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The administration of trade flows: organizational memory and selecting users in the port of Rotterdam 1883-1900

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Abstract

This paper studies an important aspect of the administration of the port of Rotterdam during a vital phase in its history. During the closing decades of the nineteenth century, the port experienced a very strong growth. Changing views and concrete experiences induced the port to widen the initially limited circle of regular users of berths and quay terrains. This change of administrative practice contributed to the further development of the Rotterdam port, that achieved the status of Europe's largest continental port at the eve of the First World War. On a theoretical level, our aim is to understand the dynamic interrelationship between several forms of organizational memory and learning. We distinguish memory of the organization (organization memory) and memory within the organization (practice memory). Deliberation is identified as a process in which both forms of memory contribute to organizational learning. In deliberation, organization memory consisting of beliefs and routines sets an agenda for remembering by individuals. Our case study of decision making by a local government demonstrates that deliberation is about the articulation of routines as well as beliefs. Experiences together with their (projected) consequences are also articulated, which leads to subtle changes of the meaning of the adopted beliefs. Learning on the level of routines induces learning on the level of beliefs. Finally, our case study suggests that the traumatic nature of initial experiences that are part of organizational memory may prevent their articulation and thus retard higher order learning.

Introduction

Ports are vital nodes in the international networks of trade flows. The administration of a port influences its competitive position in those international networks. Deciding which firms, under what conditions, may use port facilities is a major issue for any port. The port of Rotterdam was struggling with this between the years 1883 and 1900 in particular. In 1883, at the eve of its explosive growth that would make Rotterdam the largest continental European port in 1913, the city introduced a bye-law on the use of berths. Only liner services could get a permanent berth. So-called 'middlemen' were explicitly denied the use of permanent berths. This preference reflected the traumatic experience with a private company that had acquired a concession to build and operate a modern harbour complex consisting of basins, quay terrains and sheds to be equipped with cranes in 1872. In May 1879, shortly before the building of the complex was complete, the initiator and director of the company fled to America to evade prosecution for the fraud he had committed. Rotterdam was in desperation. The city government concluded from this affair that it should never again cede control of the waterfront to a private company that positioned itself between the city and the shipping companies. However, the implementation of the 1883 bye-law resulted in extensive and sometimes heated discussions about the question which (type of) firms were to be considered legitimate users of port facilities. Individual requests for a permanent berth led to reflections on the original regulation and the assumptions underlying it. Eventually, the city government decided to liberalize the bye-law in 1900. From then on, all types of firms could acquire permanent berths, including 'middlemen' like stevedoring, warehousing and forwarding companies. In hindsight, this decision removed a possible obstacle for the, intermittent, expansion of the port in the 20th century.

We consider this changing selection of port users as a case of learning from organizational memory. In most studies in the field of organizations a choice for a particular concept of organizational memory is made and elaborated upon to investigate its effect on organizational learning. Our research question is on the impact of the combination of several forms and functions of memory on organizational learning. To this end, we first provide an overview of concepts and perspectives on organizational memory and their consequences for organizational learning. We then turn to the historical case study of the port of Rotterdam, which demonstrates the effects of the multi-layered concept of organizational memory as a behavioral and cognitive guideline in combination with memory as practice.

A multi-level view on organizational memory and its influence on learning

In the following we provide a short overview of processes of organizational learning and the role of organizational memory in these processes. At the end we propose a process perspective on the impact of memory on organizational learning that combines various views on organizational memory.

Theories of organizational learning conceptualize the process how intuitions and ideas from individuals or groups within the organization and cues from the environment are selected, distributed and integrated in an organization (Crossan et al. 1999, Zollo and Winter 2002, Duncan and Weiss 1979; Nooteboom 2000). A common starting point for organizational learning is the stage of variation when ‘a combination of external stimuli with internally generated information derived from the organization’s existing routines’ (Zollo and Winter 2002: 343) is recognized. In a following stage, these ideas are critically evaluated, eventually selected and then distributed and institutionalized in the organization. The process of adopting new ideas takes place in the tension between existing knowledge in an organization as laid down in various forms of organizational memory and the expected advantages from the new input. Our study focuses on the role of organizational memory in this phase of organizational learning.

Paoli and Prencipe (2003) make a distinction between ‘memory of the group’ and ‘memory within the group’. ‘Memory of the group’ (hereafter called: organization memory) describes memory as an organizational entity on a supra-individual level. Organization memory fulfills two different functions, which relate to their forms: acting as a belief which guides interpretation and as action guidance (Moorman and Miner 1997). Beliefs describe the cognitive map or thought world that influences processes of encoding environmental data and constructing meaning (Daft and Weick 1984; Dougherty 1992). Organization memory as a belief system has an impact on the interpretation of environmental data. It provides ‘readiness for directed perception’ (Dougherty 1992: 182). A second form of organization memory is found in routines. Routines are forms of organization memory that guide action: ‘organizations remember by doing’ (Nelson and Winter 1982; Levitt and March 1988; see also Becker, 2004).

The inertial tendencies of organization memory for organizational learning are identified on the cognitive level as well as on the behavioral level. As organization memory influences perception and interpretation of the environment (Daft and Weick 1984; Paoli and Prencipe 2003), there exists the danger of not recognizing changes in the environment (Crossan et al. 1999). Organization memory thus can lead to inflexibility and competency trap (Levitt and March 1988) and to myopia in learning (Levinthal and March 1993). Routine behavior can lead to mindlessness (Ashfort and Fried 1988).

However, the strong inertial effect of organization 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 are made, whereas lower order learning rests on changes in routines. Both processes are related to behavioral versus cognitive view on organizational learning but also on a distinction of memory as a belief system or routine. Changes in routines can also contribute to higher order learning if human agency is taken into account (Feldman and Pentland 2003). During an evolutionary process changes *in* a routine contribute to changes *of* a routine. Research indicates that variation in new product development extends the scope of organizational memory and also depends on environmental turbulence (Moorman and Miner 1997). Another source of variation is that organizations only discover and thereby change ‘... values, aspirations, and identities in the process of experiencing the consequences of their actions’ (March et al. 1991: 3). On beforehand, one might expect that the long-term inertial effect of experiences is relatively low, since, as time progresses and the people involved leave the organization, the experiences underlying the lessons learned in the past tend to become non-accessible (Levitt and March 1988).

Deliberation and articulation of experiences are seen as important ingredients for overcoming inertial effects (Moorman and Miner 1997). Deliberation is a process of ‘significant cognitive effort’ where the cognitive and the behavioral level of remembering and learning are intertwined (Zollo and Winter 2000). Organizational members accumulate experiences, articulate these experiences and may finally also codify actions to be taken (Zollo and Winter 2002). Articulation takes place by constructive discussions sharing and confronting views on causal mechanisms in action-performance links. According to Zollo and Winter (2002), co-evolution of the three learning mechanisms of experience accumulation, articulation and codification is vital for the improvement of the existing routines. However, processes of experience accumulation and articulation as such seem insufficient to delineate the process of deliberation as there are no clear points of reference. Purser et al. (1992) describe deliberation as a sense-making process of coping with equivocality. This hints to common culture as guiding the process of deliberation.

In this respect, Weick and Westley (1996) claim that organizational learning takes place in the juxtaposition of order and disorder. A common culture offers order, whereas improvisations on and deviations from action routines bring in disorder. A common culture is defined as a socially shared system of meaning that guides sense-making processes in equivocal problems. For learning, an organization needs a balanced juxtaposition of both: ‘The likelihood of learning drops when invention and disorder overwhelm capacities for retention and identity, or when systems, routines, and order overwhelm capacities for unjustified variation.’ (Weick and Westley

1996: 115). A stable culture is perceived as a point of reference for evaluating variations and disorder. This process also works the other way round: variation and disorder offers the necessary condition for questioning the existing order, e.g. in routines or belief systems. However, common culture in this way can also be identified as inhibiting organizational learning (Purser et al. 1992).

This raises a new question of how the cultural system might change. Semantic learning is suggested as form of organizational learning where in a subtle process labels as used in the common culture are maintained, but change their meaning to cope with new needs (Corley and Gioia 2003: 624). In this way change on a lower level, by assigning new meanings to old labels, can effect change on a higher level – the common culture.

The second understanding of organizational memory distinguished by Paoli and Prencipe (2003), memory within the organization (practice memory), stresses the social-relational context as order in which remembering takes place. Remembering in this approach is considered exclusively an individual activity. Only individuals have memory and can draw on it (Feldman and Feldman 2006). However, individuals in an organization do not retrieve knowledge from their personal memory in an arbitrary way. As individuals are embedded in an organizational context, this context guides remembering (Paoli and Prencipe 2003: 156).

Our review of the literature suggests that remembering and learning is conceptualized at several levels and can take place by differing mechanisms. Organization memory is both a belief system and a guideline for behavior, in the form of routines. These routines are improvised upon in practice, creating experiences. The deliberation upon these experiences may question the order and modify routines and beliefs. This transformation occurs in an organizational context of (possible changing) social relations and may occur by subtle changes of the culture.

Administration of the port of Rotterdam

Delineating which types of firms were permitted to occupy berths under what conditions was an important way how the local government defined its own economic role in the developing ports of the late nineteenth century. Our focal routine is the so-called bye-law on quayage that regulated the use of permanent berths in the Rotterdam port from 1883 (quayage is the fee the users of the berths paid to the city). We analyze the deliberations leading to the introduction of this standard operation procedure 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 a matter of execution by the municipal executive, consisting of the Mayor and Aldermen. An interference with another routine, 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. This interference of routines can be considered critical incidents as defined by March et al. (1991). We focus on the two main debates of this nature, on the requests of the firms Müller (1891) and Blaauwhoedenveem (1894/95) respectively. To link these debates in the implementation of the bye law in general, we sometimes refer also to similar cases that were discussed by the city council.

In decision making by the council, an elaborate procedure was followed. Subcommittees of the council (that counted 39 members, including the Aldermen), chaired by the Mayor or an Alderman, wrote reports preparing the discussion. Civil servants heading specific department of the city administration advised the municipal executive directly or via the subcommittee involved. The Rotterdam political and economic elite overlapped to a significant extent: a substantial number of city councilors were managers and/or owners of shipping firms, ship agencies and trading companies (Callahan 1981; Baggerman 1994). A main outside party that provided input for the discussions was the Chamber of Commerce. The advices of this influential voice of the local shipping and trading interests were highly valued by the city government. Several board members of the Chamber were also city councilors throughout the entire period; the overlap in membership with 4 to 7% between 1871 and 1892 was however small. The Chamber acted as an autonomous party, often triggering a more passive municipality into action (Callahan 1981).

The available empirical material offers a solid basis for tracing the remembering and articulation of organizational memory in detail. The executive regularly provided the council with letters and notices underlying proposals. Some of them were printed and published, for instance regarding the hotly debated request by Blaauwhoedenveem for a permanent berth in 1894/95. In other cases, however, councilors would have to undertake some effort when they wanted to retrieve unprinted and unpublished written information from the organizational memory. These primary documents as well as the deliberations themselves form the core of the empirical material of this paper. In addition, we consulted relevant other archives and secondary literature.

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 firms figured as potential users involved in loading and unloading cargo via the shore: industrial firms, trading companies, forwarding companies, warehousing companies, railway companies, seagoing and inland shipping companies, ship agencies and specialized transshipment firms. Often, firms covered several fields of activity. As we show below, seagoing shipping companies

were long considered the most prominent 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 harbor made the space for berthing ships increasingly scarce in the latter part of the 19th century. By 1872, when an artificial 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, without full protection against weather influences and theft. The building of a harbour complex at the south bank at Feijenoord created the first port area with quays and terrains, sheds, and direct railway connections, separated from city life. 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 Handelsvereening* (Rotterdam Trading Company, RHV) to develop and operate the Feijenoord installations. The quay space at Feijenoord was given in long lease to RHV for 99 years. This decision of the municipal government was made only after fierce discussions in the city council (MRC, 19, 27, and 28 Dec. 1872: 122-124 and 27-150) and in the local press at the end of 1872 (Oosterwijk 1979). Opponents were afraid that RHV would abuse its monopoly on deep-water space, although the city government would monitor the tariffs of RHV.

However, 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 in a state of shock. The local newspapers and several pamphleteers started a prolonged discussion about whom were to blame for this debacle.

In 1882, the city took over the Feijenoord-complex from RHV. 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 (Van den Noort 2000: 389-391; Devos and Van Driel 2000). 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 (MRC 9 Nov. 1882: 154-164 and PD 1882, no. 40: 259-279¹), while the capacity of berth space in the port as a whole would be allocated according to licenses, that is, through public law.

¹ For an explanation of the abbreviations used in referring to primary sources, see the list at the end of the paper.

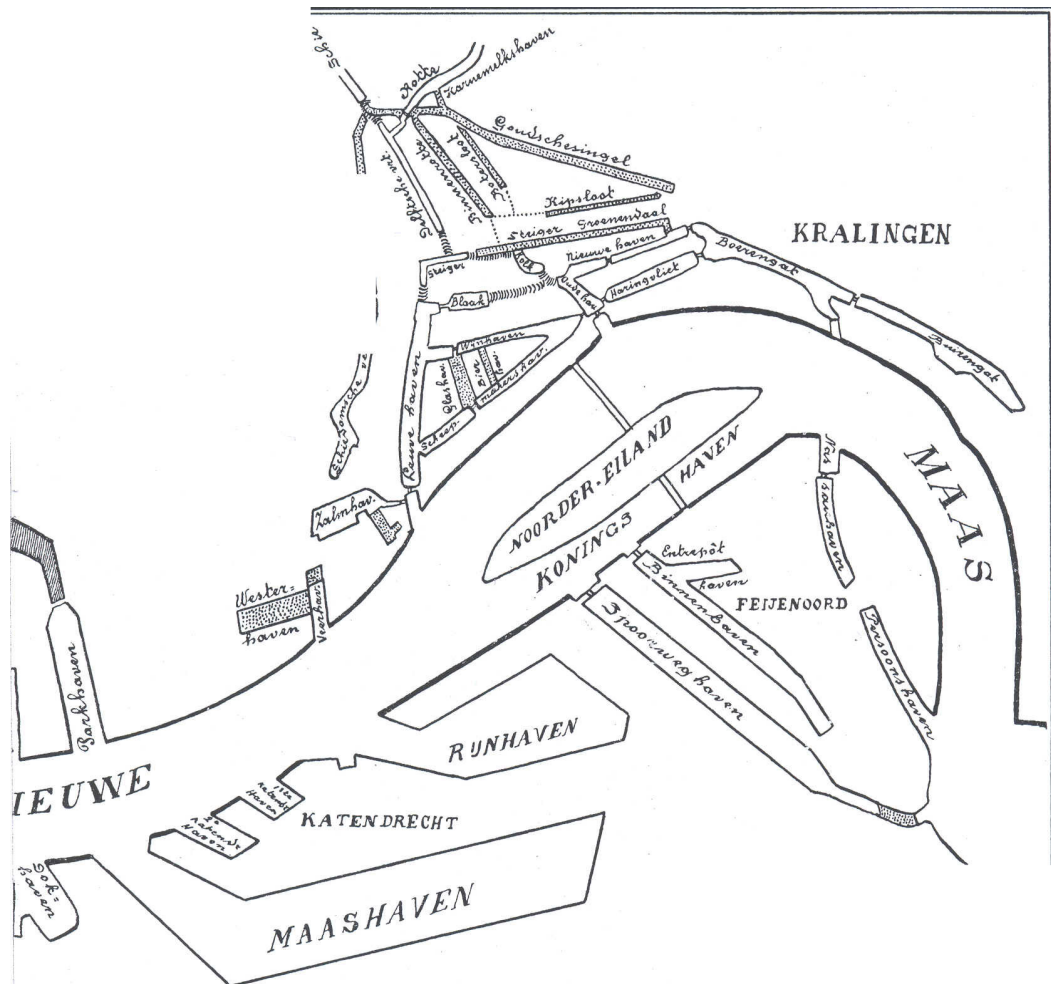
To allocate the berth space, a bye law on the quayage was introduced in October 1883. It granted only liner services the right on a permanent berth. The Chamber of Commerce had argued for this focus in particular in relation to Rotterdam's main competitor, the Belgian port of Antwerp, where the facilities for liner services were said to be much better (Annual Report 1882). Introducing a license-system would also end the situation that certain (short sea) shipping lines permanently occupied berths at the north bank, just according to custom (PD 1883, no. 24b, Advice Chamber of Commerce, 19 July 1883). Preventing privileged positions of individual private firms was a main issue in drafting the new bye-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 harbor appear less attractive to shipowners. (PD 1883, no. 24e: 179) The city council shared this aversion to what one its members, followed by the burgomaster, called 'trading' in berths and accepted the bye law without substantive discussion about its core (MRC 27 Sept. 1883: 103-107). While it was not mentioned in the memorandum and in the discussion, the experience with RHV clearly induced this pre-occupation with preventing middlemen to settle themselves between port authority and 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, the latter repeatedly introduced some kind of 'dock fee' for ships seeking a berth in the Feijenoord harbors, on top of the city's regular harbour due (Van den Noort 2000: 383). This experience had further increased concerns about the possible abuse of a monopoly on modern port facilities by an independent middleman.

Avoiding disorder: the first implementations of the bye-law

The quayage-bye law was a standard operating procedure that reflected a belief of how the way the prosperity of the Rotterdam 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 routine took place against the background of both the continuous growth of shipping to and from Rotterdam and the expansion of its port capacity (see figure 1). By 1883, Rotterdam was already the largest Dutch seaport. Its big growth spurt, that would make Rotterdam the largest European continental port at the eve of the First World War, was yet to come. Supported by dredging works that maintained the New Waterway at a sufficient depth from 1886, and fueled by the industrialization of the German hinterland in particular, Rotterdam became a bulk port - handling huge amounts of ore, coal, and grain - rather than a general cargo

port between 1880 and 1913. 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 needed remaining 'free' capacity for loading and unloading ships.

Figure 1 – The Port of Rotterdam around 1928



Source: Kamer van Koophandel 1928.

Before the end of 1883, tens of liner shipping lines and shipping agencies applied for permanent berths, mainly formalizing their extant use by short-sea ships at the north bank of the river. The municipal executive granted the requests without discussion and saw no need for special provisions (RSB 1883). Leasing out quay terrains was not at stake here. This changed in 1884, when the renewal of lease contract with the *Nederlandsch-Amerikaansche Stoomvaartmaatschappij*, better known as Holland America Line (HAL), at the Koningshaven at the southbank (part of Feijenoord) 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 in 5,000 guilders rent and 5,000 guilders quayage to align the contract with the new system (FCC inv. no. 319 (1884), no. 361). 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 quayage law in an unusual way, the city council did not define this improvisation as a disorder to be discussed by it. In 1891, however, a proposal for a basically similar arrangement at this site with another firm was perceived as a disorder by the council and 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. The municipal executive was eager to secure itself of a regular source of income and proposed a five-year agreement that was similar to that of the earlier one with HAL. The city would still receive 10,000 guilders per year, either as the full pay for quay terrain and sheds or as a combination of a quayage up to 5,000 guilders (tantamount to the quay length of 200 meters) supplemented by a rent sum totaling 10,000 guilders (FCC, inv. no. 366 (1891), no.'s 742 and 743).

Councilor F.A. Plate acknowledged that relating the terrain and sheds lease to a permanent berth was in place, since – given the fact that the terrain was fenced off at the landside - the berth in practice would be useless for other parties. Yet, despite the similarity with the HAL agreement, he and others contested the granting of permanent berths to Müller (MRC 26 Nov. 1891, 132-136). This opposition seemed at least partly motivated by private interests of some of the city councilors. While HAL interests were represented in the council from its founding in 1873 by its directors W. van der Hoeven, city councilor from 1866-1885, and J.V. Wierdsma (1886-1895) respectively, Müller was a relative outsider. German entrepreneur Wilhelm Müller had founded

his ore trading firm in 1876 only and established a branch in Rotterdam two years later. There the company became active as a shipping company, ship agent, forwarder, and agent of a leading Dutch railway company. According to one retrospective account, Wilhelm's son-in-law Anthonij Kröller - who had become a director of the firm in 1889 after the untimely death of his father-in-law - had antagonized his fellow ship agents by pinching customers from them, supposedly to get the right of permanent berth (BZA, no. 646). It was therefore perhaps no coincidence that Plate, a prominent ship agent, started the discussion in the council.

Plate and his sympathizers could effectively draw on the 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 stated individual ships to support their requests for permanent berths at the Feijenoord harbors. 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 bye law (MRC 26 Nov. 1891: 134). Mayor F.B. 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 harbors' (MRC 26 Nov. 1891: 134). By downplaying the relevance of 'intentions' of entrepreneurs and denying conflicts of interests between port and berth users, the mayor implicitly infringed on the belief underlying the routine of 'no trading in berths'.

In line with the mayor'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 (FCC, inv. no. 366 (1891), no. 766b, 30 Nov. 1891). The three ships Müller stated in second resort would operate in three different lines. Still, when the proposal was again discussed by the city council (MRC, 10 Dec. 1891: 142-146), W.M. Pieters, like Plate a ship agent, described naming specific ships as only a formal step by Müller to comply with the bye-law. 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 bye law was meant for granting permanent berths to weekly or even daily services only. He clearly had in mind the standard in shortsea traffic that dominated the Rotterdam liner shipping scene. Pieters thus articulated the understanding of the nature of a 'liner service' that, as the mayor pointed out in reply, had remained unspecified in the bye 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 the mayor of the way the interests of the ports were best served. More responsive to this, councilor E.E. van Raalte, 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*’ (MRC 10 Dec 1891: 145, italics by authors). 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. The provision was thus a temporary one, but the lease to Müller and concomitantly also the right-to-permanent-berth were renewed without discussion in the following 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 bye 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 bye-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 meters width directly behind the quay-wall would be immediately stopped when the lessee no longer wanted to pay for a permanent berth (FCC inv. no. 355 (1890), no. 75). 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 interferences of the quayage routine with the terrain lease routine rather than aligning the two in general thus characterized the outcome of decisions. Following the Müller-debate, in 1892, the executive did not take up the suggestion from one council subcommittee to incorporate the quayage in lease contracts in the case of combined requests. It considered public law as an indispensable instrument for keeping control over the waterside (PD 1894, no. 40a, 27 Nov. 1894: 313 and 1895, no. 55a, 17 Sept. 1895: 547).

The Blaauwhoedenveem-debate (1894/95): widening the circle of users?

A few years later, a request by the Blaauwhoedenveem firm gave rise to a very extensive, sometimes heated debate that took five meetings of the city council between September 1894 and June 1895, filling 31 double-column folio pages of the official minutes. The company requested for a thirty year lease of a quay terrain in front of its warehouse at the recently dug Rijnhaven and for a permanent berth, stating shipping line Union Steamship as the user. The municipal executive

supported, and in fact even co-arranged the request (FCC, inv. no. 384 (1894), no. 588a-m and 910a-m; PD 1894, no.'s 25 and 28). Just like in the Müller-case, the municipal executive was eager to maximize 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 dubious practical value for other users. New was the connection to a warehouse, a kind of facility that was beginning to make its entrance at the Rotterdam deep water-front.

Blaauwhoedenvem's status differed from Müller's. While the former could boast an age-old history going back to early 17th century Amsterdam, it still – as a company involved in physical handling of goods rather than organizing trade and cargo flows – had a low status compared to ship agency firms (Van Driel, 1994). As far as the opposition in the city council was of 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 bye-law, a request for a permanent berth by a warehouse company rather than by a shipping company or its agent was unprecedented. After one councilor objected to the request, because '... the applicants do not actually have the disposal over this line...' (MRC 6 Sept. 1894: 110), Blaauwhoedenvem arranged that Union's ship agent did the formal request. It was no secret that, like in the Müller-case, this was purely a formality. Blaauwhoedenvem 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 (FD 1894, no. 25a, 8 Aug. 1894: 223).

Councilor F. Ebeling challenged this liberal application of the bye-law by digging up from organizational memory the contracts with Müller and another tenants, that not permitted them to use sheds for cargo from ships other than those for which they had gained the right-to-permanent berth (MRC 3 Jan 1895: 6). Before that, Plate, who again opened the discussions, had flatly denied the legitimacy of the request: 'No-one amongst our midst will categorize the Union-line under the regular lines, as is meant by the bye-law.' (MRC 4 Sept 1894, p. 107). Other councilors elaborated on this negative assessment, drawing on local experiences. L. Sanson (MRC 6 Sept 1894, 110) came up with figures illustrating the tiny generation of cargo to the port by Union Steamship's service between South-Africa and Rotterdam. Ebeling compared this unfavorably with the Rotterdamsche Lloyd ships sailing between the Dutch East Indies and Rotterdam, which almost permanently occupied their berths (MRC 3 Jan 1895: 6-7). The subcommittee on the Feijenoord-installations, that - prompted by the latter's director - brought out a negative advice on the request, even posed that the discussions around the bye-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 (PD 1894, no. 40c, 8 Nov. 1894: 319-322).

Van Raalte, however, who in the meantime had become Alderman and now was a defender of the proposal, deemed the amount of cargo carried to the port irrelevant (MRC 6 Sept 1894: 113). Challenged by Sanson, he claimed consistency in his articulation: Union was a regular line in the sense of the bye law, while Müller's ore ships had much less deserved this label. Later, he made clear that to him the decisive criterion was the regularity of the service (MRC 4 Jan 1895: 19). J. 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 (MRC 3 Jan 1895: 9). Alderman A. de Monchy (MRC 4 Jan 1895: 18), 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 the objectivity of the spirit of the bye-law at all.

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 transshipment.' (FCC 1894, No. 40a, 27 Nov. 1894: 315). More elaborate than during the Müller-debate, the executive thus formulated a more all-embracing understanding of the circle of legitimate users of permanent berths, implicitly qualifying the importance of sticking to the belief of no trading in berths. A somewhat different new economic need was perceived by the Chamber of Commerce, that 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 (FCC inv. no. 384 (1894), no. 588i, letter of 9 April 1894). 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 (PD 1894, no. 40b, 18. Sept: 318-319). 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* 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 councilors 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 bye law that the city should prevent 'trading in berths' (PD 1894, no. 40c, 8 Nov. 1894: 320; MRC 3 Jan 1895: 6 and 4 Jan 1895: 21). 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 its faith in the creed of 'no trading in berths' (PD 1894, no. 40a, 27 Nov. 1894, 311-317). It noted that there was no need to fear a monopoly in this individual case, since enough free quay 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 the RHV. Since the two cases should be considered as different, the belief was not questioned. Equally rare, more directly, but still implicitly, the municipal executive also remembered 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 (PD 1894, 40a: 313). This served as a reply to the arguments put forward by Plate and others. The latter had drawn on very recent local experiences with two other non-shipping companies, Vriesseveem and the Katoenolie-Maatschappij, that had accepted that their warehouses were built at a large distance of 30 meters from the quay (MRC 4 Sept. 1894: 107). 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 (PD 1894, no. 40d, 5 Oct. 1894: 322-326). 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 legitimized to request for quay terrains and permanent berths at the Rijnhaven too (MRC 6 Sept 1894: 115). Pakhuismeesteren, founded in 1818, had a much a higher social standing than its competitor Blaauwhoedenveem due to the fact that its owners also operated in international trade (Van Driel, 1994). Two councilors were kindred with them: the aforementioned Alderman A. de Monchy, championing the cause of the warehouse companies, and P. van Rossem. The latter ridiculed the words of the subcommittee of the Feijenoord Port Installations that the proposed deal enabled Blaauwhoedenveem to 'exploit the terrain for its own benefit' (PD 1894, no. 40c, 320). In arguably the most pervasive refutation of the belief underlying the quayage bye-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' (MRC, 3 Jan 1895: 13).

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

Final revision of the quayage bye law (1900)

Several city councilors during the Blaauwhoedenveem debate suggested to solve the issue by changing the bye-law itself. However, the executive did not define the proposal as a disorder. The city government missed the opportunity for a substantial revision of the bye law that an annexation of two neighboring 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 license when it suited them (PD, 55a-d).

Still, the Blaauwhoedenveem experience served as the central point of reference in ensuing discussions about the quayage bye-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 series of letters to the municipal executive, it alternatively stressed the unfulfilled needs of large irregular ships and regular services carrying general cargo to the port in large vessels. In a first letter of May 4, 1897 (PD 1897, no. 4g, p. 51-52), the Chamber noticed that the existing system where only regular services could get permanent berths was ill-suited to solve the bottleneck. The Chamber did not mention the name of 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 local experience (PD 1897, no. 4l, 26 Juli 1897, p. 59-62). In a third letter, dated April 19, 1898 (IBA, inv. no. 2937, no. 3706), the Chamber explicitly dealt with the Blaauwhoedenveem-affair in relation to the history of the bye-law. The letter stated that the 1883-law had been focused on preventing monopolies on the north bank of the river, that is, the city side where shortsea shipping clustered. The Chamber had not earlier reinterpreted the belief in such an explicit way. The belief - thus articulated - had proved to be at odds with the actual development of traffic that

had soared at the south bank, that is, at the Feijenoord-harbours and Rijnhaven, while the practice of fencing off quay terrains had not been foreseen in 1883, still according to the Chamber.

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 (IBA, inv.no. 2943, no. 5465, 10 June 1898; inv. no. 2957, no. 9734-attachment, 24 Oct. 1898, inv. no. 2965, no. 159-attachment, 3 Jan. 1899). Interestingly, all three of them, using different words, much more explicitly than the Chamber of Commerce noticed that Blaauwhoedenveem and other warehouse companies, without having the right to permanent berth and paying for this, in practice were assured that they could get ships in front of their premises whenever they wanted. Thus these civil servants defined the Blaauwhoedenveem-experience as a disorder 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 bye law in 1900, the Chamber commented that it appreciated the fact that parties such as warehouse companies now could get a permanent berth too (PD 1900, no. 70c, 12 Oct. 1900: 485-86). According to the articles of the new bye-law (PD 1900, no. 70d: 487-489), applicants could ask for a permanent berth both for liner services operating with vessels that were mentioned by name and for irregular ships. Thus, as was acknowledged by the director of the municipal port installations already in 1898 (IBA, inv. no. 2957, no. 9734-attachment, 24 Oct. 1898), 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 of a terrain abstained from requesting the right-to-permanent berths, the new bye 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 local experience with the application of the quayage law, that is, the adjustment of the HAL-contract in 1884. The municipal executive elucidated the change of the bye law in a telling way: '...it entirely fits with the system, as it has been indicated by the terms of contract of granting deep-water sites over the years.' (PD 1900, no. 70a, 16 Oct. 1900: 483). The proposal met the approval of the Chamber of Commerce and the city council passed the new bye-law by acclamation on October 18, 1900.

The new bye-law opened up the way for companies other than shipping firms and ship agencies to acquire a license 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 Sjanghai only in 2004.

Discussion

The Rotterdam quayage bye-law of 1883 can be conceptualized as part of the 'memory of the group' (organization memory). It took the form of a routine, reflecting consensus on who were the legitimate users of permanent berths, that is, liner services. The cognitive belief system behind this routine was also part of organization memory. The central belief was that the prosperity of the port was served by an unmediated relation between port and end user; 'trading in berths' by middlemen was emphatically rejected.

The organization memory sets an agenda for remembering. Our case demonstrates that actors draw on organization memory in a selective way. In two major debates on proposed improvisations on the routine, both adversaries and supporters of the municipal executive's lenient policy of granting permanent berths (re)constructed the concept of a liner service. They articulated what they considered the tacit understanding of a liner service at the time the bye-law was framed. This ongoing articulation was biased towards a particular element of the existing routine. However, the articulation of what was a 'liner service' naturally flew over in discussions about defining the legitimate user of a permanent berth. This deliberation emphatically questioned the validity of the original beliefs, as the municipality was discovering its preferences only during the process of improvisation upon the routine (March et al, 1991). Our case study reveals that practice memory does not overrule the existing routines, but can break the inertia of organization memory in a cumulative way. Practice is understood here as selectively remembering by different players in different ways from organizational memory. Remembering not only implies articulation, but also reconstruction. A process of collective deliberation linked individual acts of remembering. This deliberation took place in a changing organizational context, where new actors appeared on the scene in the shape of applicants that did not conform to the original profile of legitimate users of permanent berths. The occurrence of these newcomers reflected environmental changes that also induced existing actors such as the executive and the Chamber of Commerce to come up with new ideas as input for improvisations.

Experiences and outcomes in their turn became part of organizational memory and were selectively drawn upon in further deliberations. For instance, unlike the basically similar arrangement with HAL (1884), the Müller-deal of 1891 was explicitly recognized as a disorder,

signaling a shift to granting a permanent berth to a firm in general rather than for a liner service in particular. The experience served as point of reference for city councilors resisting further infringements on the routine. The improvisation however also paved the way for the executive to come up with a proposal for an even bolder deviation from the routine a few years later, by proposing to grant a permanent berth to warehousing company Blaauwhoedenveem. The executive's articulation of a more inclusive understanding of the best way to serve the port's general interest in the debates - that is, that firms fostering the growth of the port should be equipped with berths to operate their business without too much conditions set by the government - was however not adopted by the majority of the city council as a new belief in first instance. Instead, the more obvious the disorder, the more emphatically they stuck to a rigid interpretation of the routine and to the belief of 'no trading in berths'.

In sum, the deliberations oscillated between selective articulations of routines, questioning whether realized and proposed improvisations actually conserved beliefs, and reassertions of the original belief *and* the introduction of new beliefs reflecting (perceived) changes in the environment. Deliberation in our case thus had a broader scope than is suggested by Zollo and Winter (2002) and not only concerned evaluating actual action-performance links. This all-compassing nature of deliberation created incongruencies in the process of learning that hindered a straightforward realignment of routines and beliefs. We name a few of these incongruencies coming to surface in the Blaauwhoedenveem-debate. First, the further articulation of the definition of a liner service did not immediately enhance insight into action-performance links, but only increased the diversity of interpretations. Second, the municipal executive presented its proposed decision as both in line with the original belief of 'no trading in berths' and as responding to newly perceived commercial needs. Third, even more paradoxically, the influential Chamber of Commerce referred to perceived pressing *new* commercial needs to motivate its adherence, given the practical implications of this individual case, to the *extant* routine.

This variety in the subjects of deliberation cast doubts on the feasibility of co-evolution of the three learning mechanisms of accumulating experience, articulation of knowledge and codification of activities propagated by Zollo and Winter (2002). Likewise, learning through juxtaposing order (culture) and disorder (improvisation in routines) seems to be more elusive than Weick and Westley (1996) suggest. Disorder 'overwhelmed' the capacities for order not only through a variety of experiences, but also through creating tensions on the level of beliefs, which hindered a clear-cut juxtaposition of disorder and order. Alternatively, in a process resembling semantic learning (Corley and Gioia, 2003), an accumulation of experiences of providing an increasingly widening circle of types of firms with permanent berths, subtly changed the meaning

of the label of 'keeping control by the government'. Deliberation was thus a highly equivocal process: real and projected implications of improvisations on the routine acted as a point of reference for ultimately changing the routine and, by this, the belief. Acknowledging the implications of the accumulation of improvisations needed time to 'sink in'. Following the recurrent articulation of new commercial needs, five years after a major experience of a firm that obtained a permanent berth without having a formal license to it, a new, much more liberal bye-law was designed. The revision of the routine implicated 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. The new routine in fact formalized the grown variety in outcomes. Our story thus illustrates how lower order learning can accumulate into higher order learning with an almost imperceptible line dividing the two types of learning.

A final paradox that is raised by the case study deserves some elaboration. Largely absent in the deliberations was the probing experience with a private monopoly on local modern port facilities in the shape of the *Rotterdamsche Handelsvereeniging* between 1872 and 1882, that underlay the belief reflected in the quayage bye-law from 1883. It is the traumatic nature of this initial experience that seems to have hindered a frequent and full articulation during the debates. Typical for the distortion of the memory was that when the municipal executive eventually remembered the RHV affair in legitimizing its stance in the *Blaauwhoedenvveen*-debate, it suggested that the RHV had been given deep-water sites in ownership, while actually it only had concerned a long-lease agreement. This lack of repeated and explicit articulation of similarities and differences between initial and new experiences, which could have helped to evaluate the validity of existing beliefs, slowed down higher order learning.

The effect of trauma on the ability to remember earlier experiences has thus far not received a prominent place in the literature on organizational memory and learning. To further illustrate trauma as a potential fruitful avenue of research, a short presentation of another story developing in the port of Rotterdam during the same period is due (Van Driel and Schot, 2001 and 2005). An initial - still mysterious - experience, possibly arson of an early bucket elevator by grain workers around 1882, was apparently so traumatic for port entrepreneurs that they memorized it, if they did at all, only in terms such as 'shivering', 'sad', and 'dangerous'. Induced by this virtually unarticulated memory, at two occasions, in 1896 and 1904, firms involved in grain handling decided to introduce new laborsaving machinery without laying-off workers. This was highly remarkable, as employers in other sectors of the port did not hesitate to sack workers when it suited them. Only after two strikes of workers anticipating on loss of work in the future, the last one accompanied with severe outbursts of violence, the grain elevator company involved made a

U-turn and decided to break labor resistance by a massive ordering of new pneumatic machines in July 1907. This final change of practice was delayed and not discussed in relation to the memory of the original event, and much 'abrupt' and radical than in our main case: from 'no lay offs' to full-scale adoption of a new technology, no matter the consequences for employment. Unlike the first case, higher order learning was thus clearly distinct from lower order learning and did not develop in a cumulative way. Traumatic experiences thus may co-shape the connection between the two types of organizational memory distinguished in this paper.

Limitations

A possible major limitation of our findings concerns the agenda setting function of memory of the organization. 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 that more and more became a bulk port. However, the needs of tramp ships carrying main bulk cargoes of ore, coal and grain almost played no role in the debates. Furthermore, for instance, Rotterdam's main competitor, the city of Antwerp, never introduced something like a quayage bye-law. Antwerp thus could not learn from debates around such a routine; it granted permanent berths almost exclusively to shipping companies until World War II.

As the deliberations in our case were part of a political decision making process, ideological controversies and specific private interest may have colored the collective study of causal links between action and performance. The large majority of the city councilors in the period under investigation belonged to the liberal camp (Baggerman, 1994 and Callahan, 1981). Those who participated in the debates around the granting of berths quoted below were even almost exclusively liberals. Therefore, the discussions about the right arrangement of business-government relations were not heavily tainted by ideological contradictions between representatives of major political currents, that is liberals and religious parties (the first socialist was elected in the city council as late as 1901). Political interests certainly influenced deliberations, however, in the sense that several councilors through their occupational activities or family links were indirectly involved in the main bones of contention in 1891 and 1895.

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