



Journal of Management History

The social shaping of the early business schools in The Netherlands: Professions and the power of abstraction

Peter van Baalen Luchien Karsten

Article information:

To cite this document:

Peter van Baalen Luchien Karsten, (2010), "The social shaping of the early business schools in The Netherlands", Journal of Management History, Vol. 16 Iss 2 pp. 153 - 173

Permanent link to this document:

<http://dx.doi.org/10.1108/17511341011030084>

Downloaded on: 02 April 2015, At: 07:57 (PT)

References: this document contains references to 58 other documents.

To copy this document: permissions@emeraldinsight.com

The fulltext of this document has been downloaded 458 times since 2010*

Access to this document was granted through an Emerald subscription provided by 592038 []

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

*Related content and download information correct at time of download.



The social shaping of the early business schools in The Netherlands

The social
shaping of
business schools

Professions and the power of abstraction

153

Peter van Baalen

*Rotterdam School of Management, Erasmus University Rotterdam, Rotterdam,
The Netherlands, and*

Luchien Karsten

State University Groningen, Groningen, The Netherlands

Abstract

Purpose – This paper aims to provide an alternative explanation for the rise of modern management schools at the turn of the twentieth century. It is to be argued that these schools were not just responses of the higher education system to the demand of industrializing companies for a new class of professional managers, like Chandler suggests.

Design/methodology/approach – The historical-actor approach is applied to explain the rise of academic management schools, prior to the Second World War. Data were collected from the archives of different management schools and professional organizations of the engineers and accountants.

Findings – To legitimize their position in the higher education system, abstraction appeared to be the dominant strategy of the professions. By abstraction they could distinguish themselves from the lay public and other professional groups in the domain of management. At the moment the new professions had a foot in the higher education system the engineers and the accountants contested for the new management domain. Abstraction appeared also the successful strategy of the accountants to distinguish themselves from the engineers and to establish a sound base for the development of the Dutch variant of business economics.

Research limitations/implications – The paper presents a full account of the Dutch situation but the findings cannot be generalized to other countries. More comparative research is needed. The rise of management schools is mostly explained as an educational response to an economic demand.

Practical implications – The history of the Dutch business schools may provide researchers and administrators of universities insight into the dynamics of disciplines and into setting up professional schools.

Originality/value – This research is based on original documents from the archives of schools and professional organizations. The main contribution of the paper is that it shows how emancipatory and social status motives mediated between the demand and supply side.

Keywords Business schools, Management history, Professional education, Higher education, The Netherlands

Paper type Research paper

Introduction

One of the most interesting phenomena in the recent history of university systems is the rise of professional schools for management. Their alliances with the commercial world, their lack of a coherent body of knowledge and their problematic balancing between science and practice have elicited waves of criticism in the course of twentieth century (Hugstad, 1983; Cheit, 1985). Some authors even argue that business and management are illegitimate disciplines with a ruling philosophy, which are anathema



to the independent academic tradition of the university (see Macfarlane, 1955). In spite of this criticism business and management has become one of the most popular studies within US and European university systems.

In our opinion the origins of the paradoxical business school history have not been explained adequately yet. In general, two different types of explanations can be found in the literature. The first is the so-called functionalist or culture-free approach, which assumes that the demand for professional managers from the corporate world evoked an inevitable response from national systems of higher education to found business schools. The most prominent example here is Chandler's theory on the emergence of managerial hierarchies. He views the rise of business schools at the turn of the twentieth century as being a part of a process of professionalization of management within the new emerging multiunit business enterprises (Chandler, 1977, p. 466). US business schools were set up as a response to "the expansion in the size and complexities of managerial hierarchies" at that time.

Some authors have criticized this functionalist view on the relation between academic management education and economic development (Mosson, 1965; Levine and Kawada, 1980; Handy *et al.*, 1989; Amdam, 1996). Locke (1989) has critiqued this functionalist approach by pointing at the great differences between several European management education systems caused by the differences in university traditions ('heritages'). In his view national educational heritages that are formed in the course of the nineteenth century explain the differences between countries in national management education systems.

In this paper we will alternatively examine the rise of the first (Dutch) academic business schools at the turn of the twentieth century from Abbott's professional systems model. Our main argument is that the rise of business schools (its form and its educational content) cannot be understood by its functions (e.g. creating a class of professional managers) or educational heritages but should primarily be explained by the motives of the actors that were involved in the founding and development of these schools: the professions.

The rise of business schools, like other professional schools, confluenced within the broader context of the modernization of higher education systems since the second half of the nineteenth century. The rise and development of professional schools are viewed pivotal in this modernization process (Jarausch, 1982).

We will argue that the most important strategy for the professions (engineers, accountants) to survive in a "system of professions" is to abstract their professional knowledge. As professional schools are the crucible in the abstraction of professional knowledge, the founding (the social shaping) of these schools is deemed to be essential. In this paper we use the term business schools to refer to any kind of business and management education at university level.

The structure of the paper is as follows. We will first explain some of the basic dynamics of the concepts of the profession and professional schools that will be used in our analysis. We will then give a detailed description of the social shaping of the early Dutch business schools during the first two decades of the twentieth century.

Professions, professional control, and professional schools

What is a profession? There have been numerous attempts to find a generic set of attributes that characterizes the great variety of professions. From a historical

perspective it is important to choose a definition that leaves room for variety and evolution over time. For this reason we follow Abbott's minimal and loose description[1]:

... professions are exclusive occupational groups applying somewhat abstract knowledge to particular cases (Abbott, 1988, p. 8).

In Abbott's view controlling their body of knowledge and skills is the defining criterion for professions that distinguish them from other professions and lay people. Any occupation can obtain licensure or develop ethical codes but only the knowledge system can (re-)define its problems and tasks and can defend them against intruders from other occupational domains or lay people (Abbott, 1988, p. 9). Incomprehensibility to the lay public (and to other professions) is the foundation for professionalism (Layton, 1986, p. 4). The more abstract the profession can develop its knowledge system the harder it becomes for lay public and other professions to intrude the professional domain. Abstraction therefore enables the survival in the competitive system of professions (Abbott, 1988, p. 9). The system perspective is elemental in Abbott's theory. The main characteristics of this system of professions are the jurisdictional disputes – struggles for control over arenas of work (Halpern, 1992). These conflicts result in a variety of settlements, ranging from full control by one profession, to split jurisdiction (segmentation of the profession by type of client), to subordination of one profession by the other (p. 995). Abbott clearly views the profession's cognitive strength as the most important weapon in jurisdictional conflicts. Or as Abbott (1988) puts it: "... knowledge is the currency of competition" (p. 98).

Especially for the new emerging professions, that often lack formal recognition by the state, the knowledge domain is subject to attacks from other older or new emerging professions. One important defense mechanism that will be discussed in this paper is reduction. By reducing a particular complex phenomenon to its essence, a profession can claim this belonging to its 'field of jurisdiction'. Abbott gives the example of child misbehaviour that is reduced to the disease of hyperactivity and therefore can be claimed by the medical profession that it belongs to its field of jurisdiction.

The paradox of abstraction

The power of abstraction (i.e. reduction) not only lies in the defending of a professional knowledge domain but also in its potential for expansion. This is based on the notion that the diffusibility of knowledge increases with the increase of the formalization of knowledge (Boisot, 1998)[2]. It implies that formalized professional knowledge can be applied to a wide variety of jurisdictional fields. Reduction is often a redefinition of another profession's field of jurisdiction to its own. However, as Abbott argues, there are limits to expansion. As the knowledge become too abstract and general, and therefore become disconnected from actual practice, jurisdiction attenuates. Abbott distinguishes two types of abstraction: generalized and specialized formalization. In the former form abstraction emphasizes mere lack of content: the abstract knowledge refers to many subjects interchangeably (e.g. the medical model). The latter form emphasizes positive formalism: abstract knowledge is focussed on a limited subject area (e.g. the physics model). This type of abstraction strengthens jurisdiction, especially when it is accompanied with effective treatment (a set of professional

methods and instruments that mediates between the abstract knowledge and the concrete work of the professional).

The generalized type of extreme abstraction (lacking content) appears to be more problematic. It is hard to have effective treatments for a great variety of work practices. When treatments are disconnected from abstractions, the knowledge base of the profession is simply a set of generalizations without legitimacy. Such a situation makes the field of jurisdiction vulnerable to attacks from competing professions and intrusion from the lay public.

So, in general, the more the professional knowledge is formalized, the better the profession is able to exclude competing professions and the lay public from the field of jurisdiction[3]. On the other hand, the more particular knowledge is “lifted out of its context” (Giddens, 1990), the harder it becomes to find an adequate set of methods and instruments to apply this knowledge into a particular context. This trade-off mechanism in the profession concept is called the “Paradox of Abstraction”, which suggests that professions, in order to control a particular field of jurisdiction, need to find an optimal level of abstraction (Abbott, 1988, p. 105; Halpern, 1992, p. 996).

Within business schools the two before mentioned abstraction strategies are at work. Specialized formalization takes place within the functional fields of management, whereas generalized formalization occurs within the area of general management. Some functional fields within management, like accountancy and operation research, have been, depending on the nature of the professional field, more successful in their abstraction strategy than others (human resource management, strategy, and to an increasing extent information management). All these sub fields attempt, departing from the professional core, to imperialise to the general management domain by reducing management essentially as, e.g. a marketing, human resource management, information processing problem. Therefore, general management is the most problematic and vulnerable area within the management field as it claims an abstract, distinguishable body of knowledge. General management is an unconnected set of formalizations without effective treatments that can mediate between the abstract body of knowledge and the actual work of managers. One of the consequences of the absence of a dominant professional model is that professionals (within the university and practice) feel free to avoid engaging in direct debate and conflict with colleagues from different sub fields. This ad-hocracy precludes a cumulative development of a professional body of knowledge of management.

Structural ambiguity of the professional school

The centrality of abstract knowledge in the profession concept elucidates the important role the professional school plays in the institutionalization of a profession. It has to provide the profession with knowledge that is abstract enough to defend the field of jurisdiction against competing professions and easy access of the lay public. On the other hand it has to take care that the knowledge will not become disconnected from the professional work. This balancing act is characteristic in the history of professional schools. This structural ambiguity of the professional school (Light, 1982, p. 346) becomes even more manifest at the moment these schools are adopted in the university system. As Whitley (1988) has pointed out, in university systems the profession is confronted with two conflicting reputation systems. Within the university reputation system people are expected to work on the advancement of disciplinary knowledge and

are rewarded for their publishing in scientific journals and participation in the scientific community. Within the reputation system of practice, people are judged for their contribution to the solution of practical problems, for their competence to apply their knowledge in effective and efficient ways, and their commitment to organizational goals.

These two reputation systems within the professional school raise the question what should be the mission of the school: to what extent are they to train practitioners and to what extent are they to educate pure disciples of the profession's core knowledge (Light, 1982, p. 346)? This duality leads to a hybrid mission of the professional school.

In most cases, professional schools are not able to deal adequately with this hybrid mission. As Wagner and Wittrock (1991b, p. 333) argue, schools choose either for a scientisation strategy or for a professionalisation strategy. In former strategy the focus is on the development of a closed, formal 'self-referential' discourse. Relevant actors see the academic institutions primarily as research oriented. Education at these institutions should primarily be focussed at preparing young people for scientific careers. In the latter strategy schools aim at the formation of a vocational group to which the training is devoted. Relevant actors view these institutions more as training- and education-oriented.

Professional schools also play another important role: social status transfer. At the end of the nineteenth century the new professions were attracted by the universalistic rhetoric of science, which could legitimate their professional work and guarantee their elite class position in society. As we will discuss later this pursuit for academic recognition coalesced but also conflicted with the demand for highly educated manpower in the modernizing industry.

Business schools without business knowledge

The late nineteenth and early twentieth century saw the rise of numerous academic business schools in the USA and in Europe (Redlich, 1957; Locke, 1989; Engwall, van Baalen, 1995). The interesting thing was that at that moment there was no academic discipline, or abstracted knowledge about management, that could be taught at these schools (Locke, 1989, p. xvii). Young, potential managers were exclusively trained on the job, often in family firms or in firms of friends of the family. In most European countries the universities were still class-based and provided classical training that excluded modern and applied sciences from academe. The typical pedagogical controversy during the greater part of the nineteenth century was not about scientific versus vocational education, but about general versus vocational education.

What was lacking at the time the first European and US business schools were founded were mechanisms to codify knowledge and experiences from managerial practice. Here Locke observes that there was "no matter of scientific nature to teach in a commercial school [...], it still had to be created" (Locke, 1989, p. 71). Common practices like job rotation facilitated the sharing of tacit knowledge but not the creation of an abstract knowledge system. For this reason, the pioneers of scientific management gradually began to stress the importance of codification and abstraction of management knowledge. In his address *The Engineer as an Economist* to the annual meeting of The American Society of Mechanical Engineers in 1886 Henry R. Towne,

one of the pioneers in scientific management, promoted the idea of empirically building up body of knowledge for management:

A vast amount of accumulated experience in the art of workshop management already exists, but there is no record of it available to the world in general, and each old enterprise is managed more or less in its own way, receiving little benefit from the parallel experience of other enterprises [...] according to the ability of its managers, receiving little benefit or aid from all that may have been done previously by other in precisely the same field of work (Towne, 1886).

Since then this call for a common body of knowledge for management has been repeated many times by other pioneers of scientific management. Frederick W. Taylor advocated the development of a “true science”, based on research where “every trifle – there is nothing too small – becomes subject of experiment” (Taylor, 1911). Based on detailed research to the actual work of employees in the workshop, universal laws for management could be developed and “rules of thumb” could be ruled out. In France, Henry Fayol urged his audience that it was “quite time to codify the data furnished by experience and place a body of theory within reach of all” (Fayol, 1987). The ideas of these pre-war pioneers in scientific management breathed the positivist thinking of August Comte who believed that the aim of social science was to unravel universal laws in society, like the laws in natural and physical sciences, by codifying observable social facts.

At the moment that the first US and European business schools were founded, the idea of establishing a professional field of management (a discipline) was quite detached from the ideas of educating a new class of professional managers. When Joseph Wharton offered the trustees of University of Pennsylvania \$100,000 to organize a “School of Finance and Economy”, he deliberately had chosen for the liberal arts college of the university “to create a liberally educated class of leaders for American society” (Sass, 1982, p. 20). Wharton phrased the object of his initiative as follows:

To provide for young men special means of training and of correct instruction in the knowledge and in the arts of modern Finance and Economy, both public and private, in order that, being well informed and free from delusions on these important subjects, they either serve the community skilfully as well as faithfully in offices of trust, or, remaining in private life, may prudently manage their own affairs and aid in maintaining sound financial morality: in short, to establish means for imparting liberal education in all matters concerning Finance and Economy (quoted in Sass, 1982, p. 21).

This quest for liberal education still reflected the old nineteenth century idea of the power of general education and had less to do with the demand for high-quality professional training by a rising class of professional managers (“Visible Hand”), as is suggested by Chandler (1977). Similarly, in The Netherlands, the founding of the first academic Handelshogeschool in 1913 should not primarily be viewed as the beginning of professional business education, but as the end-point of a long lasting struggle of the commercial world to get access to higher education. The first curricula of the Wharton business school were primarily designed to these ends and consisted of courses like history, political economy, government policy etc. Only a few business-oriented courses were adopted. The same holds true for the first German and Dutch business schools which also reflected the typical general-vocational education controversy in

these early years (Locke, 1989; van Baalen, 1995). Redlich concludes that by 1900 a sound foundation for high-class professional training, like in medicine, law, and theology, was lacking (Redlich, 1957, p. 58).

The engineers and management

At the turn of the century Dutch engineers were very interested in developing an abstract knowledge system for management. The industrialization in the late nineteenth century gave rise to the deployment of new technical domains in which engineers started to work. In a very short period of time the jurisdictional field of the engineers expanded to the domains of industry and commerce. It even became the one of the most important occupational domains for the engineers. In 1879 only 6.7 per cent of the engineers were employed in industry. In a very short period of time engineers invaded industrial corporations. In the period 1900-1917 the total number of engineers occupied in industry, shipping, and commerce increased from 312 to 1,043 (from 29.7 to 37.9 per cent as a proportion of the total number of engineers) (Lintsen, 1980, p. 190). The scaling-up and mechanization of production processes in industry were the most important pre-conditions for recruiting engineers for these new engineering domains (Disco and Lintsen, 1983, pp. 343-350).

This expansion of jurisdictional fields of the engineers was endorsed by what Willink (1988) has called the emergence of a civic scientism, a positive attitude in society towards the modern utilitarian sciences, physics, chemistry, economics and commerce. Reform of higher education was part of it. The Higher Education Act of 1876 implied a valediction of the traditional, class-bound education system. Within this climate of change the emancipation of engineering education took place. The Polytechnische School (1864-1904) was, after a struggle enduring almost 30 years finally upgraded and acquired university status in 1904. Like in Germany this upgraded engineering school, from then on called the Technische Hoogeschool, became part of the higher education system but remained, because of the disdain of the traditional universities towards vocationalism, still institutionally separated from the universities.

In spite of their marginal position in the higher education system, the engineers were strongly convinced, on the basis of their academic prestige and their abstract knowledge, that they could rationalize and manage the complex production system in modern corporations. Disco (1974) has described this new professional awareness of the engineers as follows:

Understanding themselves as avatars of a new age, some late nineteenth century and early twentieth century engineers claimed competence [...], over a broad field which was later precipitate into micro-economics, management sciences, and industrial psychology and sociology (Disco, 1974, p. 718).

However when the engineers entered the large industrial corporations the engineering profession got involved in a conflict between the claims of science and business. This conflict pulled different segments within the profession in opposite directions. The engineering school played a pivotal role in this conflict as the school was expected to provide the engineers with the abstract business knowledge to function in high commercial and management positions.

In The Netherlands the first academic business courses, *Bedrijfsleer*, were taught since 1905 at the Technical University of Delft. *Bedrijfsleer* was more or less the Dutch version of the German *Betriebswirtschaftslehre* (BWL). *Bedrijfsleer* was an unrestricted and fragmented field of commercial and industrial courses, which lacked an integrating formal object. It was called a *Kunstleer* (like in Germany) instead of a science: a collection of poorly abstracted, loosely coupled topics from scientific management and book keeping with a strong orientation on practice.

These *Bedrijfsleer* courses were meant to provide industrial engineers with the right business knowledge and techniques to function adequately in higher managerial jobs. Equipped with this business knowledge the engineers would be able to compete with lawyers who dominated management ranks in industrial firms[4]. This argument for emancipation was endorsed by Dutch national government, and even appeared to be the decisive argument for inaugurating an extraordinary chair in *Bedrijfsleer* and bookkeeping in 1908 (held by the accountant J.Ch. Volmer till 1934).

... only with complete knowledge of *Bedrijfsleer* and bookkeeping, the engineer would be able to take the first position in the industrial company, while without this knowledge he has to contend with a second, subordinate role (quoted in Gosselink, 1988, p. 19, translation by PvB and LK).

In the years 1908-1925 different segments of the engineering profession hotly debated whether business courses should be extended in their curricula. The motive behind the expansion of business education was social not educational, for the reformers sought to fight the lawyer's monopoly in management's higher ranks by the extension of business courses in the Technische Hoogeschool study program.

Tables I and II show a rapid diffusion of management engineers in managerial ranks. Table II demonstrates that the perceived lawyer monopoly, that served as one of the main arguments for the engineers to advocate extension of business courses in the engineering curricula appeared to be a myth. Industrialization took off very late (since the 1890s) in The Netherlands but as soon as the engineers entered business companies they outnumbered lawyers in managerial positions.

Later, the engineers used the rise of a large group of technicians, educated at the modernized vocational secondary technical schools into managerial jobs, as another argument to extend the proportion of business studies in the engineering curricula. The Dutch engineers felt they were squeezed between the lawyers at the top management level and technicians at the middle management level. This perceived tweak position gave the engineers a strong impetus to advocate the extension of business courses at the technical university.

Year	Total number of engineers	Engineers in management positions	Percentage
1885	550	42	7.6
1891	786	67	8.5
1900	1,050	93	8.8
1910	2,070	220	10.6
1917	2,754	372	13.5

Source: van der Veen (1918)

Table I.
Number of management engineers as percentage of total number engineers in the period 1885-1919

Public limited companies	Total	1900		Total	1916	
		Engineer manager	Lawyer manager		Engineer manager	Lawyer manager
Oil, lacquer, and paint factories	6	1	–	35	3	1
Textiles factories	24	–	–	61	6	–
Breweries, meal factories	26	1	1	36	4	1
Sugar factories	29	–	4	40	4	8
Dry docks, shipbuilding yards	10	1	–	34	10	1
Chemical, yeast, carbolic acid factories	29	3	1	63	14	3
Machine, paper, glass, etc. factories	62	–	3	196	62	3
Railways, tramcar companies	38	16	6	78	41	4
Gas factories	87	8	–	153	20	–
Total	311	30	15	696	164	21

Source: van der Veen (1918)

Table II.
Number of engineer managers and lawyer managers in big public limited companies in 1900 and 1916

As Merkle (1980, p. 71) points out, there was a strong fascination with higher education from the side of the early scientific management pioneers. Getting their ideas accepted in the “ivory towers” was seen as the establishment of their success. It would provide the Taylorites with certification, which enabled them to formalize and monopolize management skills in industrial corporations (p. 73). Taylor himself explicitly explained that higher education should not aim at liberal education but feed manpower into industry (p. 72).

Technical economics: a new engineering discipline?

The debate about the expansion of business courses in the curricula of the engineering school confronted the profession with an existential dilemma. While the extension of management courses in the engineering curricula would probably ease access to high managerial positions, it would at the same time devalue the academic prestige of the school and of the profession as a whole. The professional model of the engineers was based on technical knowledge. The engineering professors within the school feared that mixing this up with (non-scientific) business and economic knowledge the engineering education would end up in a “neither fish nor fowl”-model.

Initially, the discussion focussed on establishing a new segment within the engineering profession: the commercial engineers. One of the most prominent and influential members of the Dutch engineering community, J. Kraus, former vice-chancellor of the technical university, former minister Waterstaat, president of the Maatschappij van Nijverheid (association of industry), and member of the Senate initiated the public discussion. In his article “The commercial side of the job of the engineer” (1911) he argued that engineers were underrepresented in boards of directors of modern companies. As long as engineers lacked knowledge and insights in economics they were forced to comply with subordinate positions. He therefore advocated setting up a new engineering program at the technical university at Delft,

that prepared students for new type of engineering profession, Commercial Engineers. This idea was supported by many influential Dutch industrialists, represented by the Maatschappij van Nijverheid, and by one of the leading engineering association, the VDI (Vereeniging van Delftsche Ingenieurs). In 1914 the VDI wrote a proposal to set up a four-year program for Commercial Engineers. These ideas were rejected by the senate, by saying that business practices could not be learned at the university, and that reducing theory courses (especially mathematics) would be irresponsible. Moreover the senate argued that the Technische Hoogeschool did not appreciate being goaded by people and institutes from outside the university[5].

After the First World War the issue about the extension of business courses flared up again. It is interesting to note that there was a slight turn of phrase in the discussion. Instead of talking about commercial training of engineers, now the discussion was about the economic training of engineers.

Several developments contributed to this new discourse. The first was the diffusion and popularisation of scientific management ideas after 1915, which gave *Bedrijfsleer* a more substantive body of knowledge. It contributed to the professionalisation of the management roles of the engineers. Moreover, scientific management emphasized the importance of empirical study and observation and could therefore pretend to be real scientific. This empirical tenet of scientific management legitimised the position of *Bedrijfsleer* in academe.

The diffusion of scientific management ideas coincided with the need for standardization of machine requirements, tools, and implements that were imported during the years of the First World War. In 1916 the Maatschappij van Nijverheid and the KIVI, another leading association of the Dutch engineers, founded the Foundation for Normalization. This new engineering discipline soon became institutionalized after the First World War. Within the engineering organization, KIVI, the Division Technology and Economics were founded in 1924, which aimed at the development and application of technical economics. This new engineering science should cover topics like, wage techniques, hygiene and economics of human labour, psychotechnique, employee participation, internal organization, planning and control, balance sheet – and cost pricing analysis, and statistics.

Although technical economics became institutionalised within the professional organization of the engineers, the engineering school still distrusted this new interdisciplinary management science. In spite of the many calls from practicing management engineers during the 1920s and 1930s, hardly any changes took place in the curricula of the technical university.

Like Halpern (1992, p. 1006) argues, in order to achieve jurisdictional control over a particular domain, a professional segment needs support from established segments. In the case of the Dutch engineering profession, support by other segments did occur to some extent. The technical economic segment received support within the engineering organization, KIVI, but not from the academics within the engineering school. The latter feared a “patchwork of compromises” (Layton, 1986, p. 5) between business and scientific demands on the one hand and between technical and economic domain topics on the other hand.

In contrast to German engineering education, management studies could not flourish in The Netherlands. The dominant believe of Dutch engineering professors that non-technical subject would harm scientific status of the education of engineers,

prevented technical economics to mature to a new engineering interdiscipline. In this way the academic segment of the engineering profession blocked the abstraction strategy of those engineers who wanted to establish a new professional domain.

It is interesting to note that in Germany a similar debate about the coexistence of engineering and economic sciences in one study program had resulted in programs for *Wirtschaftingenieure*. The explaining difference for the failure of a similar program in The Netherlands is probably the fact that there was only one engineering school at that time. The consequence was that the different demands from different stakeholders were raised to just one school. In Germany there were many technical universities with different identities, which allowed for more pluriformity[6].

The accountants and management

Where the engineers failed in establishing a new management science, the Dutch accountants appeared to be very successful. At the end of the 1930s they had successfully established their own academic discipline, called *Bedrijfseconomie* (business economics), which included scientific management techniques, bookkeeping tools and some basic economics. Why did accountants succeed where engineers failed? Several factors and developments contributed to the success of *Bedrijfseconomie*. One of the most important differences, compared to the engineers, was that when the accountants began to show interest in management issues, there was no academic institution and academic segment within the profession, which could resist a potential request for extending management studies in the curriculum. The professionalisation of the accountant was already on its way before the first academic business school (Handelshogeschool) was founded in 1913 (Rotterdam). This school, and later the Faculty of Commerce of the University of Amsterdam (1921), and the independent (catholic) business school (Handelshogeschool) of Tilburg (1927), became the main vehicles for the scientisation of the professional domain of the accountants.

Like the engineers, the accountants had a strong professional consciousness at the turn of the century, claiming they were more or less designated to clean up business companies. They saw themselves as “the army of the economic order” and believed that in the near future their profession “. . . should occupy the highest ranks in society”, and that they “were prepared, “relying on their theoretical competence and practical experience, to accomplish any task, how difficult this might be”. The accountants wanted to distinguish themselves from ordinary bookkeepers and the bunglers. The important difference with the engineering profession was that the accountants did not strive after managerial positions in companies[7]. They sought to play their important role in business companies as independent professionals, not as managers. The accountant profession at that time, not being formally recognized by state, could not resist outsiders, like bookkeepers and bunglers, from their professional domain[8]. The only way to control their professional domain was, what Abbott (1988, p. 8) has called, abstraction. Abstraction is the attempt of the profession to transform practical skills to an abstract system of knowledge. The weak position of technical economics at the academic level put the engineers in a backward position compared to other professions, especially the accountants, which began to show interest in the management domain.

Bedrijfsleer and the power of abstraction

Two main developments have contributed to the rise of the Dutch accountancy profession. First, there was the rapid growth of public limited companies during the last decade of the nineteenth century in which a formal distinction between ownership and management of companies was regulated. The accountants' task was the independent audit of financial administration and bookkeeping of public limited companies.

The other important development was the notorious Pincoffs-affair at the end of the 1870s. This case was the first, large-scale financial fraud-case in The Netherlands that made the Dutch government and business world aware of the need of independent control of the bookkeeping of companies. However, like in England, the demand for auditing activities grew faster than the accountant profession, which forced the accountants to tolerate, to a certain extent, groups of bookkeepers and bunglers who were less educated and less certified (see for British situation: Abbott, 1988, p. 25).

The first professional accountancy organization, NIVA, was founded in 1895 with the aim to defend the profession against charlatans. It had developed its own examination terms, admission rules, code of conduct etc. However the NIVA-exams did not reflect the high scientific terms of requirements of a modern profession. The accountancy-exams of the NIVA aimed at a broad, general education, which could provide the accountants with the right knowledge that would enable them to hold high ranked positions in society[9].

In 1906 a small group of young accountants, led by Th. Limperg, branched off from the NIVA, and founded the NAV. The NAV wanted to modernize the accountancy profession, which implied developing strict regulations for the accountancy control activities and upgrading the examinations to high scientific norms. Or as Limperg put:

Our exams should [...] be leading in the field, because we do not want stay behind, but higher, more scientific [...] The terms of examination should be that high, that university education will be necessary (quote of Limperg in de Vries, 1985, p. 124).

One nice example of this scientisation strategy of this group of accountants was that the candidate accountants had to write a kind of PhD thesis, which should be defended during the final exam.

The pertinent point is that the scientisation of the knowledge domain of the accountants in first instance commenced outside an academic institution (see for other examples, Nowotny, 1991, pp. 23-41). Probably, the NAV exams were even more scientific than those of the academic business school in Rotterdam. According to the first study guide the aim of the education of this school was "a general education for commerce", which typically reflected the nineteenth century university ideal of education[10].

Limperg abhorred the non-scientific nature of *Bedrijfsleer*, which he described as a "series of problematic cases in the domain of bookkeeping". His aim was to transform *Bedrijfsleer* into a real, rigorous scientific discipline. To this end he tried to integrate *Bedrijfsleer* with bookkeeping (which was the other *Kunstleer*), and connected these both *Kunstleren* with general economics. This connection with general economics (*Staatshuishoudkunde*) was an issue of great concern for the accountants but also for some economists, which started after the First World War. In Germany this debate started a few years earlier[11]. There general economist resisted the adoption of

Handelsbetriebslehre in general economics, fearing that this *Unternehmungslehre* would harm the purity of the scientific status of their discipline. The vindication for a close relationship between management studies and general economics was later also supported by the influential works of the British economist A. Marshall (*Industry and Trade*, 1919) and the American economist J.M. Clark (*Studies in the Economics of Overhead Costs*, 1923).

In The Netherlands Limperg and the general economist H.W.C. Bordewijk, who showed great interest in the development of professional domain of the accountants, were the most important apologists of this connection[12]. Space prohibits here an exhaustive description of the way Limperg synthesized parts of bookkeeping, *Bedrijfsleer*, and general economics into a new economic discipline, *Bedrijfseconomie*. Central to his rigid intellectual framework was what he called the 'economic motive': a natural law which states that (rational) man will always strive for maximal profit. Because of this basic assumption Limperg was able to develop *Bedrijfseconomie* as a sub discipline of general economics; all aspects of management studies were subordinated to this basic assumption. From the 1930s onwards Limperg's theories became very influential, mainly through his PhD students who evangelized his work in universities and practice. The full synthesis was only published in 1964 by his disciples.

Limperg's ambitions to transform *Bedrijfsleer* into an economic discipline, went concomitant with his efforts to get this discipline embedded into a "real" academic institution, the university of Amsterdam. In his view the Handelshogeschool in Rotterdam lacked a academic climate which could facilitate the exchange of ideas between different disciplines. In this climate of a Handelshogeschool "pure scientific education", which was needed for a maturing of *Bedrijfseconomie* as a science, was impossible. The Faculty of Commerce was founded in 1921. Practical courses like bookkeeping, technology- and language courses were left out, and general economics was a compulsory subject. In the course of the years a further scientisation of this new faculty took place, which was symbolized by the change in name in 1935 from Faculty of Commerce Faculty to Economic Sciences. Although Limperg's ideas were very influential in The Netherlands for a long time, they were not undisputed. By making *Bedrijfseconomie* a sub discipline of general economics that needed to be taught within a "real" academic institution, he offended both the engineers and the professors at the Handelshogeschool in Rotterdam.

Domain conflicts between accountants and engineers

Neither the accountants nor the engineers could at that time legitimately claim that management belonged to their professional field of jurisdiction. The domain lay fallow, open to be conquered by the new professions. During the years 1915-1940 the accountants and engineers moved to this new domain and claimed dominance over it.

As discussed before, the engineers wished to enter this field mainly for social status motivations. However, since the diffusion of scientific management in The Netherlands after 1915, engineers also began to work as efficiency-engineers, later management consultants. One of the first and most influential books, *Cost Pricing and Administrative Factory Organization* (1909), in this field was written an engineer, K.G. Simon, which forced the engineer's way to enter the economic domain. Efficiency, in the end, was an economic issue, which moved the engineers into the area of business

economics. By using the efficiency metaphor, the scientific management engineer sought to legitimate their entrance in the management domain. They believed it was their task to save costs by using the new scientific management techniques.

Similarly, the accountants, traditionally dealing with control and administrative matters, became aware that technical, administrative and organizational issues were closely interrelated. To have a complete understanding of all those issues within a company, they needed to be trained in business economics. Moreover, like the engineers, some accountants started to work as management consultants. Domain conflicts between the two professions arose especially about topics like cost pricing and organizational issues.

In 1918 the accountant A.E.C. Saarloos discussed the potential conflict between the two professions publicly in his article "Engineer or accountant"[13]. The author indicated that both professions were intruded into each other's domain. He consensually promoted the idea of a division of labour and a close cooperation between engineers and accountants. However most accountants appeared to be less consensus-oriented. In general they were of the opinion that engineers were dabblers and were working, on the basis of their "unscientific" scientific management techniques, in an area which they did not understand[14]. Limperg (1965), followed by other accountants, suggested a professional hierarchy for the management domain. Because of their defective economic and administrative training the engineers should confine themselves to the pure technical aspects of an organization. The accountants on the other hand, could, because of their education in (business) economics, legitimately claim the first position as advisers to boards of directors. They were able to oversee and integrate all management issues in their right, economic perspective. The engineer's role should be subordinate, and support the synthesizing work of the accountants.

In 1923, the ONRI, the professional organization of consultancy engineers, and the NIVA discussed the fundamentals for cooperation between the two professions. Both organizations agreed on a beaconing of their domain and a close cooperation. However, this agreement appeared to be void, no concrete actions were initiated to regulate the professional management domain. Rhetorical claims from both sides characterized the tenuous relationships between the engineers and the accountants until the breakout of the Second World War.

It's hard to determine which profession was most successful in the management domain. In the discussion between accountants and engineer the claim of the former appeared to be much more aggressive and arrogant. Engineers more or less avoided the dominant claims of the accountants. At least in one respect they had lost this professional domain conflict: they were not able to develop their own management discipline. The abstraction strategy of the accountants proved to be successful. By connecting general economics to *Bedrijfsleer* the accountants were able to set the directions of this new academic discipline for a long time.

Institutional transformation

The differences between the epistemologies of the Rotterdam and the Amsterdam school should be relativized to some extent considering the modernization and scientisation of the Dutch university system in general. In the first place both schools transformed from practice-oriented commercial schools into schools of (business)

economic science. *Bedrijfsleer*, initially a rather arbitrary collection of courses tailored to business needs, transformed into business economics, a sub-discipline of economics. The length of study changed from a two-year program (Rotterdam) into a full academic program (six years) with bachelors (*kandidaats*), masters, and doctorate degrees. In this respect there is much similarity between the Dutch and German situation in the institutionalization pattern of early management studies. Locke has phrased this as follows:

No discipline in a German university could have any ambition other than a scientific status (Locke, 1989, p. 134).

Underlying the pressure to conform to emerging scientific culture of the Dutch university system was what Locke has called the *Prestigedifferenz*. However it should be noted that this *Prestigedifferenz* had different origins and motives. On the one hand it was inspired by the disdain of the professors at the traditional universities. Engineers and business economists aspired to be accepted members in the scientific community. On the other hand, scientisation was part of the professional strategy to survive in the management domain. Perceived differences in social and occupational status between engineers, technicians at the middle management level, accountants, bookkeepers and bunglers pushed management studies in this scientific direction.

Finally, the question arises: did this new supply of graduates in management studies meet the demand of the corporate world? Representatives of the business community intensively involved in the start-up of the engineering school, the Handelshogescholen (Rotterdam and Tilburg), and the Faculty of Commerce (Amsterdam). In the course of this formative period their involvement diminished for two different reasons.

The first reason was the scientisation strategy of the schools that was in at the moment these schools were adopted into the higher education system. The schools became more autonomous and dissociated from the world of practice.

The second reason was these professional schools became increasingly attractive for large numbers of examinees from the modern, utilitarian Higher Burgherschools (HBS). These schools were meant to provide the industry and commerce sectors with qualified personnel, educated in the modern (in contrast to the classical gymnasia) sciences (mathematics, physics, chemistry, commercial law, bookkeeping, geography, etc.). However, larger numbers of the examinees did not seek for a job in industry or commerce but matriculated in higher education studies. At that time the government complained about the fact the HBS-examinees invaded higher education that was reserved customarily for those who held a gymnasium diploma.

In the 1920s and 1930s these schools faced serious problems to adequately assimilate the massive influx of matriculants. As a consequence, the professional schools soon became overpopulated and the supply for graduates exceeded the demand by public and private organizations. An influential report of the Commission Limburg about the overpopulation at the institutions of higher education concluded in 1936 "a serious overproduction of intellectual labourers was emerging".

At the same time, the demand for graduates of the professional schools was decreasing because of the economic depression. Only a relative small portion (30-40 per cent) of the graduates of the business and engineering schools were employed in

business companies. The expanding governmental bureaucracy took in about one third of these graduates for civil servant jobs.

Our latter remarks on macro labour market developments and changes of the national system of education serve to put the development of the early management schools into the broader context of the modernization of society. It also demonstrates that functionalist explanations, like we described in the first sections of this paper, oversimplified the relationship between the economic and education system. Or as Levine and Kawada have put it:

... education, training, and allocation of human resources in the process of modern economic growth constitute a set of highly dynamic arrangements. These reflect a variety of political, social, cultural, technological, and economic influences that make it unlikely that education and skill at any given time will closely match economic achievement (Levine and Kawada, 1980, p. 2).

Conclusion

In their book *Gravy Train* (1998) Stuart Crainer and Des Dearlove gave a poignant picture of the inside of America's and European leading business schools. In this paper we have looked alternatively from the outside to the inside of the early business schools in The Netherlands. The rise of these schools did not take place in splendid isolation. The *Handelshochschulbewegung* (business school movement) (Bücher, 1925, pp. 446-468) was an international movement that took place in the USA and in Europe. Engineering schools and business schools were pioneering in the modernization process of national higher education system on both sides of the Atlantic.

At the macro level these developments may look very similar, moving towards a convergence of higher educational systems. However, as we have showed in this paper, at the institutional level there appears to be much variety between and even within these systems. By looking at the actors (and their motivations) in relation to the different management schools we have been able to clarify the causes of institutional variety in management education. For example we saw how the route for management education for engineers was cut off by engineering professors within the engineering school and by the abstraction strategy of the accountants. We see the consequences even now of this contest for the management domain that took place in the first two decades of the twentieth century. This very reputable engineering school is still weak in academic management education and has been surpassed in this respect by the new engineering schools that were founded in the 1950s and 1960s.

Our historical actor-based approach introduced a new element in the theories that have attempted to explain the rise of management schools: the emancipation of the new professions. The engineering profession suffered because of the collision between the two professional models: the technical and economic model. The two models are incommensurable, to the extent that they cannot be reduced to a common denominator. Because of this collision of professional models, the accountants were able to follow their abstraction strategy and could more or less monopolise the management domain within the university structure. This monopolisation implied exclusion of the engineers from this academic domain of management studies. At the work floor level the management engineers still appeared to be very influential. Especially when the human relations movement began to develop in the 1930s, the management engineers were very enthusiastic in evangelising this new corporate gospel. Where the

accountants and business economists theoretically struggled about how to integrate the “human factor” in their rigid (business-) economic theories, the management engineers could easily adopt these new insights into their consulting practices. For the business economists there was no way back. Locked-in into their scientisation strategy, they were unable to respond to the multidisciplinary management problems raised by Dutch multinationals after the Second World War. It created room within the higher education system for the advent of interdisciplinary, practice oriented business schools in the 1970s.

Notes

1. The following paragraphs which elaborate on the profession concepts is mainly based on Abbott's work of 1988.
2. Boisot states: “Abstraction, in effect, is a form of reductionism; it works by letting the few stand for the many” (Boisot, 1998, p. 50).
3. In his well known article “The professionalisation of Everyone?” Wilensky (1964) put this dilemma forward pregnantly: “The lay public cannot recognize the need for special competence in an era where everyone is “expert” (Wilensky, 1964, p. 145).
4. General economics were institutionally embedded in law faculties of universities. Because of their knowledge of economics and law, law graduates were very attractive for fast growing companies. Due to the founding of the handelshogescholen in Rotterdam and Tilburg and the commercial faculty in Amsterdam economic science was able to emancipate from the law faculties.
5. ARA, TH-Delft, 1841-1956, inv. no. 705. Brief van de Senaat van den Technische Hoogeschool Delft. Bericht op schrijven van 7 juli 1913, no. 978. Betreffende opmerkingen van de Maatschappij van Nijverheid nopens de studie aan de Technische Hoogeschool, 16 maart 1914.
6. Still German engineers were also leery of business studies. Wirtschaft-ingenieure programs appeared only in a few Technische Hochschule, notably Berlin.
7. With this respect the Dutch accountancy profession differed from their British counterpart where many accountant used their profession as an entry to high managerial jobs (see, e.g. Handy, *et al.*, 1988, p. 8)
8. Formal recognition by the state was regulated by the “Wet op Registeraccountants” in 1962.
9. It is important to note that at that time most accountants only had attended primary education followed up with secondary education level courses in accountancy. General education was still viewed as characteristic for the elites in society.
10. Studieplan 1913-1914 en reglementen, Nederlandsche Handels-Hoogeschool.
11. In 1911 bookkeeping theorist J.F. Schär discussed this connection as follows: “Nationalökonomie und Handelsbetriebslehre sind also nicht nur verwandt, sondern zusammengehörige Forschungsgebiete; beide haben das Wirtschaftsleben der Menschen zu erforschen, die eine Wissenschaft nur mehr nach seinem organischen Ineinander greifen, die andere mehr nach dem Einzeldasein der einzelnen Ineinander greifen [...]” In: J.F. Schär, *Allgemeine Handelsbetriebslehre*, Berlin, 1911.
12. A research report (1920) of the professional association of Dutch general economist (Vereniging voor Staatshuishoudkunde en de Statistiek) indicated that the Dutch general economists appeared to be enthusiastic about more practice-oriented education in general economics. Many graduates from law faculties, in which courses in general economics were

embedded, found a job in offices of the national government. As the latter increasingly had to deal with private companies, it was important that civil servants knew more about business economics.

13. A.E.C. Saarloos, Ingenieur of Accountant, in: *Accountancy*, jrg. 16, no. 178, 1918, p. 119.
14. See for example: Inaugural address of N.J. Polak, *Het huidige stadium en naaste taak der bedrijfsleer*, 17 January 1922 at the Handelshogeschool of Rotterdam.

References

- Abbott, A. (1988), *The System of Professions. An Essay on the Division of Expert Labor*, The University of Chicago Press, Chicago, IL, and London.
- Amdam, R.P. (1996), *Management Education and Competitiveness: Europe, Japan and the United States*, Routledge, London and New York, NY.
- Boisot, M.H. (1998), *Knowledge Assets. Securing Competitive Advantage in the Information Economy*, University Press, Oxford.
- Bücher, K. (1925), *Die Entstehung der Volkswirtschaft. Vorträge und Auffässe*, Zweite Sammlung, Tübingen.
- Chandler, A.D. (1977), *The Visible Hand. The Managerial Revolution in American Business*, Harvard University Press, Cambridge, MA, and London.
- Cheit, E.F. (1985), "Business schools and their critics", *California Management Review*, Vol. xxvii No. 3, Spring, pp. 43-62.
- de Vries, J. (1985), *Geschiedenis der Accountancy in Nederland. Aanvang en Ontplooiing, 1985-1935*, Van Gorcum, Assen/Maastricht.
- Disco, C. (1974), "Class collision or class collusion. Dutch engineers, Capitalist enterprise, and the State 1885-1920", *Amsterdams sociologisch tijdschrift*, pp. 714-55.
- Disco, N. and Lintsen, H. (1983), "De verving van het ingenieursberoep en de industrie 1890-1925", *Tijdschrift voor sociale geschiedenis*, Vol. 32 No. 9, pp. 343-69.
- Fayol, H. (1987), *General and Industrial Management*, rev ed., Pitman, London.
- Giddens, A. (1990), *The Consequences of Modernity*, Polity Press, Cambridge.
- Halpern, S.A. (1992), "Dynamics of professional control: internal coalitions and cross-professional boundaries", *American Journal of Sociology*, Vol. 97 No. 4, pp. 994-1021.
- Handy, C., Gordon, C., Gow, I. and Randlesome, C. (1989), *Making Managers*, Pitman, London.
- Hugstad, P.S. (1983), *The Business School in the 1980s. Liberalism versus Vocationalism*, Praeger, New York, NY.
- Jarausch, K.H. (1982), "Higher education and social change: some comparative perspectives", in Jarausch, K.H. (Ed.), *The Transformation of Higher Learning 1860-1930. Expansion, Diversification, Social Opening and Professionalisation in England, Germany, Russia and the United States*, Stett-Gotta, Stuttgart, pp. 9-37.
- Layton, E.T. (1986), *The Revolt of the Engineers. Social Responsibility and the American Engineering Profession*, The John Hopkins University Press, Baltimore, MD/London.
- Levine, S.B. and Kawada, H. (1980), *Human Resources in Japanese Industrial Development*, Princeton University Press, Princeton, NJ.
- Light, D.W. (1982), "The development of professional schools in America", in Jarausch, K.H. (Ed.), *The Transformation of Higher Learning 1860-1930. Expansion, Diversification, Social Opening and Professionalisation in England, Germany, Russia and the United States*, Stett-Gotta, Stuttgart, pp. 345-67.

- Limperg, T. (1965), *Leer van de inwendige organisatie. Bedrijfseconomie. Part V. Verzameld werk*, Kluwer, Deventer.
- Lintsen, H. (1980), *Ingenieurs in de Negentiende Eeuw. Een streven naar Erkenning en Macht*, Martinus Nijhoff, Gravenhage.
- Locke, R.R. (1989), *Management and Higher Education Since 1940. The influence of America and Japan on West Germany, Great Britain, and France*, Cambridge University Press, Cambridge.
- Macfarlane, B. (1955), "Business and management studies in higher education", *International Journal of Educational Management*, Vol. 9 No. 5, pp. 4-9.
- Merkle, J.A. (1980), *Management and Ideology. The Legacy of the International Scientific Management Movement*, University of California Press, Berkeley and Los Angeles, CA.
- Mosson, T.M. (1965), *Management Education in Five European Countries*, Business Publication Limited, London.
- Nowotny, H. (1991), "Knowledge for certainty: poverty, welfare institutions and the institutionalization of social science", in Wagner, P., Wittrock, B. and Whitley, R. (Eds), *Discourses on Society. The Shaping of the Social Sciences Disciplines. A Sociology of the Sciences. Yearbook – Vol. XV*, Kluwer Academic Publishers, Dordrecht/Boston, MA/London, pp. 23-41.
- Redlich, F. (1957), "Academic education for business. Its development and contribution of Ignaz Jastrow (1856-1937). In commemoration of the hundredth anniversary of Jastrow's birth", *Business History Review*, Nos 31, Spring, pp. 35-91.
- Sass, S.A. (1982), *The Pragmatic Imagination. A History of the Wharton School 1881-1981*, University of Pennsylvania Press, Philadelphia, PA.
- Taylor, F.W. (1911), *Principles of Scientific Management*, Harper & Brothers, New York, NY and London.
- Towne, H.R. (1886), "The engineer as an economist (1886)", in Shafritz, J.M. and Ott, J.S. (Eds), *Classics of Organization Theory*, Wadsworth, Belmont, CA, pp. 52-6.
- van Baalen, P.J. (1995), "Management en Hoger Onderwijs. De geschiedenis van het academisch management-onderwijs in Nederland", PhD thesis, Eburon, Delft.
- van der Veen, R.W. (1918), "Economische vorming en invloed van de ingenieur", *De Ingenieur*, Vol. 33, pp. 265-9.
- Wagner, P. and Wittrock, B. (1991b), "States, institutions, and discourses: a comparative perspective on the structuration of the social sciences", in Wagner, P., Wittrock, B. and Whitley, R. (Eds), *Discourses on Society. The Shaping of the Social Sciences Disciplines. A Sociology of the Sciences. Yearbook – Vol. XV*, Kluwer Academic Publishers, Dordrecht/Boston, MA/London, pp. 331-57.
- Whitley, R. (1988), "The management sciences and managerial skills", *Organization Studies*, Vol. 9 No. 1, pp. 47-68.
- Wilensky, H.L. (1964), "The professionalism of everyone?", *American Journal of Sociology*, Vol. 70, pp. 137-58.
- Willink, B. (1988), "Burgerlijk Sciëntisme en Wetenschappelijk Toponderzoek. Sociale grondslagen van nationale bloeiperioden in de negentiende eeuwse bètawetenschappen", PhD thesis, Rotterdam.

Further reading

- Becher, T. (1989), *Academic Tribes and Territories. Intellectual Enquiry and the Cultures of Disciplines*, Open University Press, Milton Keynes.
- Bedrijfseconomie (1965), *Verzameld werk van prof. dr. Th. Limperg jr. Deel V. Leer van de inwendige organisatie*, Kluwer, Deventer.
- Brands, J. (1947), *Amsterdamse School der bedrijfseconomie contra Rotterdamse School?*, Rotterdam.
- Daniel, C.A. (1998), *MBA: The First Century*, Bucknell University Press, Lewisburg, PA, and London.
- de Vooyo, I.P. (n.d.), *De economische taak van den ingenieur na den oorlog*, Techniek en Maatschappij, Amsterdam, pp. 74-104.
- de Vries, J. and Webers, L. (1979), *Limperg's dagboek van zijn studiereis naar de Verenigde Staten in 1929*, Stenfert Kroese, Leiden/Antwerpen.
- Disco, N. (1990), "Made in Delft. Professional engineering in The Netherlands, 1880-1940", PhD thesis.
- Edwards, R.C. (1979), *Contested Terrain: the Transformation of the Workplace in the Twentieth Century*, Harper Torchbooks, New York, NY.
- Goudriaan, J. (1927), "De ontwikkeling van de bedrijfsleer als toegepaste wetenschap", *Voordracht gehouden in de Vergadering van de Afdeling voor Technische Economie van het K.I.V.I. op 26 november 1927 te 's-Gravenhage. De Ingenieur, T. Technische Economie*, Vol. 43 No. 52, pp. 77-86.
- Goudriaan, J. (1990), "Van Bedrijfsleer via Bedrijfseconomie naar bedrijfskunde", *Abram Mey Tachtig Jaar. Liber Americum*, De Haan, Bussum, pp. 73-82.
- Gratama, B.M. (1922), "De stand van de Nederlandsche ingenieurs", *De Ingenieur*, Vol. 37 No. 36, pp. 691-2.
- Isaac, A. (1923), *Die Entwicklung der wissenschaftlichen Betriebswirtschaftslehre in Deutschland seit 1898*, Spaeth & Linde, Berlin.
- Kraus, J. (1911), "De commercieele zijde van de werkkring van den ingenieur", *De Ingenieur*, Vol. 26 No. 1, pp. 27-8.
- Lane, C. (1989), *Management and Labour in Europe. The Industrial Enterprise in Germany, Britain, and France*, Edward Elgar, Aldershot and Brookfield, VT.
- Limperg, T. (1922), *Eenige beschouwingen over kostprijs en prijsvorming als bedrijfshuishoudkundig probleem. Rede uitgesproken bij de aanvaarding van het hoogleeraarsambt aan den universiteit van Amsterdam*, Haarlem, 8 May.
- Limperg, T. (1946), *De Faculteit der economische wetenschappen der universiteit van Amsterdam, overdruk uit het Jaarboek, 1946-1947*.
- Limperg, T. (1964), *Algemene inleiding tot de bedrijfshuishoudkunde en de leer van de waarde. Verzameld werk. Part 1*, Kluwer, Deventer/Antwerpen/Düsseldorf.
- Locke, R.R. (1984), *The End of the Practical Man. Entrepreneurship and Higher Education in Germany, France, and Great Britain, 1880-1940*, JAI Press, Greenwich, CT, and London.
- Thompson Klein, J. (1990), *Interdisciplinarity: History, Theory and Practice*, Wayne State University Press, Detroit, MI.
- Van der Schroeff, H.J. (1939), "Limperg's beteekenis voor de bedrijfseconomie", in Behrens, M., Kleerekoper, S. and Spits, C.L. (Eds), *Bedrijfsfeconomische opstellen. Aangeboden aan prof. Th. Limperg door den Amsterdamsche Kring van economen ter gelegenheid van zijn 60e verjaardag 21 december 1939*, Wolters, Groningen/Batavia, pp. 1-16.

Volmer, J.G.C. (1909), *Iets over zakenwijsheid. Rede uitgesproken bij de aanvaarding van het ambt van buitengewoon hoogleraar aan de Technische Hogeschool te Delft*, Technische Hogeschool te Delft, Rotterdam, 6 January.

Wagner, P. and Wittrock, B. (1991a), "Analyzing social science: on the possibility a sociology of the social sciences", in Wagner, P., Wittrock, B. and Whitley, R. (Eds), *Discourses on Society. The Shaping of the Social Sciences Disciplines. A Sociology of the Sciences. Yearbook – Vol. XV*, Kluwer Academic Publishers, Dordrecht/Boston, MA/London, pp. 3-22.

Whitley, R. (1995), "Academic knowledge and work jurisdiction in management", *Organization Studies*, Vol. 16 No. 1, pp. 81-105.

Corresponding author

Peter van Baalen can be contacted at: pbaalen@rsm.nl

This article has been cited by:

1. Marc Correa, Lucinio González-Sabaté, Ignacio Serrano. 2013. Home bias effect in the management literature. *Scientometrics* **95**, 417-433. [[CrossRef](#)]
2. Peter E. Hilsenrath. 2012. Healthcare management education settings in the United States. *Journal of Management History* **18**:4, 386-401. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]