, how do these processes of ‘routine learning’ affect learning on the level of beliefs and preferences? Before we tackle these questions, we first specify the identity of

the decision makers under study, the procedures they were bound to, and, related, the methodology followed by us.

Decision makers, procedures and methodology

Delineating which types of firms were permitted to occupy permanent berths under what conditions was an important way the Rotterdam government defined its own economic role in the developing port of the late nineteenth century. While the Rotterdam municipality is our focal actor, our focal routine is the by-law on quayage that regulated the use of permanent berths in the Rotterdam port from 1883 (quayage is the fee users of the berths paid to the city). We analyse the deliberations leading to the introduction of this regulation in 1883 and its fundamental revision in 1900. The implementation of the quayage law, that is, granting requests for a permanent berth or not, was normally a matter of execution by the municipal executive, consisting of the Mayor and Aldermen. An interference with another regulation, the leasing of quay terrains, could make the granting of berths the subject of debate by the city council, however, since the latter should accord every single contract with a private party. It is particularly on these occasions that improvisations upon the routine of granting permanent berths were to be expected, that is, variations in the way the routine was related to the practice of leasing out quay terrains. We focus on the two main debates on combined requests for quay terrains and permanent berths by the firms Wm. H. Müller & Co. (1891) and Blaauwhoedenveem (1894/95) respectively. To link these debates with the implementation of the by-law in general, we sometimes refer also to similar cases that were not or not extensively discussed by the city council.

In decision making by the council, an elaborate procedure was followed. Subcommittees of the council (the latter counted 39 members, including the Aldermen), chaired by the Mayor or an Alderman, wrote notes preparing the discussion. Civil servants heading specific departments of the city administration reported to the municipal executive directly or via the subcommittee involved. In studying the Rotterdam municipality as setting the conditions for business, it should be noted that the Rotterdam political and economic elite overlapped to a significant extent. A substantial number of city councillors were managers and/or owners of shipping firms, ship agencies and trading companies (Baggerman, 1994; Callahan, 1981); almost all participants in the council deliberations quoted below belonged to these categories. A main party that provided input for the discussions was the Chamber of Commerce. The advice of this influential voice of the local shipping and trading interests was highly valued by the city government. The Chamber acted as an autonomous party, often triggering a more passive municipality into action, but several board members of the Chamber were also city councillors throughout the period studied; the overlap in membership was 4% to 7% between 1871 and 1892 (Callahan, 1981). This implies that we are in fact not only studying learning by one focal organisation, but also the collective learning by an important part of the Rotterdam business elite involved in shipping and trading, in important ways referring to a common memory.

The available written material offers a solid basis for tracing in detail the remembering and articulation of organisational memory. The minutes of the meetings of the city council were made available to the councillors and published on an annual basis. The executive regularly provided the council with letters and notices underlying proposals. Some of them were printed and published, for instance most documents

regarding the hotly debated request by Blaauwhoedenveem for a permanent berth in 1894/95. In other cases, however, councillors would have to undertake some effort when they wanted to retrieve unpublished written information from the organisational memory. All in all, organisational memory was relatively easily accessible and thus expected to play a significant role in the learning process. The primary documents mentioned form the core of the empirical material of this article.

The quayage bye-law and its backgrounds

The quayage bye-law regulated the use of berth space along the quays. A whole range of types of transportation, trading and/or industrial firms figured as potential users involved in loading and unloading cargo via the shore. As we show below, seagoing shipping companies were long considered the preferred category of users in Rotterdam. Their interests, in particular those of the foreign ones, were normally represented by local ship agents.

Growing traffic to and from the Rotterdam harbour made the space for berthing ships increasingly scarce in the latter part of the nineteenth century. By 1872, when a canal connection to the sea – the New Waterway – was opened, goods were still stored in open air at the quays in the city centre, on the north bank of the river Meuse, without full protection against weather and theft.³ The building of a harbour complex at the south bank at Feijenoord created the first port area for general commercial use with quays and terrains, sheds, and direct railway connections. The city government was not willing to raise taxes or obtain new loans to finance the building of the new complex. Therefore it permitted a private firm, the *Rotterdamsche Handelsvereeniging* (Rotterdam Trading Company, RHV) to develop and operate the Feijenoord installations. The quay space at Feijenoord was given in a long lease to RHV for 99 years. This decision of the municipal government was made only after fierce discussions in the city council and in the local press at the end of 1872.⁴ Opponents were afraid that RHV would abuse its monopoly on deep-water space, although the city government would monitor the tariffs of RHV. Just before the building of the Feijenoord installations was finished, RHV was hit by the fraudulent activities of its initiator and director, Lodewijk Pincoffs (Oosterwijk, 1979). This most prominent Rotterdam entrepreneur had used the funds of RHV to cover the losses of one of his other ventures. In May 1879, when he could no longer conceal his fraudulent operations, Pincoffs fled to the United States. His flight brought Rotterdam into a state of shock, leaving leading businessmen who had involved themselves with Pincoffs with a badly shaken reputation (and in a few cases also with significant financial losses).

RHV escaped bankruptcy and the city took over its Feijenoord complex in 1882. Although the municipal government and the Chamber of Commerce were hesitant about the appropriate system of operation, there was consensus that the city should never again cede control over the waterfront space completely and irreversibly to private firms (Devos & van Driel, 2000; van den Noort, 2000, pp. 389–391). While it was widely acknowledged that both elements were inextricably bound up with each other, it was decided to regulate leasing out the terrains and sheds at Feijenoord by contract between firms and city,⁵ while the capacity of berth space in the port as a whole would be allocated according to licences, that is, through public law.

To this end, a by-law on the quayage was introduced for both seagoing and inland vessels in October 1883. It granted only liner services the right on a permanent

berth. This preference was neither motivated nor discussed, suggesting that giving priority to ships maintaining a scheduled service for many different customers was considered common sense. The licence system would create uniformity throughout the port and end the situation that certain (short sea) shipping lines permanently occupied berths at the north bank, just according to custom.⁶ Preventing privileged positions of individual private firms was a main issue in drafting the new by-law. The municipal executive wrote in the explanatory memorandum that independent middlemen should not get the chance to make money out of the right on permanent berths, both because this would cost the municipality revenue and because it would make the harbour appear less attractive to ship-owners.⁷ The city council shared this aversion to what one of its members, followed by the burgomaster, called ‘trading in berths’ and accepted the by-law without substantive discussion about its essence.⁸ Although not mentioned in the memorandum and in the discussion, it is plausible that the unpleasant experience with RHV contributed significantly to this preoccupation with preventing middlemen putting themselves between the port authority and the end users of the berths, that is, the shipping companies. After Pincoffs’ flight, two widely trusted persons, one of them the chairman of the Chamber of the Commerce, had assumed the management of RHV. Still, apparently out of financial necessity, the latter introduced a separate fee for ships seeking a berth at Feijenoord, on top of the city’s regular harbour due (van den Noort, 2000, pp. 383–384; *ARCoC* annual report, 1882, p. 11). This extra retribution not only led the cost-conscious ship-owners to avoid Feijenoord, thus aggravating congestion elsewhere in the port, but also further increased the concerns about the possible abuse of a monopoly on modern port facilities by an independent middleman.

No discussions about the first implementations of the by-law

The quayage by-law reflected a belief of how the prosperity of the Rotterdam port was best served, that is, through an unmediated relation between the port and its end users, the shipping companies, with a particular preference for liner services. The implementation of the by-law took place against the background of both the continuous growth of shipping to and from Rotterdam and the expansion of its port capacity, in particular by developing the Rijnhaven (Rhine Harbour, 1887–1894) and Maashaven (Meuse Harbour, 1898–1904) at the south bank (see Figure 1). By 1883, Rotterdam was already the largest Dutch seaport. Its growth spurt, which would make Rotterdam the largest European continental port before World War I,⁹ was yet to come. Supported by dredging works that maintained the New Waterway at a sufficient depth from 1886, and fuelled by the industrialisation of the German hinterland in particular, Rotterdam became more and more a bulk port – handling huge amounts of ore, coal, and grain – rather than a general cargo port. The three main bulk cargoes mentioned extended their share in incoming traffic from 53% to 65% between 1883 and 1900.¹⁰ Still, new basins were dug not only for direct transfer of bulk cargo between deep-sea vessels and barges, but also for ships, mainly carrying general cargo, that needed to discharge and load their cargo via the shore and required sheds for temporary storage. The city government had to weigh the granting of permanent berths along these quays to individual applicants against the expected remaining need for ‘free’ berth capacity.

Around 1 January 1884, when the regulation became effective, shipping companies or ship agencies had applied for permanent berths for 16 distinct short

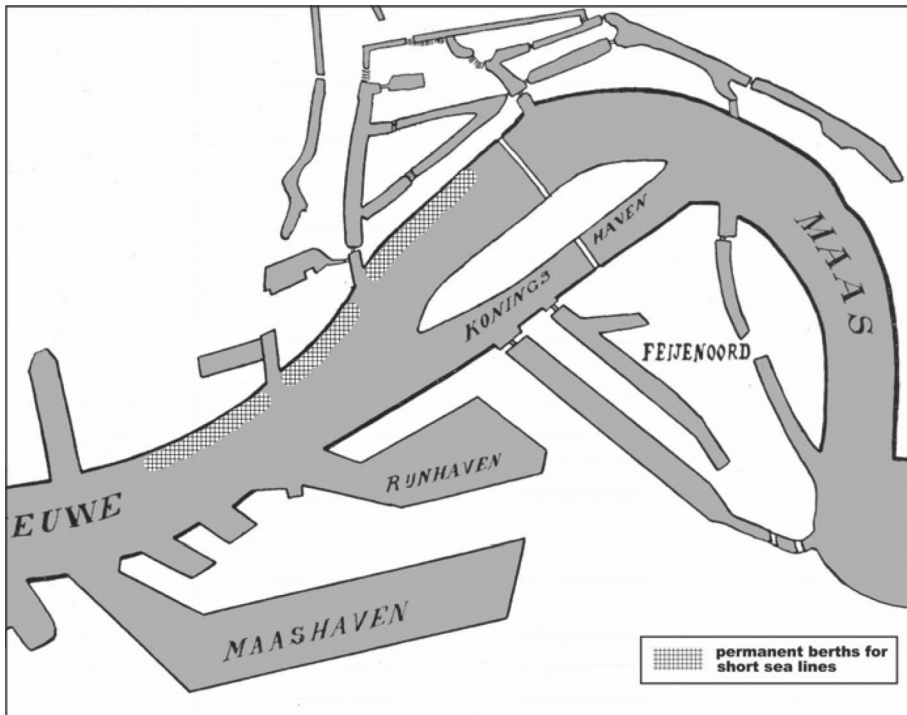


Figure 1. The Port of Rotterdam around 1900.

Source: Adapted from *Kamer van Koophandel* (1928) by Jan Sirks.

sea liner services, formalising the extant use of berths at the north bank of the river. The municipal executive granted the requests without discussion and saw no need for special provisions.¹¹ Leasing out quay terrains was not at stake here. This changed in later in 1884, when the renewal of lease contract with the *Nederlandsch-Amerikaansche Stoomvaartmaatschappij*, better known as Holland America Line (HAL), at the Koningshaven (King's Harbour, part of the Feijenoord-complex) was due. HAL had contracted with RHV as early as 1879 for the use of berth, quay terrain and sheds and had paid 10,000 guilders per year on average for this. Now, the municipal executive artificially separated the sum of money to be paid into 5000 guilders rent and 5000 guilders quayage to align the contract with the new system.¹² This improvisation implied a small, but meaningful deviation from the routine: the fee to be paid by HAL was not calculated according to the length of its largest ship, as the law prescribed, but according to the length of the quay. Although the lease contract was linked to the right on permanent berth in an unusual way, the city council agreed to it by acclamation. In 1891, however, a proposal for a basically similar arrangement at this site with another firm, Wm. H. Müller & Co., was submitted to deliberation.

The Müller debate (1891): a true line or not?

In November 1891, Wm. H. Müller & Co. informed the municipality that it was interested in the quay terrain and sheds at the Koningshaven that were no longer held in lease by HAL (see Figure 2). The municipal executive was eager to secure



Figure 2. The Koningshaven-site in 1891, when the quay terrain and sheds were still in use by Holland America Line; the ship on the picture is the SS 'Obdam'.
Source: Collection Rotterdam Municipal Archives, No. VII 6.01-2.

itself a regular source of income and proposed a five-year agreement that was similar to the earlier one with HAL. The city would still receive 10,000 guilders per year, either as the full payment for quay terrain and sheds or as a combination of a quayage up to 5000 guilders (according to the quay length of 200 metres) supplemented by a rent sum totalling 10,000 guilders.¹³

Councillor Antoine Plate, a prominent ship agent, acknowledged that relating the terrain and sheds lease to a permanent berth was in place, since the berth in practice would be useless for other parties, given the fact that the terrain was fenced off at the landside. Yet, despite the similarity with the HAL agreement, he and others contested the granting of permanent berths to Müller.¹⁴ Unlike HAL, represented in the council from its founding in 1873 by its directors Willem van der Hoeven (1866–1885) and Johan Wierdsma (1886–1895) respectively, Müller was rather an outsider. German entrepreneur William Müller had founded his ore trading firm in 1876 and established a branch in Rotterdam two years later (de la Lande Cremer, 2002). There the company also became active as a shipping company, ship agent, forwarder, and agent of a leading Dutch railway company. Müller got the three lines it eventually mentioned as prospective users of the permanent berth (see below) going within the time span of one year prior to its application.¹⁵ Established ship agents were possibly alarmed by the commercial vigour of the firm, which was led by the energetic Anton Kröller from 1889, when his father-in-law William Müller died prematurely.

Plate and his sympathisers could effectively draw on the extant routine: Müller did not comply with the official requirement for gaining the right of permanent berth, that is, that specific ships should be named. Plate contrasted the Müller situation with

earlier experiences with other shipping companies and ship agents that had given individual ships to support their requests for permanent berths at the Feijenoord harbours. He went on to say that moreover Müller did not actually need the berths for one of its services in particular, for instance its bi-weekly service carrying ore from Bilbao to Rotterdam, and thus in practice would use the berths for its 'irregular steamers' in general. This would establish a 'new principle' and was in 'absolute contradiction' to the letter and the spirit of the by-law.¹⁶ Alderman Frederik s' Jacob replied that the municipal executive had always generously supported large firms that wanted to establish themselves in the port, 'without getting itself involved in possible intentions and details', convinced as it was 'that the interest of the entrepreneur went together with that of our harbours'.¹⁷ By downplaying the relevance of 'intentions' of entrepreneurs and denying conflicts of interests between port and berth users, the municipal executive implicitly infringed the belief of 'no trading in berths'.

In line with the Alderman's view, Müller wrote in a clarifying letter to the executive that it wanted to attract *new* customers rather than serving existing ones by providing permanent berths at the Koningshaven.¹⁸ The three ships Müller stated as second resort would operate in three different lines. Still, when the proposal was again discussed by the city council, Willebrordus Pieters, like Plate a ship agent, described naming specific ships as only a formal step by Müller to comply with the by-law.¹⁹ Moreover, he considered the bi-weekly services, for which Müller primarily wished to use the berths, not to be true liner ones. Pieters even claimed that the quayage by-law was meant for granting permanent berths to weekly or even daily services only. He clearly had in mind the standard in short sea traffic that dominated the Rotterdam liner shipping scene. Pieters thus articulated the understanding of the nature of a 'liner service' that, as Alderman s' Jacob pointed out in reply, had remained unspecified in the by-law of 1883.

Subsequently, Pieters proposed that the lease term should be shortened to two years, to limit the risks of possible inappropriate use of the permanent berths, quoting the words of the then burgomaster in 1883 that 'trading in berths' should be avoided. He thus ignored the rephrasing by Alderman s' Jacob of the way the interests of the ports were best served. More responsive to this, councillor Eduard van Raalte, a lawyer, who like Pieters denied the three Müller services the status of regular lines, subtly concluded that the proposal implied 'that a permanent berth is made available no longer only to a particular *liner service*, but to a particular *firm*'.²⁰ In the end, the city council agreed with the lease of the terrain and the sheds, but only for a period of two years, while Müller also acquired the right to permanent berth. This improvisation was thus explicitly meant to be a temporary one, but the lease to Müller and concomitantly also the right to permanent berth were renewed without discussion in subsequent years.

During the second discussion, Van Raalte had suggested that the insights gained during the two year term of the contract with Müller could help shape thoughts for an eventual revision of the by-law. Wierdsma however replied that such an adjustment in the near future should be out of the question now two 'big contracts' had been recently re-aligned with the by-law in what he called a slightly artificial way. He here referred to the lease contracts of the large incumbent deep-sea liner shipping companies – Rotterdamsche Lloyd and his own HAL – concluded in 1890. These contracts contained the novelty that the lease of the strip of ground of ten metres width directly behind the quay wall would be immediately stopped when the lessee no longer wanted to pay for a permanent berth.²¹ This

had been another improvisation to safeguard both the city's financial interests and its control over the waterside. Accepting the growing variety in improvisations to deal with the interference of the quayage routine with the terrain lease routine rather than aligning the two in general thus characterised the outcome of the Müller deliberations.

The Blaauwhoedenveem debate (1894/95): a permanent berth for a warehouse company?

A few years later, a request by the Blaauwhoedenveem firm gave rise to very extensive, sometimes heated debates that took five meetings of the city council between September 1894 and June 1895, filling 31 double-column pages of the official minutes (no less than 12% of the space needed to report all council meetings in this period). In hindsight, these deliberations – that touched upon basic issues concerning the by-law – spurred its fundamental revision in 1900, but only with a time lag of five years. The company requested a 30-year lease of a quay terrain in front of its warehouse under construction at the Rijnhaven and for a permanent berth, stating shipping line Union Steamship as the user, in January 1894. The municipal executive supported, and in fact even co-arranged the request.²² Just as in the Müller case, the municipal executive was eager to maximise revenue by formally granting a permanent berth. And, again, there was the complication that the quay terrain would be fenced off at the landside, which would make the berth of low practical value for other users. The connection to a warehouse was new, a kind of facility that was beginning to make its entrance at the Rotterdam deep water-front (since 1883 Blaauwhoedenveem and other warehousing and forwarding firms rented sheds without quay space for short terms of up to two years at Feijenoord).

Blaauwhoedenveem's status differed from Müller's. While the former could boast an age-old history going back to early seventeenth-century Amsterdam, it still – as a warehousing company involved in physical handling of goods rather than organising trade and cargo flows – had a low status compared to ship agency firms and it was active in Rotterdam only from 1878 (van Driel & Devos, 2007). Insofar as the opposition in the city council was of a political nature, this time it was aimed at keeping a type of firm considered inferior to shipping lines and ship agencies in place rather than protecting established shipping interests against unwelcome competition. Although not explicitly prohibited by the by-law, a request for a permanent berth by a warehouse company rather than by a shipping company or its agent was unprecedented. After one councillor objected to the request, because 'the applicants do not actually have the disposal over this line',²³ Blaauwhoedenveem arranged that Union's ship agent made the formal request. It was no secret that this was purely a formality. Blaauwhoedenveem simply wanted the guarantee that the berth was free when a ship loaded with cargo destined for its warehouse arrived in the port. The municipal executive openly acknowledged that the Union Steamship was just a pretext.²⁴

Councillor François Ebeling, a coffee trader, challenged this lenient interpretation of the by-law by digging up from organisational memory the contracts with Müller and with another tenant, that did not permit them to use sheds for cargo from ships other than those for which they had gained the right to permanent berth.²⁵ Before that, Plate, who again opened the discussions, had flatly denied the legitimacy of the request: 'No-one amongst our midst will categorise the Union line

under the regular lines, as is meant by the byelaw.²⁶ Other councillors elaborated on this negative assessment, drawing on local experiences. Lodewijk Sanson, a trader, came up with figures illustrating the tiny generation of cargo to the port by Union Steamship's service between South Africa and Rotterdam.²⁷ Ebeling compared this unfavourably with the Rotterdamsche Lloyd ships sailing between the Dutch East Indies and Rotterdam, which almost permanently occupied their berths.²⁸ The subcommittee on the Feijenoord Port Installations, that – prompted by Feijenoord's director – offered negative advice on the request, even suggested that the discussions around the by-law in 1883 and the Müller request had unmistakably confirmed the notion that to gain the right to permanent berths the ships should almost continuously occupy them.²⁹

Van Raalte, however, who in the meantime had become Alderman and on this occasion was a defender of the executive's proposal, deemed the amount of cargo carried to the port irrelevant. Challenged by Sanson, he claimed consistency in his articulation: Union was a regular line in the sense of the by-law, while Müller's ore ships had much less deserved this label.³⁰ Later, he repeated his remark made during the Müller debate that the decisive criterion should be the regularity of the service.³¹ Jan Hudig, a shipping agent, added that it was an *advantage* for the port that Union and its likes occupied the berth for only a few days per month, because the city could use the berths the remainder of the time for serving other ships.³² Alderman Adriaan de Monchy, who supported Hudig's argument, drew the most radical conclusion from this expanding variety in the articulation of what the legitimate users of a permanent berth were and questioned whether it was possible to assess the true spirit of the by-law at all.³³

In his speech, De Monchy reassessed the executive's plea for broadening the circle of users of permanent berths, as emphatically expressed in the explanation of the second version of the proposal: 'Well-equipped storage places, enabling cheap manipulations of cargo, . . . seem to us no less important than good facilities for bare transhipment.'³⁴ Compared to the Müller debate, the executive thus formulated a more all-embracing understanding of the circle of legitimate users of permanent berths. A somewhat different economic need was emphasised by the Chamber of Commerce, which had become involved in the debate. Even before it was aware that Blaauwhoedenveem had filed a request, the Chamber warned against awarding too much permanent berth space at the Rijnhaven.³⁵ The Chamber feared that not enough space would remain for large 'losse boten' (irregular ships), apparently a category in between ships sailing according to a strict time schedule and tramps. Since the focus on irregular ships created some confusion, the Chamber rephrased its standpoint in a second letter after the first round of debate.³⁶ It now stressed that its main concern was to reserve the precious berth space for the increasing number of deep-draught ships that visited the port, *irrespective* of whether they sailed according to a *regular* service or not.

This point of view could have shifted the focus of the debate away from the definition of a liner service. Ironically, however, since the Union's ships were small ones, the Chamber was drawn into the camp of the opposing city councillors that stuck to a narrow interpretation of the extant routine. At the same time, much more empathically than in the Müller case, the adversaries harked back to the main belief underlying the quayage by-law that the city should prevent 'trading in berths'.³⁷ Unlike shipping line operator and ship agent Müller, Blaauwhoedenveem as a warehousing company was denoted as a 'private party', in other words as a

middleman that positioned itself between the port and the actual users – the shipping companies. The municipal executive too explicitly reassessed the necessity to keep public control of the waterside.³⁸ However, it emphasised that in this individual case there was no need to fear a private monopoly, since enough free space would remain available in the Feijenoord harbours. Thus the executive implicitly compared the projected consequences of the current case with the initial experience of RHV. More directly, but still implicitly, the municipal executive also memorised the RHV affair by stating that the city would not easily repeat the fallacy of giving ‘parcels located directly at main waters in ownership’ of private parties.³⁹ This rare reference to the RHV episode served as a reply to the arguments put forward by Plate and others. They had drawn on very recent local experiences with two other firms, warehousing company Vriesseveem and American Cotton Oil Company, which had accepted that their premises were built at a distance of 30 metres from the quay.⁴⁰ The municipal executive argued that the reason why these companies’ requests for terrains located just behind the quay had been turned down was that they – unlike Blaauwhoedenveem – had wanted to *buy* rather than lease quay terrains.

This difference between buying and renting ground was played down however by the director of the Feijenoord Port Installations in his report to the subcommittee.⁴¹ He and others were afraid that the proposed deal would create an unwelcome precedent and that other warehousing companies, in particular Pakhuismeesteren, would now feel legitimised to request quay terrains and permanent berths at the Rijnhaven, too.⁴² Pakhuismeesteren, founded in 1818, had a much higher social standing than its competitor Blaauwhoedenveem due to the fact that its owners also operated in international trade (van Driel, 1994). Two councillors were related to the latter: the aforementioned Alderman de Monchy, championing the cause of the warehouse companies, and trader Petrus van Rossem. The latter ridiculed the words of the subcommittee on the Feijenoord Port Installations that the proposed deal enabled Blaauwhoedenveem to ‘utilise the terrain for its own benefit’.⁴³ In arguably the most pervasive refutation of the belief underlying the quayage by-law during the entire debate, he stated: ‘[I] perfectly understand that what the warehousing company obtains, it will not operate to the benefit of the municipality’.⁴⁴

This was all in vain, however, since finally, by a 24 to 13 vote, the city council rejected the Blaauwhoedenveem deal on 4 January 1895. The municipal executive subsequently drew up a new proposal which the city council unanimously agreed upon on 27 June 1895. Blaauwhoedenveem did get the terrain in front of its warehouse in lease for the requested period of nearly 30 years, but excluding a strip of 13.5 metres’ width directly behind the quay wall – a strip that remained available for other users – and *without* the right to permanent berth. Whether this new improvisation was to make a practical difference for the use of the berth remained to be seen, however, given the fact that the Blaauwhoedenveem terrain would not be accessible for third parties from the landside.

The revision of the quayage by-law (1900)

Several city councillors during the Blaauwhoedenveem debate suggested solving the issue by changing the by-law itself. However, the city government missed the opportunity for a substantial revision of the by-law that an annexation of two neighbouring municipalities offered in September 1895. It only slightly rephrased ‘vaartlijn’ (liner service) into ‘geregelde vaart’ (regular shipping), which was

considered to be a more general description, and added a clause that gave the executive formal authority to withdraw the licence when it suited them.⁴⁵

Still, the Blaauwhoedenveem experience served as the central point of reference in ensuing discussions about the quayage by-law culminating in its final liberalisation in 1900. This discussion took place in the context of plans for further expansion of quay length. The Chamber of Commerce revived the discussion when it once again began to hammer at the lack of berths for large vessels that needed to unload (part of) their cargo in sheds. In a first letter to the municipal executive of 4 May 1897, the Chamber noticed that the existing system where only regular services could get permanent berths was ill suited to solve the bottleneck.⁴⁶ The Chamber did not mention Blaauwhoedenveem in this respect, but the director of municipal works in his advice regarding the Chamber's letter left no doubt that it based its conclusion upon this case.⁴⁷ In a third long letter, dated 19 April 1898, the Chamber explicitly dealt with the Blaauwhoedenveem affair in relation to the history of the by-law.⁴⁸ Only now did the Chamber explicitly note that the law had been focused on preventing monopolies on the *north* bank of the Meuse, that is, the city side where short sea shipping clustered. Since 1883, however, traffic had soared particularly at the *south* bank (Feijenoord and Rijnhaven), where the existence of (fenced-off) quay terrains, including sheds, had created questions of implementation that the quayage by-law was ill-equipped to deal with.

The Chamber expressed a core view that went down well at the municipality, that is, that 'private parties' serving the needs of large vessels arriving irregularly in the port should also be entitled to have permanent berths, at quay terrains equipped with sheds. While the harbour master and the directors of municipal port installations and municipal works respectively differed in their opinion about the appropriate regulation, they agreed that the quayage law should be changed sooner or later.⁴⁹ Interestingly, all three of them, using different words, much more explicitly than the Chamber of Commerce noted that Blaauwhoedenveem and other warehouse companies in practice were assured that they could get ships in front of their premises whenever they wanted – without paying for a licence to occupy a berth on a permanent basis. Thus these civil servants defined the Blaauwhoedenveem experience as an improvisation to be removed by revising the routine.

Ironically, when the municipal executive used the opportunity of the expiration of the royal assent to come up with a proposal for redrawing the by-law in 1900, the Chamber commented that it appreciated the fact that parties such as warehouse companies now could get a permanent berth too.⁵⁰ According to the articles of the new by-law as was proposed, applicants could ask for a permanent berth both for liner services operating with vessels that were mentioned by name and for irregular ships.⁵¹ Thus, as was acknowledged by the director of the municipal port installations already in 1898,⁵² contradictory to the original belief, lessees could use the right to permanent berth as an asset to earn money with. In the case of irregular ships, users of the berth would have to pay quayage for the full length of the quay. Finally, when the lessee did not request the right to permanent berth, the new by-law simply stated that the city was entitled to augment the rent of the terrain with the amount of quayage it missed. This latter clause in fact drew on an early improvisation, that is, the adjustment of the HAL contract in 1884. Characteristically, the municipal executive labelled the revision as the outcome of an organic process: 'it entirely fits with the system, as it has been indicated by the terms of contract of granting deep-water sites over the years'.⁵³ The

proposal met the approval of the Chamber of Commerce and the city council passed the new by-law by acclamation on 18 October 1900.

The new by-law opened the way for companies other than shipping firms and ship agencies to acquire a licence for a permanent berth. Stevedoring firms profited the most from this. In an ironic twist of history, during the twentieth century Rotterdam – rightfully or not – gained the reputation of a typical stevedores' port, where middlemen ferociously competed for the custom of the port's end users and thus helped Rotterdam to become the largest port of the world in 1962, a position it lost to Shanghai only in 2004.

Discussion

The execution of the Rotterdam quayage by-law originating from 1883 can be conceptualised as a routine, reflecting consensus on who were the legitimate users of permanent berths, that is, liner services. Confronted with several requests the legitimacy of which were contested, the municipal executive propagated a lenient policy in granting permanent berths. Both adversaries and supporters of this policy used organisational memory in two major debates about proposed improvisations on the routine. Improvisations upon the routine in their turn became part of organisational memory and were selectively drawn upon in further deliberations. The result of the deliberations was that permanent berths were granted to an increasingly widening circle of users, respectively including a shipping company rather than a specific liner service (Wm. H. Müller & Co. in 1891) and – although not formally – a warehousing company only using a liner service as a pretext (Blaauwhoedenveem in 1895).

The deliberations leading to incremental change of the routine can be considered part of lower order learning as elaborated upon by Zollo and Winter (2002) – consisting of processes of experience accumulation and articulation. However, the third process distinguished by them – codification – lagged behind. The municipality accumulated experiences by improvising on the routine, postponing a significant revision of the by-law and leaving its central element, the concept of a liner service, uncoded.

Still, moving beyond Zollo and Winter's perspective, the articulation of what was a 'liner service' during the deliberations naturally resulted in discussions about defining the legitimate user of a permanent berth. The deliberation thus emphatically questioned the validity of the original beliefs and preferences or, in other words, hints at higher order learning. This type of learning remained incomplete and partly implicit for a long time, however. The executive's articulation of a more inclusive understanding of the best way to serve the port's general interest introduced in the Müller debate – that is, that firms fostering the growth of the port should be equipped with berths to operate their business without too many conditions set by the government – was not immediately adopted by the majority of the city council. Instead, more emphatically than before, they stuck to the creed of 'no trading in berths', when the Blaauwhoedenveem proposal seemed to infringe on this even more.

All in all, the deliberations oscillated between selective articulations of routines, questioning whether realised and proposed improvisations actually conserved beliefs, reassertions of the original belief *and* the articulation of preferences reflecting (perceived) changes in the environment. Adding to the complexity was that the influential Chamber of Commerce during the Blaauwhoedenveem debate began to

set the *new* priority of serving the emerging commercial needs of large (irregular) ships to motivate its adherence to the *extant* routine, given the practical implications of this individual case.

Our case study thus confirms the value of taking a processual view. Higher order learning took place, but via a detour, as the politically involved business community became aware of its preferences only when observing the consequences of the improvisations upon the routine (March et al., 1991). Acknowledging the implications of the accumulation of improvisations needed time to 'sink in', as a processual view suggests. Based on their acquired experiences with the extant memory as laid down in routines, economic actors started to question the primordially of the belief of 'no trading in berths'. The new by-law of 1900 in fact did no more than formalise the existing variety in outcomes, but the revision implied that the municipality had abandoned the central belief that the prosperity of the port was best served by an unmediated relation between the port and the end users of its berths. Our story thus illustrates how lower order learning can develop into higher order learning with an almost imperceptible line dividing the two types of learning.

Another finding is that the actors in one important sense underutilised organisational memory. Compared to the extensive deliberations on the proper definition of a 'liner service', the reflection on the underlying logic of the quayside by-law was remarkably scant during the debates. How can this be explained? First of all, in general, beliefs and preferences tend to be taken for granted. Besides this, however, the underutilisation can be explained by the nature of the critical incident that inspired the initial discussion and contents of the by-law. We refer here to the heavily contested granting of 'private monopoly' on up-to-date port facilities to the Rotterdamsche Handelsvereniging in 1872, its subsequent involvement in the financial scandal so harmful to the city in 1879 and the (perceived) 'abuse' of its position in the following few years. It is the traumatic nature of this initial experience that seems to have prevented a full-blown articulation of possible vital similarities or differences between the position of RHV and later applicants for a permanent berth. The explicit testing of the validity of initial beliefs and preferences and the discussion of the need for reordering priorities in the face of arising new circumstances thus remained fragmented. The influence of trauma in the use of organisational memory might be an interesting avenue for further historical research on memory and organisational learning; building upon existing studies of this subject in other fields (e.g. Pillemer, 2004).

A possible limitation of our findings concerns the agenda setting function of memory. As the by-law did not define a 'liner service', the debates eventually produced a bewildering variety of interpretations of the concept. The evolution from a narrowly circumscribed type of legitimate user of berths to a broader interpretation of the port's general interest seems natural, either with or without all kinds of memory-inspired discussions. This should apply in particular to Rotterdam, which more and more became a bulk port in the period under investigation. However, the needs of tramp ships carrying the main bulk cargoes of ore, coal and grain played almost no role in the deliberations on the execution of the by-law.

Furthermore, as the deliberations in our case were part of a political decision making process, ideological controversies and private interests may have coloured the collective study of causal links between action and performance. Regarding ideology, the large majority of the city councillors in the period under investigation belonged to the liberal camp (Baggerman, 1994; Callahan, 1981). Those who

participated in the debates around the granting of berths were almost exclusively liberals. Therefore, the discussions about the right conduct of business–government relations were arguably not heavily tainted by ideological contradictions between representatives of the major political currents, that is, liberal and religious factions (the first socialist was elected to the city council as late as 1901). As we have seen, however, private interests counted, since several councillors through their occupational activities or family links were indirectly involved in the main bones of contention in 1891 and 1895. Argumentation was undoubtedly sometimes self-serving, for instance when defending a peculiar definition of a ‘liner service’. Still the compromises forged did not violate the business interests of the applicants for a permanent berth. Political deliberation in the end helped the Rotterdam trading and shipping elite to find a consensus on the best way of allocating the vital and scarce good of berth space in its port.

Notes

1. The two articles combining learning and memory are the only ones of this kind yielded by electronic search through the volumes of *Business History*, *Business History Review* (from 1991 onwards), *Business and Economic History* (1962–1999; titles only), and *Enterprise and Society*. More papers referring to learning and organisational memory have been published in *Industrial and Corporate Change*; an example is Becker et al. (2005). Only after finishing this article, our attention was drawn to the recent contribution of Keneley (2009) on organisational change at the largest Australian life insurer, AMP. Like us, Keneley takes into account several levels of routines (see further in the text), but she still does not provide a step-by-step analysis of the process of learning.
2. Preferences or values are conceptually distinct from beliefs (Schein, 1985), but for reasons of convenience, we consider them as part of the same level as beliefs.
3. An exception to this were the sheds belonging to a dedicated freight and passenger station at the waterside east from the city centre, opened by Nederlandsche Rhijnspoorweg-Maatschappij (Dutch Rhine Railway Company) in 1860.
4. *MRC*, 19 December 1872, pp. 122–124; *MRC*, 27 December 1872, pp. 127–140; *MRC*, 28 December 1872, pp. 141–150; Oosterwijk, 1979.
5. *MRC*, 9 November 1882, pp. 154–164; *PD*, 1882, no. 40.
6. *PD*, 1883, no. 24b, Advice Chamber of Commerce, 19 July 1883.
7. *PD*, 1883, no. 24e, p. 179.
8. *MRC*, 27 September 1883, pp. 103–107. The translations of the quotes presented in this article, all originally in Dutch, are ours.
9. Available data are neither very reliable nor compatible, but at least Rotterdam’s incoming cargo flow (<http://www.fhk.eur.nl/ws/ra/sheets.html>, sheet 3) seems to have been higher than that of its main competitors Antwerp by 1900 (Loyen, 2008, p. 454) and Hamburg in all but one year between 1903 and 1913 (*HHS*, 1903–1911/1912, 1913, 1920–1923).
10. Shares by approximation, calculated from <http://www.fhk.eur.nl/ws/ra/sheets.html>, sheet 3.
11. RMAR, inventory number (inv. no.) 936, nos. 2456 and 2457 (31 December 1883); inv. no. 937, nos. 25 and 26 (4 January 1884).
12. RMAF, inv. no. 319 (1884), no. 361.
13. RMAF, inv. no. 366 (1891), nos. 742 and 743.
14. *MRC*, 26 November 1891, pp. 132–136.
15. The three destinations involved – Aberdeen, Bilbao and Gloucester – appear for the first time in the annual overview of permanent shipping connections between Rotterdam and foreign ports in *ARCoc* annual report, 1890.
16. *MRC*, 26 November 1891, p. 134.
17. *MRC*, 26 November 1891, p. 134.
18. RMAF, inv. no. 366 (1891), no. 766b, 30 November 1891.

19. *MRC*, 10 December 1891, p. 143.
20. *MRC*, 10 December 1891, p. 145 (emphasis added).
21. RMAF, inv. no. 355 (1890), no. 75, and inv. no. 359 (1890), no. 575.
22. RMAF, inv. no. 384 (1894), no. 588 and inv. no. 386 (1894), no. 910; *PD* 1894, nos. 25 and 28.
23. *MRC*, 6 September 1894, p.110.
24. *PD*, 1894, no. 25a, Mayor and Alderman to City Council, 8 August 1894, p. 223.
25. *MRC*, 3 January 1895, p. 6.
26. *MRC*, 4 September 1894, p. 107.
27. *MRC*, 6 September 1894, p. 110.
28. *MRC*, 3 January 1895, pp. 6–7.
29. *PD*, 1894, no. 40c, 8 November 1894, pp. 319–322.
30. *MRC*, 6 September 1894, p. 113.
31. *MRC*, 4 January 1895, p. 19.
32. *MRC*, 3 January 1895, p. 9.
33. *MRC*, 4 January 1895, p. 18. Burgomaster s' Jacob added to this that, compared to Rio Tinto Company, Union Steamship certainly was to be considered a liner service (*MRC*, 4 January 1895, p.24). Rio Tinto was granted a terrain in lease and a permanent berth at Feijenoord as early as 1884/85, without discussion by the council (*MRC*, 21 May 1884, p. 66; RMAF, inv. no. 940, no. 190 [6 February 1885]). The company shipped ore from its own Spanish mines from the port of Huelva to Rotterdam and therefore indeed could hardly be called a liner service. Huelva was not included in the annual overviews of Rotterdam's permanent shipping connections mentioned in note 15.
34. *PD*, 1894, no. 40a, Mayor and Aldermen to City Council, 27 November 1894, p. 315.
35. RMAF, inv. no. 384 (1894), no. 588i, letter of 9 April 1894.
36. *PD*, 1894, no. 40b, 18 September, pp. 318–319.
37. *PD*, 1894, no. 40c, Advice of the subcommittee on the Feijenoord Port Installations, 8 November 1894, p. 320; *MRC*, 3 January 1895, p. 6 and 4 January 1895, p. 21.
38. *PD*, 1894, no. 40a, Mayor and Aldermen to City Council, 27 November 1894, pp. 311–317.
39. *PD*, 1894, no. 40a, Mayor and Aldermen to City Council, 27 November 1894, p. 313. In fact, RHV had only received deep water quay space in long lease for a term of 99 years. The use of the term 'ownership' illustrates how emotionally loaded the memory of ceding control of quay space to RHV still was.
40. *MRC*, 4 September 1894, p. 107.
41. *PD*, 1894, no. 40d, 5 October 1894, pp. 322–326.
42. *MRC*, 6 September 1894, p. 115.
43. *PD*, 1894, no. 40c, p. 320.
44. *MRC*, 3 January 1895, p. 13.
45. *PD*, 1895, no. 55a, Mayor and Aldermen to City Council, 17 September 1895, p. 547. In this letter, the executive let it be known that it had decided not to take up the suggestion raised by one council subcommittee back in 1892 – that is, after the Müller debate – to incorporate the quays in lease contracts in the case of combined requests. It considered public law as an indispensable instrument for keeping control over the waterside. See also *PD*, 1894, no. 40a, Mayor and Aldermen to City Council, 27 November 1894, p. 313.
46. *PD*, 1897, no. 4g, pp. 51–52.
47. *PD*, 1897, no. 4l, 26 July 1897, pp. 59–62.
48. RMAI, inv. no. 2937, no. 3706.
49. RMAI, inv. no. 2943, no. 5465, 10 June 1898; inv. no. 2957, no. 9734 attachment, 24 October 1898, inv. no. 2965, no. 159 attachment, 3 January 1899.
50. *PD*, 1900, no. 70c, 12 October 1900, pp. 485–486.
51. *PD*, 1900, no. 70d, pp. 487–489.
52. RMAI, inv. no. 2957, no. 9734 attachment, 24 October 1898.
53. *PD*, 1900, no. 70a, Mayor and Aldermen to City Council, 16 October 1900, p. 483.

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