# Is Management Interdisciplinary? The Evolution of Management as an Interdisciplinary Field of Research and Education in the Netherlands

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# Is Management Interdisciplinary?

## The evolution of management as an interdisciplinary field of research and education in the Netherlands

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## Abstract

Management research and education are often characterized as being interdisciplinary. However, most discussions on what interdisciplinarity in management studies means have bogged down in ideological fixations. In this paper we alternatively take a historical perspective and analyze the evolution of the interdisciplinarity concept in management studies during the last decades in the Netherlands. We distinguish between two opposite versions of interdisciplinarity: a synoptic (conceptual) and an instrumental (pragmatic) one. Both versions resulted from different knowledge strategies (boundary-work) of competing and cooperating disciplines. We conclude that in the Netherlands instrumental versions of interdisciplinarity in management research and education prevailed.

Keywords: interdisciplinarity, disciplinarity, management science, management education, history of management education

## Introduction

In 1961 Harold Koontz published his well-known article “The Management Theory Jungle”, intrigued by the question why intelligent academics were coming up with such widely diverse conclusions and advice concerning management problems. He observed that, at that time, the theoretical thinking about management could be subdivided into different schools of thought. Nearly twenty years later (1980) Koontz repeated his exercise and found that instead of six schools the amount of different approaches has increased to eleven. After Koontz’ publications many others have observed and criticized the continuing differentiation and specialization of academic teaching and research in management (e.g. Whitley, 1984, Porter & McKibbin, 1988, Cheit, 1991, Willmott, 1994, Van Baalen en Leijnse, 1996). Whitley (1984) states that management studies are characterized by fragmentation, proliferation of diffuse and unconnected intellectual standards, goals and techniques and multiple interpretations of research results Likewise, Donaldson (1995), states that the field (organization theory) is constituted by several mutually incompatible theoretical paradigms. They rather negate each other, than build on earlier work.

Some management intellectuals therefore have argued that this ongoing fragmentation of management knowledge and curricula into smaller, narrowly focussing sub domains and programs should be halted by establishing a *new consensus* (Cheit, 1991), or by bringing down different schools of thought to a limited number of main approaches (Volberda and Elfring, 2001), or to *one* approach (Donaldson suggests structural contingency theory), or by setting up interdisciplinary research and educational programs in management schools. As simple as this call for a new consensus or integration may sound, differentiation and specialization in the production of knowledge are immanent to dynamics in higher education systems within modern societies (Stichweh, 1998; Ringer, 1987).

Knights and Willmott (1997: 9) argue that, in spite of the fact that there has been a strong demand for interdisciplinary research and teaching over the last years, it "often leaves little more that a shrill echo within the corridors of management departments and business schools" and that much lip-service has been paid to the value of interdisciplinary research and teaching in management studies.

What becomes manifest in these discussions is the normative calibre of the perspectives and the frustrations about the inability to establish a clear demarcated body of knowledge with its own identity or at least a common ground for disciplines to communicate with each other. The reasons for advocating interdisciplinarity in management studies are often inspired by feelings of discomfort with the status quo and the belief that something can be achieved (a new domain of knowledge) that lie beyond the current fragmentation of the field.

In 2003 the editorial of *Organization* commemorated the tenth anniversary of the journal. The authors indicated that this journal started ten years ago by evoking a space for neo-disciplinary work, an area where disciplinarians with so many different backgrounds and views about organizations could meet. "We concluded that interdisciplinarity would at least provide a starting point in a never-ending process of 'knowing organizations'". The subtitle of this journal therefore became: *The interdisciplinary journal of organization, theory and society.* Interdisciplinarity in this context meant a "non-place" where academics could exchange new views and different opinions, presupposing that the business community would listen. There was a sincere conviction that the scientific endeavours promulgated by the representatives of different disciplines would eventually strengthen the development of management and business studies as an interdisciplinary science. A new domain with a new identity being shared by people with a multitude of different background would take shape. However this conviction – according to the editorial – has begun to crumple. "Disciplines inhabit fragmented, hierarchical spaces where horizontal movement or even drift is deemed to be problematic. They are forms of science which fix" (2003: 417).

Although many management intellectuals have often referred to the ideal of interdisciplinarity in management science and education, the concept is hardly empirically explored yet. In this paper we attempt to contribute to the understanding of interdisciplinarity in management studies by analyzing and describing the origins and evolution of the concept within the history of management studies in the Netherlands. Two main questions will be addressed in this article. The first is: what was the evolution of the idea of interdisciplinarity in the history of Dutch management studies? According to Kockelmans (1979) the realization of interdisciplinarity is often thwarted by epistemological, institutional, psychological and cultural obstacles. The second question therefore is how the different conceptions of interdisciplinarity in management studies were institutionalized in the Dutch higher education system?

The organization of this paper is as follows. We first briefly introduce the concept of interdisciplinary in general by demonstrating the different forms it took in the course in the history of science and education. At the end of this section we suggest to bring this large variety of ideas back to two basic forms: synoptic and instrumental interdisciplinarity. In the next section we will discuss some organizational dynamics and knowledge strategies that are at play in the process of institutionalizing disciplinary and interdisciplinary science and education. We then continue to depict the evolution of interdisciplinarity in management studies in three phases. Finally, we discuss the main findings of our research and end up with some conclusions.

## The idea of Interdisciplinarity: a brief history

Although the term interdisciplinarity is quite new, the basic idea, the integration or synthesis of knowledge, resonates throughout the history of Western philosophy of knowledge (Thompson Klein, 1990). There is hardly any great philosopher that has not expressed his concern with the overspecialisation in knowledge production and the ways this could be resisted. Interdisciplinarity, as Gusdorf (1977) puts it in historical overview, is seen as “epistemological

panacea", designed to cure all the weaknesses of exorbitant specialization in knowledge production and teaching. As such, interdisciplinarity has generally a positive connotation, "no one dares to say a word against it." (Gusdorf, 1977: 580).

In most cases interdisciplinarity is associated with the utopian ideal of unity or wholeness that has been lost in the course of the history of Western knowledge. Francis Bacon's description of the House of Solomon, presented in his posthumous fictional essay *New Atlantis* (1627), is often used as metaphor for the resurrection of an interdisciplinary centre for scientific research in service of humanity. Talking about the integration of knowledge in the academic context, reference is often made to the twin notion of the community of disciplines of knowledge (*universitas scientiarum*) and the community of teachers and students (*universitas magistrorum et scholarum*) (Thompson Klein, 1990: 20). These ideas are inspired by a "leonardesque aspiration" of creating and training universal man, who is competent in all of sciences (Campell, 1969). Well-known versions of this utopian ideal of integration of knowledge and in education are reflected in the 19th century educational ideals of Cardinal Newman's about liberal education, Humboldt's concept of Bildung and in the French pursuit for encyclopaedic knowledge and education.

*Unity of Science*

One of the most remarkable interdisciplinary movements in the 20th century was the 'unity of science'-movement, that resulted in the founding of the Vienna Circle in 1924 (Kockelmans, 1979, Thompson-Klein, 1990). Here logic positivists, like Canarp, Neurath, Morris, sought to establish a foundation for the philosophy of natural and social sciences in their project the *International Encyclopedia of Unified Science*. The main idea was that the unity of scientific knowledge could be achieved by the reduction of all scientific knowledge in natural *and* social sciences to scientific constructs and the relations between those constructs.

The unity of science idea also has its pendant in education. In his article "An educational application of resources of the unity of science movement", Byrne (1940) promoted general

education in order to create an educated class that was able to maintain and develop civil society. Byrne believed that students should be made aware of the internal tendency within all sciences to converge to integration and unity. Although this unity of science movement became influential in academic circles its ambitions were vehemently criticized and appeared to be illusive. Dewey, one of the most important critics, argued that the "attempt to secure unity by defining the terms of all the sciences in terms of some one science is doomed in advance to defeat." (Dewey, 1938: 34). In more recent debates on interdisciplinarity it is acknowledged that no individual can achieve genuine competence in one discipline, let alone in more than one discipline. Kockelmans (1979: 133) argues that where an attempt has been to institutionalize this Leanordesque aspiration, systems has developed that produce shallowness with a lowest-common-denominator breadth. Science, as he continues, has become a collective product that is only very imperfectly represented in isolated individuals (Kockelmans, 1979: 133).

*General Systems Theory*

This more realistic conception of interdisciplinarity became manifest during the Second World War that gave an enormous impetus to interdisciplinarity in research and education. The US government set up interdisciplinary research projects with people from diverse disciplinary background, ranging from mathematics and physics, to psychology and economics and other social sciences in order to solve unprecedented complex problems the British and US governments were facing during these years. These interdisciplinary research projects gave birth to new, primarily formalistic and abstract, scientific theories like the game theory, dynamic programming, operations research, mathematical information theories, cybernetics. The general systems theory, which originated in the 1940s grew out of the convergence of speculations in various disciplines offered a general conceptual framework integrated research. The systems approach had been developed by L. von Bertalanffy who had been a significant figure in the architecture of an organismic biology during the 1920's. He expressed his doubts about the

reductionism of the mechanistic approach and the mysticism of the vitalistic approach, which became expressed in “urgent calls for professional and national wholeness, oneness and the whole to resist fragmentation of knowledge, the shallowness of individualism and loss of community values” (Harrington, 1996). Instead, von Bertalanffy focussed on the role of organization. By 1954 he came together with K. Boulding (economist), R. Gerard (physiologist) and A. Rapopart (bio- mathematician) to found the Society for General Research (Channell, 1991). New concepts were introduced into the scientific jargon like, learning, regulation, adaptation, self-organization, perception, memory, communication, control, feedback, and information that rapidly diffused to different scientific disciplines (e.g. psychology, biology, physics, economics, statistics, and management studies). The borrowing and migration of concepts and techniques between scientific disciplines started off and resulted in an increasing commonality of the scientific jargon. Since the 1950s general systems theory was, due to the work of Bertalanffy, Boulding, Asby and Simon, also introduced in social and economic sciences, to promote “organismic thinking” as a complement, but often also contradictory, to analytical thinking (Thompson Klein, 1990: 29). It protested against the physcalist thinking and mechanistic worldview of the unity of science movement. According to Bertalanffy (1950) the attitude that considers physical phenomena as the sole standard-measure of reality will lead to the mechanization of mankind and to the devaluation of higher values. While the unity of science movement attempted to build a unified science by bringing down all theories to scientific constructs and the relations between the constructs, the general system theory abhorred this kind of theorizing in which integrated organisms were reduced to the interactions of its components (Sass, 1982). During the 1970s general systems theories became increasingly identified with the concept of interdisciplinarity (Regtering, 1983). Although general system theorists claimed high practicality and wide applicability of their theories, in the 1980’s these theories were criticized for their superformalism and high degree of abstraction.

*General Education*

In education interdisciplinarity is often associated with pleads for general education. Here Cardinal Newman's ideas about liberal education aiming at "a comprehensive view of truth in all its branches" (quoted in Lynton, 1985: 138) reverberate in the modern concept of interdisciplinary education. The most famous example here is the Harvard 'redbook' *General Education in a Free Society*, published in 1945, that called for core curricula covering Western civilization, literary texts, scientific principles, and English composition, with an additional course in each of the humanities, social sciences, and natural sciences (Thompson Klein, 1990; Van Baalen, 1995). The call for general education directly after World War II reflected the general concern for specialized unreflexive education, detached from societal ends.

During the 1960s and 1970s the discussion about interdisciplinarity gained momentum and invoked clear actions that resulted in the set up of new research and educational programs in different scientific fields. In the history of interdisciplinarity this era of institutional change was called the "magical slot" when innovations received support and reforms within universities could take place (Thompson Klein, 1990: 35-36; Anderson, 1985: 181). The main idea behind these actions was that the results from science should be put into practice and had to serve societal ends and student demands. At that time interdisciplinary research and education became closely associated with political activism of dissenting students who criticized academic science for its abstractness and its inability to respond to real-life problems (Shimbori, 1985). However, the set-up of new interdisciplinary research and education programs at universities in Europe and the US in this magical slot-era raised many organizational problems that were addressed in the well-known OECD-report *Interdisciplinarity. Problems of Teaching and Research in Universities* (1972). The OECD-study concluded that interdisciplinarity was not and isolated phenomenon, it spreaded all over Europe and the US. However the total picture appeared to an *archipelago*, a number of scattered or regrouped islands, with diverse dimensions and structures, that have broken away from the system that both provoked and rejected them (Berger, 1972). Nevertheless,

the enthusiasm for interdisciplinary education and research continued in the early 1980's. Delbanco (2003) critically observes that by the 1980s American campuses were already witnessing a proliferation of interdisciplinary centres where faculty sought to escape from their home departments: "At its best, this kind of loosening released new intellectual energies; at its worst, it authorized dilettantism" (2003: 23).

This brief general history of interdisciplinarity in the 20th century demonstrates four relevant issues. The first is that interdisciplinarity is a recurring theme in the history of higher education and is widely discussed in many academic disciplines. Discussions on interdisciplinarity commence at the moment people get frustrated by the narrow boundaries of the discipline. Secondly, it shows that the history of management studies in higher education after World War II was part of a wider context of change in which the interdisciplinarity movement formed a crucial and driving force. Thirdly, disciplinarity and interdisciplinarity were discussed in both activity domains of higher education: *research and education*. The attempt to establish a core curriculum for general education (assuming there is a core), promoted by the Harvard 'redbook' can be viewed as a synoptic form in the field of education. National higher education systems vary in the way research and educational traditions are connected to each other.

Finally, our brief history shows that in order to legitimize the establishing of interdisciplinary programs, two different main arguments were used: the *synoptic* (or conceptual) and the *instrumental* (pragmatic) argument (Thompson Klein 1985, 1990; Lynton, 1985). The synoptic view assumes a natural order of things (like a jigsaw puzzle); disciplines have a predestined position in this natural order. As a whole they reflect the cognitive composition of nature as a whole. It is assumed here that in the end, through methodological unification, a sound coherent theory, which is applicable to a wide range of problems, can be developed (Thompson Klein, 1990). The 'unity of science movement' and the general systems theories are both examples of this kind of synoptic interdisciplinarity. Within the instrumental, perspective there is no unifying

claim; interdisciplinarity is primarily associated with solving practical problems. It works like a pigeonhole; it mobilises theories from different disciplines in order to solve practical problems (De Wilde, 1992). In this view the current division of scientific labour is conceived as a given, not by nature but as a result of historical contingencies and social demarcation activities of groups of scientists. It is here that we see an easy migration of concepts and research instruments across different disciplines. The emergence of Operations Research as a new academic interdiscipline in the US and Great Britain during World War II was based on this instrumental perspective.

| **Synoptic interdisciplinarity** | **Instrumental interdisciplinarity** |
|---|---|
| Reflection and introspection | External interaction |
| Internal coherence | Eclectic, using external means |
| Stability and continuity | Applicable to different categories of problems |
| Methodological unification | Contact with state-of-the-art knowledge within existing disciplines |
| Long term perspective | Short term projects |

*Table 1. Two perspectives on interdisciplinarity (Thompson Klein, 1985)*

As we will show in this paper both perspective on interdisciplinarity have been entertained in establishing interdisciplinary management studies in the Netherlands

## Tribal Dynamics: implementing Interdisciplinarity

It appears to be very hard to find a definition for interdisciplinarity, which covers the variety of its different manifestations over time.[i] For this reason we will discuss several dynamics aspects of interdisciplinarity that helps to explain the variety.

### The Disciplinary Paradox

In order to understand the history of interdisciplinarity in management studies we first have to define its constituencies: the disciplines. Disciplines are often viewed as the basic units of the modern academic enterprise, presuming a natural and non-temporal division of scientific labour

that started during the second half of the 19th century. Many philosophers and scientists have attempted to define criteria or methods (e.g. Comte's 'reasoning and observation', Popper's falsification principle, Merton's social norms for establishing 'certified knowledge') to demarcate the cognitive domain and nature of a scientific discipline. However empirical research on the history of sciences has shown the contingent nature of the discipline and has alternatively proposed different units of analysis to describe the evolution of different sciences (e.g. field, domains, paradigms, research programmes, scientific specialties, research groups, research networks). Considering the historical contingent nature of disciplines and the impossibility to define invariable criteria for demarcating scientific disciplines, some authors propose to study disciplines from diachronic perspective (Bechtel, 1986; Biagioli, 1990; De Wilde, 1992). In this perspective it is recognized that social and cognitive factors are interacting variables which changes the identity, the domain, and the boundaries of the discipline over time (Gieryn, 1983; Bechtel, 1986). In our view disciplines have historically arbitrarily established boundaries that vary from country to country, and even from institution to institution. Therefore, the institutionalization of science into disciplines should not be viewed as a smooth intellectual progress and organization of scientific knowledge into disciplines but in terms of "regionally and intellectually carrying continuities and transformations" (Wagner and Wittrock, 1991a: 6). In this sense academic disciplines are embedded in the institutional environment of the national higher education system, or as Gass puts it:

> "To meddle with the disciplines is to meddle with the social structure of the university in its entirety." (Gass, 1972).

In addition to Kuhn's emphasis on the social practices and processes in the construction of scientific paradigms, Becher (1989) stresses the relationship between the nature of the knowledge domain (epistemology) and the social organization of disciplinary cultures for which he introduces the concept of 'academic tribe'. By using this concept Becher introduces an anthropological perspective on the dynamics in and between disciplines. Within the boundaries of

disciplines scientists develop their own methodologies, knowledge, languages, and culture (Clark, 1983). However the boundaries of the different disciplines differ to the extend they are permeable and can be penetrated by contesting disciplines and laymen. Gieryn (1983) views the boundary-work between science and non-science as being part of ideological efforts by scientists to distinguish their work and products from non-scientific intellectual activities.

Disciplinary academic structures can be seen as a precondition for the forming of new interdisciplinary studies. This is what Thompson Klein (1990) has called the *Disciplinary Paradox*: to establish an interdisciplinary field, disciplines are needed as constituting building blocks. The Disciplinary Paradox suggests that interdisciplinary movements will be particularly strong where disciplinary structures prevail.

**Relational Knowledge strategies**

An important implication of establishing an interdisciplinary knowledge domain is that heterogeneous groups of academic professions with different disciplinary backgrounds are involved. A central point in our emerging perspective is that disciplines and interdisciplines are the product three types of relational knowledge strategies: *abstraction*, *monopolisation* and *association* strategies of professions in historically contingent fields of science and practice. These strategies are inspired by conflicts or commonalties of interests of the participating scientists and other stakeholders of the knowledge domain. These strategies are characterized as relational because the extent to which a particular strategy can be accomplished by one stakeholder depends on the strategic behaviour of other stakeholders. For this reason interdisciplinary knowledge domains are constantly contested by knowledge strategies of other stakeholders. We describe these three strategies briefly.

*Abstraction* refers to the disembedding of meaning from its local and temporal context (Giddens, 1991). It is viewed as an important strategy to define, control and defend the knowledge domain (Abbott, 1988: 9). The more abstract the knowledge can be developed, the harder it becomes for

laymen and other academic professions to penetrate the knowledge domain. It is important to note that abstraction is a form of reductionionism: “it works by letting the few stand for many” (Boisot, 1998: 50). The downside of this abstraction strategy is of course that the knowledge becomes disconnected from practice and thereby losing its legitimacy to the laymen.

*Monopolization* refers to the process by which scientists and professions succeed in claiming and closing a field of knowledge and the interpretation of this knowledge (Gieryn, 1983). A successful closure (‘balkanisation’) of a domain of knowledge by a particular group logically implies the exclusion of others. According to Campell (1969) this process of closure originates from ‘ethnocentrism’, “i.e. the symptoms of tribalism or nationalism or in-group partisanship in the internal and external relations of university departments, national scientific organizations, and academic disciplines”.

Whereas disciplines are the result of abstraction, closure and segmentation, interdisciplinary knowledge domains are the outcomes of *associative strategies* of scientists (and university administrators, stakeholders external to the university) (Selander, 1990). These strategies refer to the cooperative activities among scientists to achieve certain common goals and to solve boundary conflicts. Associative strategies are means to reduce professional conflicts and intend to mobilise resources to establish a new interdisciplinary knowledge domain. Mostly, associative strategies are temporal and dissolve when the agreed objectives have been attained.

**Education and Research**

Cultural variety in interdisciplinary set ups of new intellectual fields may arise as a consequence of differences in the specific intellectual, institutional, and political constellations under which the different stakeholders of this intellectual field act upon in forming the (inter-) discipline (Wagner and Wittrock, 1991a). With respect to management studies Locke (1989) has emphasized the role of differences in academic ideologies in national higher education systems as the main cause for differences in the evolution of management studies across countries. This cultural tradition also

determines to a large extend the way that education and research are connected within universities. With respect to the formation of schools in the late 19th and early 20th century two different paths of institutionalization can be distinguished (Wagner and Wittrock, 1991b). The first path is called *scientization*, 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. The second path is called *professionalization*; the formation of a vocational group to which the training is devoted. Relevant actors view these institutions more as training- and education-oriented. This distinction might be useful for analysing the early phases of the evolution of academic institutions, however in later phases most instititutions have tried to follow both strategies at the same time. The identity of most schools is therefore characterized by a structural ambiguity, an inherent conflict between the ambitions to serve the needs of scientific research and professional training (Light, 1983, Van Baalen en Moratis, 2004). To certain extend this inherent conflict was denied in the old university philosophies. For example, in the Humboldt tradition, which was deeply rooted in the Scandinavian and German-speaking countries (the Netherlands included) the 'education through science' ('Erziehung durch Wissenschaft'), was in fact denying the distinction between educational and scientific activities. By doing scientific research students become educated and will acquire deep and specialized knowledge about the subject matter of a discipline.

In the next sections we depict the evolution of management studies (research and education) while focusing on the form of interdisciplinarity, the knowledge strategies and the connection between research and education.

## The Forming of a Discipline

The rise of interdisciplinary management studies after World War II can only be understood against the background of the development of this new intellectual field in the pre-war period.

Locke (1984, 1989) showed that in this period the evolution of management studies varied from country to country. Idiosyncratic educational heritages and different patterns of industrial development have influenced the way management studies were formed. The main difference between the Dutch and US situation was that in the Netherlands, prior to the outbreak of World War II, a new academic (sub-) discipline (business economics) was formed, while in the US, in spite of the early and strong development of functional disciplines, the management remained a fragmented and eclectic field of research and education (Van Baalen, 1995).

In spite of this fragile evolution of management studies, the US business schools saw a rapid growth of student enrolments in the interwar period. From 1920 to1929 the student population at the business schools grew from 36.456 to 67.496. The number of business schools increased from 12 in 1912 to 120 in 1939. The lack of an integrative body of knowledge and the tight orientation of most schools to the needs of business resulted in an increasing fragmentation of the curricula that emphasized technique and vocational skills. Moreover, business schools curricula saw an explosion of topics and courses during the 1920s, which resulted in confusion in course offerings. In the late 1920s and early 1930s a general dissent and criticism rose about this ongoing subdividing of management knowledge in "self-contained subjects" (Pierson, 1959: 48) and intimate (financial) bonds with the world of business. The typical response to this increasing specialization at the US business school was not to work on a general theory of management but to restore the old Anglo-American university ideal of 'liberal education'. In their influential research about American business schools Bossard and Dewhurst (1930) promoted the of strengthening of liberal education with a "businesslike disposition" and to bring down the number of narrowly focussed business courses:

> "… a broad background of general and economic knowledge, a disciplined capacity for independent thinking, a facility in oral and written expression, and an instinctive appreciation of ethical values and responsibilities should constitute the primary goals of professional training for business." (Bossard and Dewhurst, 1930: 222).

Harvard responded to this call for 'businesslike liberal education' by inserting courses in Business History (1927) and Business Ethics (1928) into its curriculum. Pleads for liberal education gained momentum during the years of The Great Depression. In a Harvard Business Review-article, *The failure of Business Leadership and the responsibility of the Universities* (1933), Wallace B. Donham, dean of the Harvard Business School, criticized the failure of business and political leadership. The main problem was overspecialisation and the lack of interest to consider actual business problems within their broader, societal context. Or, as Donham put it: "It is no one's problem to consider things in their relations" (Donham, 1933: 419). Compared to the situation in the US, the interwar developments of management studies in higher education in the Netherlands took a quite different track. Academic business education in the Netherlands started in 1908 with the appointment of J.C. Volmer, an accountant, as a professor at the technical university (Technische Hogeschool) of Delft. The first Dutch business school was founded (Rotterdam, 1913) during the business school movement in the US and Europe at the turn of the century. The Commercial Faculty of the University of Amsterdam followed in 1921, and the independent catholic business school of Tilburg (in the southern part of the Netherlands) in 1927. Within these schools, the evolution of Bedrijfsleer, the forerunner of Dutch business economics, took place. Until the 1920s Bedrijfsleer was an unrestricted and fragmented field of commercial and industrial courses which lacked an integrating formal object. It was called a *Kunstleer* instead of a science, which was on the one hand based on Taylors scientific management and on the other hand on the German bookkeeping sciences. Courses in technology, bookkeeping languages and scientific management were all part of the curriculum of this school. Until the early twenties management was a 'non-place' without a underlying synoptic framework that could relate these courses to each other.

Until the early twenties the field of management was contested non-place for which no division of professional and scientific labour was established yet (see Abbott, 1988). The accountants were very ambitious to emancipate their controlling and financial advisory activities from the

ordinary bookkeepers status and on the other hand to distinguish themselves from the scientific management engineers working in this field. Accountants envisioned the engineers as dilettantes, not capable of doing the complex accountancy work (e.g. on cost pricing). Within one of their leading professional organisations the accountants adopted scientific standards for their professional exams by bringing these at an equal level of university education (they even prompted a kind of PhD-thesis). By tying accountancy to modern economic sciences the accountants transformed management into a new abstract discipline: business economics. A great deal of their 'scientific' work that was already done within the professional accountancy organisations and was later adopted in the curricula of the academic business schools in the twenties (De Vries, 1985). The abstraction of the contents of the accountants work and education was also intended to exclude the engineers from greater parts of the administrative and financial management domain. By introducing economics theories in business studies accountants succeeded in monopolising the *understanding* of business processes in a disciplinary, economic perspective: business economics. The engineers could not catch up with the abstraction and monopolization strategy of the accountants. A few attempts were made to establish a new interdisciplinary engineering science, called ‘technical economics’ (Technische Economie). These attempts failed because of the lack of support of the engineering professors, who thought that mixing up engineering with economics would devaluate the status of the engineering disciplines (Van Baalen, 1995). Business economics was not just a new (sub) discipline within the higher education system; it was also about the establishment of a social hierarchy of (future) disciplines within the emerging management domain (see also Biagioli, 1990).

During the 1920s and the 1930s the new business economist community hotly debated the nature of the new discipline. The debate was initiated by the psychologists who invaded the management domain. The business economists discussed if and how the human factor should be integrated in their economic theories. This discussion segmented the Dutch business economists into two academic tribes, the *pragmatists* (Rotterdam) and the *dogmatists* (Amsterdam). The pragmatists,

inspired by the American economist J.M. Clark, advanced the idea of ‘different concepts for different purposes’. The ultimate objective of this new economic science was to serve practice. The dogmatist took an ‘economic ethnocentric’ perspective. They thought that human factors should be excluded economic analysis as they blurred economic analysis. Until the late 1960s this schism dominated the discussion within the discipline business economics.

The process of disciplinarization of management studies into business economics went concomitant with the institutional disciplinarization of the academic business schools. The duration of study was lengthened, doctoral and doctorate programmes were developed, the enthusiasm for undergraduate programmes decreased, and practical and non-economic courses were eliminated.

### Preluding Interdisciplinary Management Education

The founding of the Dutch interdisciplinary management schools in the 1960s and 1970s co-evoluted with a broader institutional reform of the university system that started directly after World War II and with the revival of firms in the recovery of the post-war economy. At least three major post-war developments gave rise to the interdisciplinary movement in management studies. The first development was the growing criticism amongst academics on the isolated position and ‘ivory tower’-orientation of the university in Dutch society. The debate about the role of universities in the Dutch society started in the early 1930s but flagged during economic recession in the 1930s and further subsides by the dawn of World War II. Nevertheless germs for thinking about reforms of the university system were seeded and directly after 1945 the discussion on the role of universities was resumed. The very long duration of academic studies, the increasing specialisation, the limited orientation towards problems in society, and the lack of differentiation in pedagogical objectives were vehemently criticized. Although no great structural reforms in the higher education system were carried through within the short term, the call for a

transformation created a favourable climate of opinion to experiment with interdisciplinary educational constructs.

Closely associated with these developments was the call from prominent captains of industry for the need of a new class of professional managers that could lead the reconstructing and rebuilding of the post-war, devastated industry. These new professional managers should differ from the usual graduates of the schools of engineering and economics; they shouldn't be specialists but broadly educated generalists capable of integrating engineering, economic and social sciences. These industrialists demanded for “general educated intellectuals for medium sized companies” (Van Baalen, 1995).

Until the 1950s the concepts of management education and interdisciplinarity were hardly known in the academic and business world. Management was not thought to be a profession in itself. New ideas about educating young people for business were comprised by the mythical and in fact negative concept of *de-specialization.* This changed rapidly after the import of American ideas about management education within the general framework of the Marshall Aid (Van Baalen, 1995; Gourvish and Tiratsoo, 1998) Hundreds of Dutch business academics and representatives of the business community travelled across the Atlantic Ocean to be introduced in the concepts and methods of modern professional management. At the same time many American business professors and consultant came to visit European countries, i.c. Holland, who evangelised about American management methods, training and education.

**The interdisciplinary management education movement**

The rise of the Dutch interdisciplinarity movement for management education has its origins in the Inter University Contact for Management Education (IUC), which was founded in 1951 (Van Baalen, 1996). It started with a small international group of engineering professors, but as they became aware that management could not be studied and taught from a disciplinary engineering perspective, economists, psychologists and sociologists were invited to become associated with

the IUC. This organisation played a decisive role in implementing American ideas about management education. In contrast to the pre-war period, in which scientific domain conflicts and monopolizing strategies dominated, the post-war period was characterized by associative strategies of engineers, business economists, psychologists, sociologists and representatives of industry who co-operatively worked together within the framework of the IUC on common goals.

In spite of these associative strategies to set up integrative management education programmes, there was a firm intellectual clash between business economists on the one hand and psychologists and sociologists on the other hand. The former were resisting the pragmatic American ideas about management education, and especially the lack of disciplinary rigor in US management science. Consequently, business economists weren't very receptive to the ideas about of the human relations movement which placed the human factor at the centre of modern management. Business economists argued that the human factor might be important to managerial decision-making in practice but should be excluded from theoretical analysis. This scientific domain conflict resulted in the forming of new business disciplines (business psychology, business sociology) and the institutional and disciplinary partition of the management domain.

In short, the 1950s were on the one hand characterised by associated strategies between different business professions in management education. Their efforts resulted in the founding of interdisciplinary educational institutes exogenous to the universities. The impossibility the insert educational reforms *internal* to the university reflected the conservative attitude of the universities towards pedagogical innovations. On the other hand, the human relations movement gave rise to the forming of new business disciplines, which were established in separated institutional disciplines. At the cognitive level only very few professors were convinced of the need of an integrated science of management.

These early years after WW II saw a growing sense of urgency about the need for despecialized, practice-oriented management education. It was an attempt to *de*-demarcate scientific cleavages

and to de-institutionalize boundaries between scientific and non-scientific education. This instrumental idea about interdisciplinarity from the part of the business world and some business professors was mixed up with synoptic ideas that originated from the discussion about the reform of the university. There was so not much interest in interdisciplinary research or an interdisciplinary science of management. Almost all discussions focused on de-specialized education in (business) economics and engineering. The concept of *despecialization* was hardly developed at that time; it preluded on the more sophisticated concept of interdisciplinarity in the 1960s and 1970s.

### The rise of telic institutions

Results of the interdisciplinary management education movement were modest in the 1950s. The biggest successes were the foundation of institutes for post-experience management education that were rather loosely connected to universities. During the 1960s this situation changed when the interdisciplinary movement (not only in the management) entered, which Anderson (1985) has called "that magical slot in history" when many began to believe that tough problems in society and science would yield if new interdisciplinary attacks were mounted. There were two major developments that supported the rise of the interdisciplinary management education movement and the felt need to implement interdisciplinary programs.

The first was the educational demand of the business world. Prominent representatives of Dutch multi-nationals (Shell, Philips, Unilever etc.) were perturbed by the slow progress the restructuring process of the Dutch higher education system. These business companies were confronted with a fast growing influx of academic specialists who were all speaking their own specialist language. There was a serious fear that their corporations would collapse into diverging and fragmented specialisms. Out of this fear a need was born for a new breed broadly educated generalists, or more precisely, bridge-builders who could hinge between the disciplinary educated business specialists.

The second was the intellectual contribution of outstanding American management theorists, like Herbert Simon, Richard Cyert, and James March, to the development of a new management science in the 1950s and early 1960s. Simon's focus on decision-making, bounded rationality and non-maximization dictum paved the way interdisciplinary management theories. It broke down the very foundation of the classic economic theories that was caged by the maximization assumption and ceteris paribus clause in economic science. Cyert and March' seminal book "A Behavorial Theory of the Firm" (1963) can be conceived as the breakthrough of an interdisciplinary management science as it advocated an inductive, empirical, multiple actor decision making approach at micro-levels and the elimination of the ceteris paribus clause. Quoting J.M. Keynes, they stated: "Economics presupposes psychology."(Cyert and March, 1963: 310).

This new management science revived the debate among Dutch business economists about the interdisciplinary nature of business and management studies. It segmented the business economists community again into various 'tribes'. Between the two extreme positions (proponents and opponents) many professors sought a nuanced position in this debate. Professor J.L. Mey, a prominent business economist at that time, wrote an influential article "Management, a common province of different sciences" (1962). He advocated a 'synthetic approach', not a new management science. He rejected the American new management science in which the different business disciplines were unified (and in fact reduced) to one meta-science:

> "The difficulty here is that we have no common denominator for the different relationships between the managerial phenomena if we consider them from different points of view. This is the unsurmountable impediment also of applying mathematical techniques to actual management problems; we can apply them to a problem formulated from a technological, economical, psychological or whatever point of view, but we are unable to apply them at the same economic, sociological or psychological relationships."(1965: 64-65).

Mey's synthetic approach emphasized interdisciplinary thinking (not unifying) which is "to understand the relativity of different approaches and to make a choice wherein all of them were

taken into consideration."(1965: 66). In a way this was a revolutionary vision as it degraded business economics from a hierarchical position in the management domain to an equal position, next to other disciplines. Many Dutch professors in business economics caught similar doubts about the disciplinary and dogmatist conception of business economics. However most of them did not leave their home discipline of business economics but sought to integrate business economics with ideas from the new management science (esp. elements of the behavorial theory of the firm). While most of them did not believe in a new interdisciplinary management science, they 'tolerated', and sometimes actively participated in, the founding of business schools in the 1960s and the 1970s. These schools were explicitly founded in order to train and educate a new breed of young, high-potential people for business, not to develop a new science for management (Van Baalen, 1995). With this explicit professionalization objective the business schools broke with a long Dutch tradition in higher education in which science and academic education were inextricably bounded up (education through scientific research). In this professionalization strategy an instrumental form of interdisciplinarity prevailed.

During the 1960s professors from different disciplines, faculties and universities co-operatively worked to the implementation of interdisciplinary business programmes in schools of engineering and economics. Most of these programmes were set up on an experimental small-scale base, sometimes in an interfaculty institute. Grant and Riesman (1968) have used the term *telic institutions* to describe these purposive reforms which had a strong sense of mission and distinctiveness. These telic institutions claimed a high degree of autonomy and freedom to act with respect to the mother-disciplines and the bureaucracy of the university.

The interdisciplinary movement in Dutch management education was primarily born out of an educational demand. In contrast to the American management theorists, Dutch advocates of the new business schools were sceptical about the development of a new integrated management science in future. Their reasons for founding new institutes of interdisciplinary business education were primarily inspired by instrumental motives i.e. the provision of practice-oriented bridge-

builders. Restructuring the older disciplines into a new omni-science of management, which is a more radical version of interdisciplinarity, wasn't felt a realistic option.

In the course of the 1970s and the early 1980s this sceptical opinion slightly changed into a more synoptic version of interdisciplinarity which was based on redefining boundaries of the functional management disciplines. The main purpose of this reform strategy was stimulating reflective thinking in deal with complex management problems. In these years interdisciplinarity became closely associated with general systems theory and sophisticated theories of decision-making. Both kind of theories were primarily concerned with the objects that were studied instead of departing from disciplinary perspectives. The rather autonomous position of the telic institutions strengthened the interdisciplinary zeal within these organisations.

### The Interdisciplinary Aftermath

Since their founding in the 1960s and 1970s these institutes have changed dramatically. Enforced by the Higher Education Act (1981) these experimental institutes had to conform themselves to the regular system of higher education. Interdisciplinary business administration programs are yet embedded in separate faculties and behave and have to behave like normal disciplines.

In her well-documented study on interdisciplinarity Thomspon Klein (1990) signals a general shift from the "euphoria of creation" about interdisciplinary projects during the 1970s to empirical realism in the 1980s and early 1990s. The start-up years came to be viewed as the Golden Age in the mythology of many telic institutions. At the conceptual level it becomes clear that schools should abstain from designing meta-conceptual schemes which pretend to integrate all kinds of knowledge and disciplines like the general systems theory. It was launched as a grand assemblage of presuppositions about the working of organisations which represents the complex reality. However, during the 1980s the general systems theory came criticised for its high abstraction, its superformalism, the lack of criteria to determine system boundaries and the inability to deal with conflicts and processes of change; general systems theory has become a

discipline in its own right. The same of kind of criticism was voiced against rational decision making theories in management. As Leavitt (1989) has demonstrated decision making is only one aspect of the total management process. Management scientists have overemphasised this element in negligence of the entrepreneurial and implementing aspects. Moreover, in most decision making theories no While the discussion about interdisciplinarity in Holland subsided, it became subject of an intense, international debate after the publication of Burrell and Morgan's (1979) study about the influence of sociological paradigms upon organizational analysis. They applied Kuhn's concept of paradigms to refer to mutually exclusive social constructions, which generate distinctive analyses of social life. But whereas Kuhn's paradigm approach reflected a diachronic analysis of the development in the natural sciences (paradigm, crisis, revolution, hegemony of a new paradigm), Burrell and Morgan use the concept in a synchronic way: several paradigms can exist simultaneously, but co-exist in a permanent incommensurable state (Johnson and Duberly, 2000). Burrell and Morgan's view is that organizational theories can be divided in a matrix of four paradigms whose two axes are based upon different metatheoretical assumptions about the nature of social science and the nature of society. The authors were convinced that the four paradigms were mutually exclusive and incommensurable as "they offer different ways of seeing. A synthesis is not possible, since in their pure forms they are contradictory, being based on at least one set of opposing metatheoretical assumptions. They are alternatives, in the sense that one can operate in different paradigms, sequentially (marking is ours!) over time, but mutually exclusive, in the sense that one cannot operate in more than one paradigm at any given point in time, since in accepting the assumption of one, we defy the assumption of all the others" (1979: 25). During the 1980's the paradigm debate nagged within the field of management and organization. However the impact of the Burrel and Morgan-debate was huge, as incommensurability became an accepted and legitimate philosophical stance in the business schools. It relieved many management professors from a never-ending search for synoptic interdisciplinarity in research and education. Serious epistemological reviewing to investigate

how theories, models or techniques could be combined or integrated was no longer a commonly shared academic ideal. Moreover, at the moment the business schools were adopted into the regular higher education system, there was no longer a need to legitimize and present themselves as interdisciplinary. On the contrary, once encapsulated into the system they felt they had to prove that management is a 'real' discipline, with its own theories, concepts, methodologies, journals, peer-review systems etc. This resulted into a paradoxal situation in which the intensive debate on incommensurability in the 1980s and early 1990s allowed for a re-disciplinarization and scientization of sub (functional) fields within the larger domain of management studies. This neo-balkanization of the functional disciplines has formed new clusters of specialties which tend to behave like disciplines leaving interdisciplinarity gaps in between (Campell, 1969).At best, management can be called an interdiscipline, an assemblage of methodologically loosely connected sub disciplines, orientated on management and organization problems.

Even the traditional integrative courses like strategy, business policy and organisation have become disciplines in their own right and can be conceived as functional specialisms. They have their own scientific journals, conferences, peer-communities, methodologies, theoretical constructs etc. Whitley (1988) characterized management sciences as a fragmented field which is subject to conflicting interests of different stakeholders and audiences. Interdisciplinarity did not simply emerged by bringing scientists with diverse disciplinary backgrounds in close proximity.

## Conclusion

Koontz (1961) was very keen in identifying different sources of what he called "mental entanglement in the Management Theory Jungle": semantic problems, differences in the definitions of management as a body of knowledge, a priori reasoning, misunderstanding of principles, and inability or unwillingness of management theorists to understand each other. By signalling these underlying, seemingly trivial semantic but also social mechanisms in the production of management knowledge Koontz pre-empted in a very early stage on the later

discussions about the social production of science. The production of scientific knowledge then is neither seen as the result of rational argumentation and empirical findings connected by a coherent set of methodological rules nor as the logical response to differentiation and specialization in reality. It is conceived as a social construct, the outcome from interactive and interpretative work of participants, involved in a continuous negotiating process and power plays about knowledge claims (Boon *et al*, 1994).

In this paper we have mainly focussed on the strategies of different academic tribes to balkanise the field of management studies. The history we have described is a dynamic one. At the moment a particular academic tribe is close to monopolization, boundary conflicts will arise with other tribes. What makes management studies very vulnerable to these tribal dynamics is the affiliation with the business world. It puts clear constraints on the abstraction strategies of disciplinarians. The more abstract the content of the domain and the more the boundaries of this domain are impermeable for the lay public, the greater the chance that the discipline becomes disconnected to the practice of organizations, resulting in what Schön (1983) has called the 'rigor or relevance-dilemma'.

We have tried to answer the question whether management is interdisciplinary, not from a normative but from a historical perspective. For the Dutch situation we can conclude that synoptic versions of interdisciplinarity did not rooted in the new business schools. In research a disciplinarian outlook prevailed. In spite of a few attempts to take general systems theory as the common, integrating framework for studying management problems, instrumental conceptions of interdisciplinarity returned in the business schools. There was a brief 'non-place' period in the 1980s, followed by re-disciplining of functional management domains. In education a pragmatic, instrumental form of interdisciplinarity dominated in the business schools.

From this historical perspective we conclude that interdisciplinarity has been variously defined as a methodology, a concept, a process, a way of thinking, a philosophy, and a reflexive ideology (see also Thompson Klein, 1990). In management studies all these variations have been

entertained. In our opinion the discussion about interdisciplinarity, synoptic and instrumental, should be continued to critically reflect on all these variations.

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[i] The concept of interdisciplinarity has been subject to extensive debate in the late 1960s and 1970s. One of the central issues in these debates was whether one should distinguish between interdisciplinarity, multidisciplinarity and transdisciplinarity. We acknowledge the importance of these distinction but we will, for clarity reasons, only use the terms disciplinarity and interdisciplinarity.

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