

## Specifying the triggering role of events in path dependence

### Abstract

*The triggering role of events is underspecified in studies on path dependence. My central question is whether and how events (including early choices) resonate with initial conditions in triggering a certain path. From five case studies, I infer three possible scenarios: (i) no salient resonance, making the direction of the path highly unpredictable; (ii) salient resonance, making the direction of the path triggered by one of more events highly probable; (iii) resonance of the event(s) with one or more initial conditions, while there is no fit with other important conditions, making the direction of the path moderately predictable. Sometimes critical events truly trigger organizations onto a certain path, whilst in other instances (sequences of) events merely influence the typical traits of and the commitment to a path in a global direction which the organization, given the initial conditions, had probably taken anyhow.*

### Introduction

Events are part and parcel of a path dependence process: “The starting point of any advanced path dependence thought stresses the importance of past events for future action...” (Sydow et al., 2009, 690). A pressing question is however what are exactly events? Sewell (2005, p. 273) defines events as “temporally concentrated sequences of actions that transform structures”, thus distinguishing events from mere happenings. In practice, authors of path dependence studies use the concept of event in a less distinctive manner. They often give the term a special flavour by speaking of “small events”, “contingent events”, “chance events”, “random events” or “microevents” (Arthur, 1989; Bennett and Elman, 2006; Martin and Sunley, 2006; Djelic and Quack, 2007; David (1985) in his pioneering study uses the phrase “historical accidents”). Words like “contingent”, “random”, “chance” suggest that these events are outside the control of the actors involved in developing the path. There are however also authors who speak of “early moves”, “early choices”, or “initial choices” (Crouch and Farrell, 2004; Hansen

and Eschelbach Hansen, 2007; Thelen, 1999; Sydow et al., 2009). Most outspoken of all, writing about organizational path dependence, Sydow et al. (2009) equate the initial choice with an event triggering the path.

A focus on the initial choice may be particularly suited to study organizational path dependence which is the subject of this paper. Equating choices with events however raises several questions about the nature of events and their role in path dependence. First, are all events contributing to path dependence deliberate choices? What about a big fire completely destroying a firm's facilities or the unexpected death of a leading businessman? Seen in this light, it seems unduly restrictive to limit the study of the role of early events to initial choices. A question that then comes to mind is: how do sequences of exogenous events become part of the path studied? Focussing on initial choices seems an appropriate way to study the intersection of one or more sequences of external events and the path studied. After all, the fundamental question of *how* critical events trigger path dependence is still unresolved. Even when acknowledging that "in organizations initial choices and actions are embedded in routines and practices" (Sydow et al, 2009, 692), one can think of so many possible interactions within "a mixture of limiting conditions and chance events" (Martin and Sunley, 2006, 424) that generalizing about how events trigger paths seems futile. However, in a contribution in the field of public policy, Sarigil (2009) points a way for generalizing about the interaction of triggering events and initial conditions. He emphasizes that whether exogenous or endogenous triggers initiate institutional change depends on their match with prevailing ideas and values and how actors frame this resonance.

Although I concur to Sarigil's view that agency should have a central place in accounts of institutional change, in this paper, I extend his ideational perspective and focus on the resonance of triggering events with initial conditions, consisting not only of preferences prevailing among actors, but also of environmental requirements and resources (van Driel and Dolfsma, 2009).<sup>1</sup> My contribution aims to specify the triggering role of events in path dependent processes in two ways. First, how do (sequences of) external events relate to initial choices which set the organizations on a certain path?

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<sup>1</sup> Reflecting upon the distinction in three main categories made in this earlier publication, I now prefer the use of the term "preferences" to a more limitative category of "philosophies and values".

Second, to what degree and how do events (including choices) align or “resonate” with initial conditions both internal and external to the organizations studied? In particular this more substantial question may help us to elaborate on the nature of the triggering effect of events on path dependent processes.

My study has an exploratory nature and consists of empirical analyses of five cases. I draw upon earlier studies performed on the 19<sup>th</sup> and 20<sup>th</sup> century business in the Dutch and Belgian ports of Amsterdam, Rotterdam and Antwerp. The five cases show a variety in the extent and in the manners that possible critical events relate to initial choices and resonate with prevailing conditions. Detailed attention to the details of the role of critical events is needed to disentangle the several ways they may shape paths.<sup>2</sup> To assess the role of events, some authors recommend a counterfactual approach (e.g. Vergne and Durand, 2010; see also Mackay, 2007). As a historian I feel on safer ground with a comparative approach, which can serve a similar purpose (although I acknowledge that any empirical analysis contains counterfactual reasoning, explicit or not). In the case descriptions - which are presented in chronological order - comparisons are made between (type of) firms, places and/or periods. While the focus is on the triggering role of events, it will not always be possible to distinguish this precisely from the possible path-reinforcing role of events in a later phase. Anyhow, for a full understanding of the triggering role of events, basic knowledge of the evolution of the path and its final outcome is needed.

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<sup>2</sup> One would expect at least empirical studies using a path dependence perspective to go into the role of crucial events. However, this is not always the case, even in studies on organizations and industries. For instance, in a recently published edited volume (Schreyögg and Sydow, eds., 2010), that provides a general impression of the state of the art of the study of path dependence in these fields, only half of the case studies mention specific critical events at all, dealing with them mostly only briefly. I count 13 separate cases in 11 empirical contributions (leaving chapter 8 out of consideration as it basically concerns a technology). In six case-studies singular events are signalled: chapter 3 (sequence of events leading to Toyota’s near failure in 1949-1950, committing it to lean production), chapter 4 (interstate conflict between New York and New Jersey about railroad freight rates triggering the founding of the Port of New York Authority as a bi-state agency), chapter 5 (move of German capital from Bonn to Berlin in 1999 bringing government-business relations in a new stage), chapter 6 (crisis due to falling profits and accusations of currency manipulation, followed by entry of Jan Wallander as CEO at Handelsbanken (late 1960s), who set the firm onto the path of decentralisation), chapter 9 (ordinance of 1669 to limit frauds that initiated the French system of public timber auctions), and chapter 13 (first oil crisis of 1974 inducing the Dutch small-fields policy in gas exploitation).

**Case 1: long-term difference in diversification between two “twin companies”.**

In January 1818, two identically named, but independent firms were founded in the Dutch ports of Amsterdam and Rotterdam respectively (van Driel, 1994). By 1959, the Amsterdam Pakhuismeesteren of the Thee (literally “Warehousemasters of the Tea”) still specialized in tea warehousing. In that year the firm was taken over by its former Rotterdam namesake Pakhuismeesteren, a much larger company that by then was involved in the warehousing of a wide range of dry and liquid goods and also had diversified into adjacent fields of ship agency, stevedoring, and inland shipping. An early event causing the backgrounds of the founders of the twin companies to differ might explain the variety in outcomes.

On 8 and 9 January 1818, immediately after the Dutch King William I had left the business of tea importation to the free trade, two persons in Amsterdam and two counterparts in Rotterdam issued a joint prospectus notifying the trade of the formation of an “Establishment for the storage, preparation for sale and delivery of the Tea by Warehouse Warrants”. These four initiators were all warehouse masters of the former Dutch East Indies Company (abbreviated as VOC) in their respective cities and the handling of tea had taken a special place in their work.

One early event, however, disrupted the continuity with the VOC-practices in Rotterdam. A few days after the founding announcement of the tea-establishment, one of the two intended directors died. Thereupon, his co-founder G. Palesteijn gave up the initiative. On the insistence of some trading houses, the commission agent H.C. Voorhoeve and the Dutch gin manufacturer E.P. de Monchy took over the torch from the two ex-tea warehouse masters and actually founded the business on January 30, 1818, maintaining the initial name. They thus laid the base of a business co-managed and owned by members of the families de Monchy and Voorhoeve/van Rossem for the decades after (in the case of de Monchy-family even until the firm’s merger into Pakhoed in 1967).

An early event in Rotterdam thus opened the way for a commercial initiative in warehousing by entrepreneurs originating from outside the existing business. Timing was crucial in one sense, as Palesteijn soon regretted his initial decision and tried to make a comeback, but was unsuccessful – if only because Pakhuismeesteren monopolized the only

warehouse truly suited for tea storage, that is, the old VOC-establishment. However, this aspect of the story also indicates that the untimely death of a tea specialist did not positively condition the entrance of businessmen with a broader orientation and business connections to other activities; also because the trading houses could have turned to other persons with specialized knowledge of handling tropical goods (e.g. brokers). Moreover, there was no early triggering effect of the broader orientation and connections of the actual founders as Rotterdam Pakhuismeesteren dropped the extension “from the tea” only around 1850, when it started with the warehousing of rice, followed by diversification in other commodities and – after 1945 – also in businesses adjacent to warehousing. Vital was that members of the de Monchy-family got involved in petroleum trade. This gave the Rotterdam Pakhuismeesteren a crucial leg-up in their early monopolization of petroleum storage in the port from 1862 on. Tank storage became the major and consistently lucrative source of income of the company, which had to cope with only very few competitors in this field, even more after the “oil boom” beginning in the 1950s that made Rotterdam the largest port of the world from 1962 on.

Further putting in perspective the initial importance of the difference in founder identity is that the operators of the Amsterdam company earlier than their Rotterdam counterparts diversified their activities. This adventure by a parallel Pakhuismeesteren-company in coffee warehousing was however ended after thirty years due to a sequence of events.<sup>3</sup> Subsequently, the Amsterdam company stuck to tea warehousing until its take-over in 1959.

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<sup>3</sup> In 1824, King William I initiated the founding of the Dutch Trading Company (NHM), which from the Dutch state received a monopoly on commission trade in tropical goods from the Dutch East Indies. Responding to this, in 1828, the Amsterdam Pakhuismeesteren founded a separate warehousing establishment for coffee. In 1854, however, the King’s commissioner at NHM, J.J. Rochussen, started to urge for a transfer of the NHM-coffee to the Amsterdam Royal Bonded Warehouse. The latter institution sought compensation for a significant loss of work it had incurred due to a reduction of import tariffs. Rochussen wanted to avoid that the then King should have to compensate the Bonded Warehouse for financial losses as William I had promised to do at its founding in 1827. After many squabbles, the Amsterdam Pakhuismeesteren finally lost the coffee work, although not to the Bonded Warehouse, but to the so-called *vemen* (see below). It closed the coffee business in 1858.

## **Case 2: a restrictive granting of permanent berths in the port of Rotterdam**

In November 1883, the Rotterdam city council adopted a bye-law that prescribed that only liner services could apply for a permanent berth in the port (van Driel and Bogenrieder, 2009). This seemed an unduly limited policy for a port that for an increasingly large part thrived on cargo that was shipped to and from port in a non-scheduled way. Specific requests for a permanent berth by applicants led to extensive debates in the city council about the rationality of the bye-law in 1891 and 1894/1895, but only in 1900, the city executive decided to liberate the berth policy. From then on, all types of firms could request a permanent berth. The memory of an earlier “abuse” of berths by a stand alone middleman seems to have retarded this liberalization.

One central aim of the 1883-bye law was to prevent “trading in berths” by independent middlemen. Fear for what was seen as an abuse of berths was fuelled by a series of events connected to the *Rotterdamsche Handelsvereniging* (Rotterdam Trade Company; RHV). In December 1872, RHV got a concession to develop and operate a large part of the new modern port installations at Feijenoord at the south bank of the river Meuse. After investing in the New Waterway, the crucial artificial new water connection between Rotterdam and the North Sea (opened in 1872), the municipality was not prepared to further raise taxes to finance the building of a first modern port complex. The city council agreed upon the concession only after fierce public discussions, both during the council meetings and in the local press. There was a widespread fear of a private monopoly on what was seen as essentially a public facility. On May 14, 1879, shortly before the building of the complex was completed, the city became painfully aware of its dependence on a private company. On this day, RHV-initiator and director, Lodewijk Pincoffs, fled to the United States, never to return. He had committed fraud, among other things, by transferring RHV’s financial assets to his other main business venture, the African Trade Company, that had become in big trouble.

The Pincoffs-affair shocked the city. The RHV was saved from bankruptcy and given in the hands of new, trusted managers. However, they repeatedly tried to introduce extra fees for ships entering the RHV-operated basins, on top of the municipal harbour fees, which further raised fear of private abuse of a monopoly on Rotterdam’s only modern

port installations. Subsequently, in 1882, the city took over the RHV-installations. All quay terrains were now again in municipal possession, triggering the city to formulate a general rule for the allocation of permanent berths to users. The traumatic RHV-events committed the municipality to a creed of “no trading in berths” that underlay the restrictive bye-law on granting permanent berths adopted in 1883. Still, the early events more intensified than shaped the commitment to the restrictive bye-law. The fundamental positive conviction that underlay the quayage bye-law, that is, that facilitating liner services was crucial for the development of the port and that permanent berths were a basic requirement for operating such a service, were not derived from specific incidents. In the competing Belgium port of Antwerp for instance - where in 1872 a slim majority of council declined an offer of a private party to take over all port installations, fearing a monopoly, but also because it considered the bid not high enough - the municipality never implemented a quayage fee, but initially gave preference in the use of berths to liner services too (Devos, 2003).

### **Case 3: the Dutch *vemen* change-over to a limited company form a century earlier than the Antwerp nations**

The organizational history of the Amsterdam-originated category of firms called *vemen* shows an interesting contrast with that of their Antwerp counterparts, called *naties* (nations) (van Driel and Devos, 2007). While the *vemen* got rid of their age-old cooperative structure in the closing decades of the nineteenth century, the nations stuck to the old approach until deep into the twentieth century. A challenge of a newcomer in the Amsterdam port’s warehousing business triggered the first step of a *veem* on the path of becoming a public limited company, while a similar challenge neglected to do so in Antwerp. The difference lay both in the sequences of events and their nature and the prevailing conditions – in Antwerp the preferences of the local politico-economic elite neutralized the challenge for the incumbent nations.

The opening of the North Sea Channel in 1876 boosted Amsterdam port traffic. In 1877, the city began to build the Handelskade, a trade wharf that could be reached directly from the North Sea Channel and had a direct rail connection with the hinterland. An unprecedented large warehouse was built on behalf of one of the first lessees at the

Handelskade, incorporated as N.V. Handelskade in 1883 (N.V. is the abbreviation for the Dutch legal form of a limited company). This new venture posed a considerable threat to the existing Amsterdam warehousing companies with small premises not located at deep water, called *vemen*. The latter descended from weigh house-porters' cooperatives originating from around 1600 and – although they had adopted the form of a partnership in the 1850s and 1860s – stuck to an egalitarian management and ownership. The *vemen*, lacking significant financial reserves, were reluctant to invest in large waterfront warehouses, the prospects of which they considered as very insecure. A newly appointed partner replacing a retiring one of the leading *veem* Blaauwhoedenveem, Guillaume la Bastide, urged the firm to take action from 1883 onwards. La Bastide was an outsider to the warehousing business: he had been deputy manager of a leading Amsterdam shipping agency for twenty-two years. He jumped to the occasion, when N.V. Handelskade was encountering significant setbacks as a result of the sugar crisis, which caused a serious dip in the Dutch East Indies' trade in 1884. At the start of the following year, N.V. Handelskade's main customer, a liner shipping company was forced to take its fleet out of service. N.V. Handelskade, which had also experienced the death and the retreat respectively of two of its three directors in the second half of 1884, sought a partner to compensate for the loss of income and management capacity, and Blaauwhoedenveem presented itself as an option. The *veem*, on the instigation of la Bastide, took over the management of the Handelskade business in 1885 and was given 75 percent of the profits. The initial agreement with N.V. Handelskade triggered Blaauwhoedenveem's transformation in 1886 from a partnership firm into a limited-liability company, with equal shares for all existing partners. It took la Bastide a considerable effort to convince all his fellow partners to take this step. The move to the waterfront did not in itself force the *veem* members to incorporate their business, as the members could have raised the funds they needed to purchase a stake in N.V. Handelskade on their own. La Bastide, however, expected that financing future expansion would be beyond their means. Most pressing was probably that a close cooperation between a limited company and a partnership firm was legally problematic: any exit of members from a partnership firm would force the two parties to draw up a new contract. Still, Blaauwhoedenveem could have kept its age-old egalitarian set-up in tact by simply absorbing N.V. Handelskade



(which it actually did in 1891), while the simultaneously implemented split of the group of ten partners into managers and deputy-managers was not self-evident either.

Other *vemen* soon imitated Blaauwhoedenveem in changing over to a non-public limited company (like they had done in the transition from cooperatives to partnership firms). The *vemen* opted for the limited-company form when the storage business was experiencing a period of substantial growth. They built several new large warehouses, both in Rotterdam and Amsterdam. As a result of shares being issued to finance the growing business volume, the *vemen*'s stock ownership more and more proliferated to outsiders, enlarging the split between management and ownership. Thus, by 1900 the *vemen* had lost their cooperative nature.

The importance of a certain sequence of events is illustrated by a comparison with the evolution of legal forms of the *vemen*'s look-a-likes, the Antwerp nations.<sup>4</sup> Unlike the *vemen*, they stuck to their cooperative approach deep into the twentieth century. In Antwerp it was the abolition of the Scheldt toll in 1863 which boosted port traffic and fostered new initiatives at the deep waterfront. In 1864 and 1865, three related limited companies were founded: a bank, a trading company, and a dock and warehousing company. The latter company, the Compagnie des Docks-entrepôts et Magasins d'Anvers, established in 1865, acquired the three Antwerp warehouses considered to be the best in town, including the large Royal Bonded Warehouse. A joint action by twenty nations to boycott the new company was, however, supported by the traders, who feared—quite understandably—the creation of a monopoly and who did not like the fact that the Compagnie had been established by outsiders. Pressed by the chamber of commerce, the Compagnie agreed that the nations could continue to work directly for their principals in the Royal Bonded Warehouse and promised that their members' positions would not be downgraded under the new venture. The nations in Antwerp thus came under considerably less external pressure to change their existing business approach than the *vemen*. The city of Antwerp maintained virtual control of the port superstructure, an arrangement that in practice stymied the emergence of large-scale private establishments. The Antwerp nations, many of them counting tens of members,

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<sup>4</sup> It should be noted that unlike the *vemen*, the Antwerp nations were not primarily focussed on warehousing, but covered a broad field of transport activities and other auxiliary services in and around the port.

maintained egalitarian ownership until deep into the twentieth century, when the leading ones finally changed over to a limited company form and created a separation of ownership and control.

#### **Case 4: the formation of a unusually broad-based grain handling firm in Rotterdam**

In February 1908, in Rotterdam a grain handling firm called Graan Elevator Maatschappij (GEM) was founded in which all major economic parties (except overseas sellers) having a stake in grain handling participated (van Driel and Schot, 2005). This uncommonly broad-based venture maintained a quasi-monopolistic position in Rotterdam grain stevedoring until the 1980s. The founding of GEM in its particular shape was the outcome of a complicated sequence of events spanning several years. For comparison, we also discuss the founding of an another broad-based joint-venture in Rotterdam container handling with a long subsequent dominance of the sector.

Central to the founding of the GEM was the introduction of a new grain handling technique at the beginning of the twentieth century. It concerned the floating pneumatic grain elevator, in fact a grain sucker which - working like a vacuum cleaner - transferred the grain with high speed from the sea-going vessel into a barge, virtually uninterrupted by weighing the grain in the elevator tower. In August 1901, a delegation of German grain millers visited the port of Rotterdam propagating the use of this new machine (in fact, the leader of the delegation acted primarily in his capacity as a supervisory director of the German elevator manufacturer Luther AG, where moreover also his son worked as an engineer). The first pneumatic elevators had a maximum capacity of 150 tons per hour, compared to a speed of 10 tons per hour per shift of workers when the grain was manually handled in bags and baskets. Later it was calculated that the reduction in labour input needed was no less than 94%.

To explain the initial lack of enthusiasm for the new machine of the majority of Rotterdam entrepreneurs involved in grain handling, we have to go back as far as 1882. In that year, a primitive bucket elevator introduced to speed-up grain handling met a sad

fate as the workers set it on fire.<sup>5</sup> The memory of this event continued to haunt the Rotterdam entrepreneurs. In 1896, the Holland-America Line saw itself forced to introduce a bucket elevator for grain handling, since otherwise the time spent on loading and unloading the larger liner ship it had brought into service would become too long. But the management took care that the labour saving device did not imply loss of income or work for the dock workers involved. A Rotterdam chamber of commerce-committee asked to comment on the new machine propagated in September 1901 still referred to the 1882-incident (without specifying time and exact nature). One of the reasons for the cautious decision in April 1904 of the (first) Elevator Company (founded in March 1904) to order only two elevators was exactly this fear for renewed labour unrest (the idea was that the two elevators would only handle 10% of the annual grain flow, which was so rapidly increasing that no employment at all would be lost due to the new technique). This early event-inspired fear resonated with the defensive attitude of the elevator company's initiator Joris Smalt. He was mainly concerned that the *factor* company for which he acted as delegated supervisory director, Het "Nederlandsche Veem", would lose its existing cargo superintendent, forwarding and storage activities to an elevator company; his firm had big problems to keep its head above the water at all. Smalt had managed to convince only one major group of stakeholders, the leading Rotterdam ship agents, to participate in his new venture, that was also supported by a range of other firms of a various kind.

When the first elevators were taken into use in July 1905, a critical, probably isolated incident then gave the process an unforeseen dynamic. In August 1905, an unexplainable malfunctioning of the automatic weighing machine of the first elevator brought the operations to a standstill for seven weeks (the weighing machine were replaced by manually-operated ones that still could reach the same high speed by weighing the grain by the tons and not in the customary way by the weighers per bag of around 80 kilos). The grain weighers used this time to organize themselves and went on strike on November 4, when the loading with the elevators was resumed. The weighers were the elite among the dockworkers and they could boast a long tradition of working in so-called

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<sup>5</sup> The story is obscure, partly because possibly two different parties put into service their own bucket elevator in 1882/1883. The only thing we can be sure of is that some workers in 1882 (or 1883) committed a deed of violence that scared the port entrepreneurs to death.

corporations. As the overwhelming majority of grain handling still went through the weighers' hands, their strike brought their principals, the German importers, in a difficult position. As of the first of March 1906, the German grain tariffs would be raised considerably. The German importers were therefore in a hurry to build up a stock of grain before winter fell and the navigability of the Rhine would deteriorate. On November 18, 1905, they bought off the strike by promising the weighers not to accept grain from the elevators until May 1906.

The failing of the automated weighing machine further confirmed the importers' distrust in this new technique. More generally, not related to the specific incident, the importers (including the Dutch ones) felt that they would lose control on the grain handling with the new equipment, a handling operation that now went very fast, apparently without much time for careful weighing and sampling the grain. Paradoxically, grain importers frequently preferred a *slow* unloading, in order to save on storage costs when they had not resold the grain yet (when they preferred fast unloading, hiring extra workers provided the flexibility needed). Finally, also an unspecified sentiment fostered the German importers' resistance to the elevator in particular – they did not like to be told by some local Rotterdam party how to receive their grain in the port (that is, at high speed in loose form rather than more slowly in bags).

This last preference changed in nature due to the follow-up of the Rotterdam elevator story. At the end of 1905, given the lack of cooperation of the importers, the Elevator Company suspended operations. Before really resuming them, in April 1907, the elevator company lured nine of the main Rotterdam grain importers and the Rotterdam stevedores to accept unloading through the machines, by offering them generous financial conditions. The elevator company had learned from the contra-productive effect of its gradual introduction of the elevators. In May 1907, it began to unload grain ships both by two elevators and – for the time being - with traditional equipment. The dockers answered the now full-blown offensive with violent actions against the “scabs” employed by the elevator company, actions that escalated to such extent that the Dutch army was called to restore order on July 5, 1907. This culmination of violent events finally convinced the German importers to give up resistance to the new technique. No longer its economic merits were at stake, but the question of “who is the boss in the port”?

On 23 September 1907, the workers started a general strike, but the weighers did not participate as they had contracted with the importers not to do so. Now that the employers had finally joined forces, the strike did not have any chance of success. It ended after nine weeks and the only thing the dockers got out of it was a pay raise. The importers thought they should be rewarded for supporting the introduction of the elevator, which still supposedly was not in their own interest. In February 1908, a new company was founded, the Graan Elevator Maatschappij (GEM), which replaced the old elevator company. In GEM equal shares were given to two groups: the ship agents, shipping companies, and stevedores (group A), and the importers (Dutch and German), forwarders, and *factors* (group B). Each group received fifty per cent of the shares and also provided an equal number of supervisory directors. Broad-based like this, the elevator company easily survived attacks on its quasi-monopoly position (in particular between 1908 and 1917); in 1913 it handled no less than 96% of all Rotterdam grain. Only in the 1980s, an outsider using a technique new for grain unloading in Rotterdam (floating grab cranes) undermined the GEM's long-standing dominance.

A comparison with a later, largely similar joint-venture (although less uncommonly broad-based) illustrates the specific role of (sequences of) events in the GEM case. The 1965-founded Rotterdam container stevedoring firm ECT became the world's largest one of his kind for years and dominated Rotterdam container handling until recently, although not so absolute as the GEM had done (van Driel and de Goey, 2000). Similar to the GEM, ECT received repeated criticisms on its dominant position, but – among other things - countered this critique by claiming to provide their customer services with up-to-date equipment, from the late 1970s playing a forerunner role in cargo handling innovations (although ECT's financial results were much less rosy than the GEM's ones). Like in the GEM-case, gaining a dominant position early on and maintaining this position for decades was not self-evident. In competing Antwerp for instance, the large stevedores all went their separate ways in container handling and a significant consolidation only occurred in early 2000s. Initial conditions were partly similar to those in early 20<sup>th</sup> century grain handling. The container was a new transport and handling technique with prospects that were highly uncertain, while the incumbent companies had limited funds available. These circumstances drew them together, just like they had done with the

shareholders of the first elevator company. However, in the ECT case, the interaction of external events, initial choices and initial conditions was less undetermined. The crucial player was the local port authority that preferred a consolidation of activities to prevent devastating competition and underutilization of the city’s precious quay space. Port authority director Frans Posthuma used the city’s monopoly on quay terrains to force all leading stevedores into one big joint-venture (his Antwerp counterpart was probably more concerned about maintaining a sufficient level of internal competition, see Stevens, 1997, p. 189). Posthuma’s intervention was well-timed (see table 1). It reflected a conscious choice of a central actor supported by strong bargaining position and not a “random” event imposing itself on the leaders of the stevedoring firms.

*Table 1 – Events leading to a broad-based joint venture in Rotterdam container handling*

October 1963	in a meeting with the director of the Rotterdam port authority, the US shipping company Sea-Land announces launch transatlantic container service in 1966
October 1965	two large Rotterdam stevedoring firms and Dutch Railways announce the founding of a joint-venture for container handling, called ECT, to accommodate the Sealand service
February 1966	the three other leading stevedoring firms form a “counter club” for cooperation in container handling
March 1966	the Rotterdam port authority begins to press for an amalgamation of both initiatives
April 1966	extension of ECT with the three other large stevedoring companies

### **Case 5: sectoral approach to avoid forced layoffs in Rotterdam break-bulk handling**

The ongoing modernization of the shape of general cargo by containers and other unit loads created a serious reduction of employment in break-bulk stevedoring in the port of Rotterdam in the 1980s. The leading union successfully pressed the employers to solve the unemployment problem at the sector level, resulting in a series of agreements avoiding forced layoffs (for this episode, see van Driel, 1988). Some fifteen years earlier, in 1967, the first steps in the containerization process were one of the main causes of the labour cuts announced by several firms and the Rotterdam labour pool (Hendriks, 1973). At this occasion, the unions were not able to avoid forced lay-offs of hundreds of workers – they limited themselves to softening the pain by requiring financial compensation for the workers involved.

What was the difference between the two periods? Union membership grade was already high in 1967. In general, the dock workers were strike-prone. A crucial difference concerned the relations between the union officials and the employers' representatives. Although the unions supported a long (by now famous) strike in 1970 resulting in significant pay increase, as a rule they not seek an open confrontation with the employers in the 1960s and 1970s. In 1972, a new chairman of the employers association SVZ made an end to the informal agreements his predecessor had tended to make with the leading union's main official (Hendriks, 1973, 123). Still, as late as 1979, critical union members accused the negotiator of leading union FNV of to be in league with the employers, as he refused to renegotiate the wage increase he had agreed upon with SVZ; a wage increase that was insufficient in the eyes of the workers. Subsequently, in August, a wild cat strike broke out, led by a committee of four "communists". The embittered strike lasted more than three weeks; in the end the employers did only a small financial concession. The announced aim was to get a higher pay increase, but in fact the strike was emphatically also a protest against the transport union of the leading FNV federation.

The strike of 1979 was a crucial event that triggered a much more militant stance of the leading union compared to the late 1960s. After the strike, several officials of the FNV transport unions (hereafter FNV) were replaced by younger and much more militant ones. The latter concluded that a split between the union and its cadre shown up during the strike should never again occur. The ongoing containerization and other ways of

unification of break-bulk cargo continued to reduce employment in the port. When the once leading stevedoring company Müller-Thomsen announced lay-offs of several hundreds of workers in April 1980, the FNV officials saw a chance to win back the hearts of the unions members. FNV formulated a policy of “no forced lay-offs in the port”. The union acknowledged the labour saving effects of the modernization of the shape wherein break-bulk cargo was handled. As a socially responsible solution it not only demanded measures like early retirement, but also posed that other break-bulk firms or other sectors in the port (including specialized container terminals) could absorb the surplus of labour power. In other words, what FNV demanded was a sectoral approach.

In January 1981, FNV and Müller-Thomsen agreed upon a personnel reduction of 351 workers under the condition that the company supplemented the unemployment benefits of those of 57,5 years and older until they reached the retirement age of 65 (a so-called 57<sup>+</sup>-arrangement) and paid a premium to those that left voluntarily. Then, on November 20, 1981, Müller-Thomsen announced new loss of work, due to a forthcoming transfer of the so-called Woermann contract to another Rotterdam stevedoring company, Quick Dispatch (QD). One of QD's sister companies, Nedlloyd Lines, participated in the Woermann shipping consortium and it was usual that shipping consortia granted the handling of the ships to the “own” stevedoring companies in the home ports of its members (the transfer was in fact long overdue). On November 23, the Müller-Thomsen workers took a Nedlloyd ship “in hostage” (symbolically locking it to the quay wall), while the stevedore company's management demanded that QD took over 200 of its workers. In a meeting on December 3, FNV finally succeeded to force the port conglomerates to assume collective responsibility for the break-bulk employment problems. These conglomerates, including Internatio-Müller (parent company of Müller-Thomsen as well as stakeholder in Rotterdam bulk handling firms and involved in ship agency) and Nedlloyd Group (owner of QD, Nedlloyd Lines and other transport companies), took this responsibility mainly out of fear of the negative publicity, that could also hurt their other activities. The employers and unions agreed to derive the estimated labour need at the sector level from the expected development of the cargo flows, disaggregated into its different shapes and concomitant labour intensity (containers, pallets, crates, bales, etcetera). This theoretical approach suited the unions'



purposes, since the speed of reducing employment was thus linked to exogenous developments and not left to the discretion of individual firms, which normally based layoff-decisions also upon financial considerations. On March 27, 1982, the parties agreed to avoid forced lay-offs by a voluntary port-wide 57<sup>+</sup>-arrangement, premiums stimulating voluntary leave, a job vacancy department to transfer break-bulk workers to other port sectors and a pool for retraining workers. The Rotterdam port authority had mediated in the negotiations, and the agreement was supported by the Ministry of Social Affairs.

Several critical incidents thus triggered the initial acceptance by the employers of a sectoral solution of the problems created by the modernization of cargo handling. They resonated with the preferences of both the unions (the wish to regain confidence of the members after the 1979-strike with a consistent “no forced lay-offs” stance) and of the employers and the government (prevent or at least minimize labour unrest in the port). The employers, however, gave up their cherished individual autonomy in deciding upon labour cuts (against reasonable costs). Some events stand out more than others. The 1979-strike was more singularly important than the respective announcements of job losses, predictably leading to labour unrest, that mainly flowed from an expected ongoing modernization of break-bulk handling (only the exact speed of this modernization and cyclical movements in the cargo handling volume were hard to predict). Even the announced shift of a stevedoring contract from one company to another that initiated the sectoral approach late 1981 was to be expected sooner or later given the customary approach in these matters.

Despite several companies coming into serious financial problems, the sectoral approach of no forced lay-offs survived in the following years. Table 2 table shows how the port employers became further entangled in this pattern. The method of comparing the existing workforce and the labour need at the sector level originating from the first round of talks between December 1981 and March 1982 was transformed into the criterion for legitimizing forced layoffs or not during a second round in May 1983, where after the calculations to anyone’s surprise showed a lack of workers rather than a surplus in 1984. However, the table also illustrates that this developing logic did not dominate the story, due to the interventions by the Minister of Social Affairs, fostered by a public

*Table 2 – Sequences of events after the first sectoral agreement on avoiding forced lay-offs in the Rotterdam break-bulk sector*

March, 1983	new forecasts show higher than expected surpluses of workers
Early May 1983	the port employers' association SVZ publicly proposes 800 forced lay-offs and a shift of 1300 workers to the labour pool SVZ; the Minister of Social Affairs prohibits forced lay-offs for the time being.
May 31, 1983	agreement on reduction of working time with 10% and a 50/50-division of workers across companies and the labour pool; forced lay-offs are permitted in case of labour surpluses calculated at half-yearly reference dates and when bankruptcy is the only alternative
July 2, 1984	Rotterdam Terminal announces the loss of 127 jobs as a condition for a life-saving merger with Felshafen
Aug. 16, 1984	reference date calculation show a <i>lack</i> of 245 workers on sector level per July 1, 1984
Aug. 27, 1984:	FNV starts surprise strikes to force the employers to take-over redundant workers from Rotterdam Terminal
Sept. 21, 1984	agreement for new 57 <sup>+</sup> -regulation and transfer Rotterdam Terminal-workers to the labour pool and the installation of a new committee
Jan 1, 1985	reference date calculation shows surplus of 36 workers that is expected to rise further, no employers' proposals for forced lay-offs
June 29, 1985:	Van der Louw-agreement: no forced lay-offs until 1990 assuming no structural surpluses given the expected development of the cargo volume, special pool for victims of a bankruptcy partly financed by the employers
Jan 1, 1987	reference date calculation shows no surplus of workers
Jan 12, 1987	five companies and the labour pool announce lay-offs of 350 workers, citing sustained heavy financial losses as reason
Jan 19, 1987	start of intermittent "surprise strikes" by FNV
May 7, 1987	enterprise court confirms that the employers should include the reference date calculations in their lay-off proposals
June, 1987:	Minister of Social Affairs announces reduction of his contribution to the bankruptcy-pool
July 6, 1987	"Kiss of Delft"-agreement, new 56 <sup>+</sup> -arrangement to prevent forced lay-offs, partly paid by a 1%-wage cut for the remaining workers

opinion that was on the hand of the unions in the Rotterdam Terminal-affair in 1984 (although lay-offs were permitted according to the letter of the prevailing agreement), but was more in sympathy with the employers in 1987 (although financial losses could not be an argument for lay-offs according to the agreement). In final analysis, these outside influences as well as the preference of the employers to avoid labour unrest were more decisive than contemporary events that were part of a sequence started earlier.

## Discussion and conclusion

*Table 3 – Events, initial choices and outcome in the five cases*

<b>case</b>	<b>early events/sequences</b>	<b>initial choice</b>	<b>Outcome</b>
1	death of one of the initial founders (Jan. 1818)	members of De Monchy and Voorhoeve family found the new tea establishment (Jan. 30, 1818)	diversified warehousing and port firm
2	dubious actions of firm monopolizing modern port installations in Rotterdam (1879-1881)	municipality acquires the port installations (1882)	Bye-law granting permanent berths only to liner services
3	opening North Sea Channel - loss of principal customer of new Amsterdam firm challenging incumbent warehousing firms (1876-1885)	leading incumbent firm takes 75%-stake in the newcomer (1885)	warehousing firms transformed into limited companies with separation of ownership and control
4	arson of bucket elevator - visit German grain millers promoting the grain elevator (1882-1901)	initiators start elevator company with only two elevators (April 1904)	long-term dominance of Rotterdam grain handling by one broad based firm
5	wildcat port strike – workers’ symbolic action by taking a ship in hostage (Aug. 1979- Dec. 1981)	employers accept sectoral approach to employment problem (Dec. 1981)	sectoral policy no forced lay-offs

In summary, table 3 classifies “early events”, the “initial choice” and the “outcome” in the five cases. The column of events illustrates the difficulty of demarcating the events in time, in particular when several sequences are identifiable. Is the opening of the North Sea Channel a meaningful beginning of the sequence of events leading Dutch warehousing companies to change their legal form (case 3)? Where to start the sequence in the case of Rotterdam grain elevators: with the 1882-arson or with the visit of the German delegation propagating the elevator in August 1901 (case 4)?

Assessing the initial choice is also difficult: where does the path start? In the table, I have defined the initial choice as the first conscious step on what in retrospect can be identified as a path, taken by actors leading the organizations and industries involved. Applying this decision rule however leads to second thoughts. For instance, in case 1, the initial choice, taking by members of the families that would own and manage the firm in the century and a half following, occurred more than thirty years before the firm actually took its first recorded step on the path of diversification. In case 2, the path-defining early choice was the issue of the bye-law of 1883 granting liner services exclusivity in using permanent berths. In this perspective, the subsequent path until 1900 was not much more than a series of (formal) reconfirmations of this policy. In case 3, the central early choice was the leading incumbent warehousing company adopting the legal form of a limited company in 1886, which through several steps finally led to a full separation of ownership and control among these type of firms. In case 4, as initial choices I could also have selected the decisions of the Dutch and German importers (April-July 1907) to give up resistance to the elevator as positively leading to the founding of a new broad-based elevator company. In case 5, I have chosen for the decision of the Rotterdam port employers to start talks with the unions about a sectoral approach of dealing with declining employment in December 1981, because for the employers this was a step into a direction they had strongly wished to avoid. But one could also argue that the initial choice was made earlier by the leading union, when it declared “no forced lay-offs in the port” its central policy after one company announced it would reduce its staff in April 1980.

These examples show that it is not always possible to identify one singular initial choice that sets the path on a certain course at an early stage. The cases thus also reflect

differences in whether and how events resonate with initial conditions. On the basis of the case studies discussed, at least three possibilities can be distinguished:

- I. There is no salient resonance, either because prevailing conditions do not align with the early events or because the conditions do not enforce a path in a certain direction as triggered by an early event. This makes the path highly unpredictable.
- II. There is a salient resonance, because one or more dominant conditions point in the same direction, making the global direction of a certain path triggered by one of more events highly probable.
- III. There is a resonance of the event(s) with one or more elements from a mix of initial conditions, while there is no fit with other important conditions, making this resonance moderately predictable.

According to an interpretation that path dependence implies low sensitivity to initial conditions (Vergne and Durand, 2010), the first category then concerns strong path dependency and the second one a weak version. An example of category I is the untimely death of one of the original initiators of the Rotterdam tea warehousing company which – in retrospect - opened the way for a broader oriented venture, but where the existing pool of other potential entrepreneurs in this field did not necessarily induced diversification (case 1). The challenge of the incumbent Antwerp nations by a new venture that was neutralized by the protection provided by the local politico-economic elite (comparison case 3) also falls in this category. An illustrative case of category II is the common fear of a private monopoly fuelled by the dubious actions of the first modern Rotterdam port company. This triggered the city executive to deny parties other than liner shipping companies permanent berths for nearly two decades, but this was in line with prevailing common sense and the belief that shipping lines were the prime customers of the port (case 2). Also the Rotterdam port authority demanding the consolidation of container handling activities in one company had a predictable effect,

given this actor's strong negotiating position and the risk averse inclination of the stevedoring firms involved (comparison case 4).

The third category is probably the most interesting from a path dependence perspective. In this case, sequences of events are likely to significantly influence the outcome in an undetermined, but not random way. In the case of the change-over to the limited company form of the Dutch warehousing companies (case 3), the unexpected early setbacks for a challenger made a combination with a risk averse incumbent quite expectable. However, the owner-managers of the incumbent firm had a strong commitment to the age-old egalitarian set-up of their business and adopting the legal form of their new business partner was not strictly necessary. It was a forward-looking manager, who had entered the firm only a couple of years before, who actually urged his colleagues to adopt the limited company form, a vital step on the path followed by several warehouse companies, that were forced to invest heavily in new facilities, culminating in a full separation of ownership and control.

The grain elevator case is another, prime example of category III (case 4). The memory of the 1882-arson first contributed to the cautious approach followed by the – risk-averse - initiators of the elevator company. Subsequently, the unexpected malfunctioning of the first grain elevator's weighing machine, through a resulting sequence of events caused the failure of the elevator company's gradual approach, which in turn led to a more offensive policy, which was then met by increasingly violent actions by the workers, which subsequently induced the importers to give up their resistance to the new machine and – eventually - join the new very broad-based elevator company. The violent outcome led these vital entrepreneurial actors to shift priority to their socio-political preferences (employers should remain in charge in the port) to the detriment of their economic ones (keeping control and flexibility in unloading operations).

Undetermined was also the resonance of events with prevailing conditions in the initiation of a sectoral approach in dealing with declining employment in Rotterdam break-bulk handling in the 1980s (case 5). Unlike in the second half of the 1960s, under further similar circumstances, the crucial event of the wildcat-strike of 1979 made the leading union to follow a hard-line approach in employment matters. Employers were on the one hand keen to maintain their individual autonomy in dealing with labour surpluses,

but, on the other hand, their fear for (prolonged) labour consistently fostered their openness for compromises on the sector level. A relatively minor event of the workers symbolically taking a ship in hostage triggered them to give up their resistance to a sectoral approach. This approach gained its own momentum when the agreed problem-assessing method generated the unexpected result of showing no labour surpluses at several points of time, without however strongly determining the path: the preference of both employers and the government to avoid (sustained) labour unrest had a strong autonomous influence on the series of agreements that saved the workers from involuntary unemployment.

These summaries of the cases 3, 4, and 5 also contain meaningful sequences of events that occurred shortly *after* the initial choice as defined in table 3, but were still partially related to the earlier events, including the initial choice. From this observation I draw the conclusion that one should avoid a forced search for one decisive initial choice that sets everything in motion (although a case for such a “magic moment” could very well be made in some instances). An approach focussing on early (sequences of) events in general (including choices) serves the study of path dependence better. Acknowledging that a process is never fully path-dependent, the main challenge is to assess whether and how events align with initial conditions in shaping the path. A comparative approach seems particularly suited for such an endeavour. The case studies show that sometimes critical events truly trigger organizations onto a certain path, whilst in other instances (sequences of) events merely influence the typical traits of and the commitment to a path in a global direction which the organization, given the initial conditions, had probably taken anyhow.

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