Organizing for knowledge

Tales of reification, resilience, and reflexivity in knowledge production management

Célio A. A. Sousa

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Organizing for knowledge

Tales of reification, resilience, and reflexivity in knowledge production management

Een wetenschappelijke proeve of het gebied van de Managementwetenschappen

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The completion of whatever work is eventually a social accomplishment. No dissertation is written without the help and encouragement from many people. To a certain extent, this accomplishment is also theirs. This opening section can thus be seen as another alliterated tale, one of remembrance and recognition.

It is now six years since I arrived in the Netherlands. As a southerner, I was soon puzzled by many aspects of the Dutch environment. In one way, I had problems getting used to the shortage of sun (especially in the summer), to go for a sandwich and factory-*chic*-soup lunch at noon, fixing flat tires from bikes, or understanding how Dutch queue for buses (they do not queue at all, by the way). In another way, I was impressed by things such as the urban planning, the countless bike paths along waterways, or the level of respect for one's private life. After all these years, I do not feel a foreigner anymore. This is actually an understatement, as the Netherlands became my second home. The decision to move here took me nearly a year to crystallize. It was a hard one though. I had always lived in Portugal, close to the family and friends. I had a permanent and challenging job. However, in the end, the personal and professional motivations associated with experiencing a *different* life superseded the fears and uncertainties. Looking back, this decision was the wisest and most rewarding I could have made at that time of my life.

Over the last six years, I have been tremendously fortunate to work under direct supervision of Paul Hendriks. To use the word 'fortunate' is yet another understatement. Paul, your permanent intellectual guidance, encouragement, and personal involvement were decisive for bringing this endeavour to a 'happy end'. I am deeply grateful for your sober, yet intense and genuine support. It is still a mystery to me how did you always find the time, the patience, and the stamina to answer all my countless questions, to soothe my anxieties, and to correct my messy papers. The latter would have been much more easily intelligible for you, had I been swifter in getting rid of that southerner writing-style, so full of twists and turns. You are certainly the archetypal supervisor any doctoral researcher wishes to have. You should be proud of that! I am also grateful to have had Willem de Nijs as a supervisor. Willem, despite your stuffed agenda, you have always managed to find the time and the spirit to cheer me up. You have backed me with a delicate mix of latitude and trust, that is, some of the key ingredients any young researcher needs to cope with ongoing worries. I also sincerely thank you for preventing that those bothering letters from P&O disturbed the course of my work. At a different level, I am truly in debt to all those research managers that agreed to share their time, thoughts, experiences, and anecdotes with me. Without their invaluable

contribution, this research would not have been possible. Each interview was a learning experience for me. Their enthusiasm with the topic of my investigation strengthened my perception that I was indeed investigating a fascinating and relevant theme. This dissertation very much reflects the value of their contributions.

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As I argued above, the decision to move to the Netherlands was a hard one. This decision would have been even harder to make had I not had the untiring support of many good friends and relatives in Portugal. I owe a special word of thanks to the friends who encouraged me so vigorously to embark on this journey: Manuela, Rui, Paula, João, Nuno, Carla, Joãozinho, Dorita, Helena, Lúcia, Dinis, Filipe, Graça, Marcos, Daniela, Fernando e Raquel. It was reassuring that we managed to keep in regular and close touch, and that some of you did even find the opportunity to come over! I am very glad to feel that our friendship has not waned.

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This tale is not just of remembrance and recognition. It is also of reverence… Susana, no matter how artful you think I am with words, I still find it difficult to express how much your enduring love, care, strength, morale, enthusiasm, courage, patience, and cheerful humour have encouraged me to start our life here and to accomplish this demanding project. It is clear now that we are fond of demanding projects! Exactly five and a half months ago, the day I write this final piece, we have started our most challenging and yet fascinating endeavour… We have now a wonderful baby boy to care for! I hope that both you and our *Tomásje* will forgive me for all my long and unwanted absences in the last months…

CONTENTS

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time

T.S. Elliot
(Excerpt from 'Little Gidding', *Four Quartets*)

CHAPTER 1

General introduction

1.1 BACKGROUND

In the last decades of the twentieth century, particularly in the eighties and nineties, the importance of knowledge as a source of economic value received increasing attention across several disciplines, including Economics, Sociology, and Management Studies. Perhaps it all started when Nobel Laureate economist Friedrich August von Hayek's The use of knowledge in society was published in the American Economic Review in 1945. This seminal article constitutes a landmark in economic research as it assigns knowledge a central role in shaping the development of economic order. The economic problem of society, as Hayek formulates it, results from the need to ensure the most favourable use of knowledge resources, which are embodied in and distributed among discretionary individuals in an inescapably partial and often contested form. In this paper, Hayek argues that:

> 'The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate 'given' resources (…). It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality.' (Hayek, 1945, p. 519-520)

The recognition that knowledge, paradoxically, is both essential and limited in accomplishing purposeful action, has had a profound impact on various fields of social sciences, notably economics, sociology, and political science. In 1957, Herbert A. Simon, another Nobel Laureate in Economics, came to argue vividly against a then dominant assumption in economic thinking, that of an omniscient human rationality. In order to be able to redress the empirical limits on human rationality vis-à-vis the complexities of the world with which it must cope, economic and administration theory must take into account the principle of bounded rationality, which Simon introduces and defines as:

> 'The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behaviour in the real world – or even for a reasonable approximation to such objective rationality.' (Simon, 1957, p. 198)

Von Hayek and Herbert Simon, together with Fritz Machlup, Michael Polanyi, Edith Penrose, Daniel Bell, and Chris Argyris can all be seen among the chief precursors of the intellectual movement who in different ways and magnitudes have brought knowledge to the forefront of the economic and organizational thinking, in the wake of the Second World War. Ever since, knowledge has increasingly come to be recognised as a key factor in explaining differences in performance and achievement, both at a macroeconomic and microeconomic level. This increased attention has been related to and fuelled by a combination of interrelated factors. The proliferation of knowledge-based products and services as a component of GDP, the increasing number of knowledge workers on the labour market, and the shorter life cycles of products inducing more pressure on the knowledge-intensive functions of organizations, such as R&D, can all be seen as unmistakable signs of a knowledge-based order (e.g. Bell, 1973; Zuboff, 1988; Burton-Jones, 1999). This rising interest in the prospects offered by a virtually inexhaustible resource has also permeated the political agenda. The Lisbon Strategy, for instance, set by the European Union in 2000, is moved by the explicit ambition of making it 'the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'. In order to be able to accomplish this objective, European countries are expected to spend 3% of their GDP on research, and their R&D investment must have grow by 8% a year by the year 2010.

It should thus come as no surprise that social scientists have started examining the economic, social, psychological, technological, and managerial dimensions and implications of knowledge in a systematic fashion. This examination, whenever performed critically, has exhorted researchers to turn to long-standing philosophical debates in regard to the essence of knowledge, and how one should make sense of knowledge. In the field of Management Studies, this passion for knowledge has inspired the development of a knowledge-based view of organisations, which sees knowledge as the most important resource for organisational competitiveness (Grant, 1996; Spender, 1996a; Eisenhardt and Santos, 2002). This view has drawn attention to the competitive value of the knowledge resources, regarding these as valuable, rare, and hardly imitable and substitutable. This refocusing of the role of knowledge has had a significant impact on organizational and individual lives. It has led to substantial changes in the definition of work processes and practices, particularly in fields more dependent on individual and group expertise. In general, it has led to a reassessment of the principles and practices in the organisation of work, and to a call for changes in conventional management practices, now seen as inadequate in addressing the knowledge dimensions of work.

The principles and practices aimed at promoting the organizational status of knowledge revolve around the notion of Knowledge Management. Knowledge management can be seen as an interwoven set of policies, strategies and techniques intended to support an organization's competitiveness by optimising the conditions for knowledge exploitation and knowledge exploration via collaboration among employees (Davenport and Prusak, 1998). This highly ideational concept proved to be so successful that it became a hype, in which supporters could be found both in academia and in the managerial world. Their overlapping suggestions involved disclosing the value and the location of organizational knowledge, promoting its creation, its development, its sharing and its diffusion. This is no trivial exercise, however, as 'knowledge is a concept far too loose, ambiguous, and rich, and pointing in far too many directions simultaneously to be neatly organized, co-ordinated, and controlled' (Alvesson and Kärreman, 2001, p. 1012). Inevitably, the concept of knowledge management has been under fire for its lack of conceptual clarity (Styhre, 2003), and is seen, therefore, as a problematic (Swan and Scarbrough, 2001), oxymoronic (Alvesson and Kärreman, 2001), conflictual (Scarbrough, 1999), and fashionable notion (Scarbrough and Swan, 2001).

The recognition of the increased economic and organizational relevance of knowledge to countries, public sector bodies, research organisations, and firms has also led to calls for reporting, accounting, and auditing procedures in line with the particular knowledge-based categories of value. Discussions on ways to assess the organisational value of knowledge resources coalesce around such concepts as knowledge assets (e.g. Boisot, 1998), intangible assets (e.g. Kaplan and Norton, 2004), invisible assets (e.g. Itami and Roehl, 1987), human capital (e.g. Asefa and Huang, 1994), and intellectual capital (e.g. Edvinsson and Malone, 1997). The issue of specification, classification, and evaluation of intangibles, which has drawn academic, professional, organizational, governmental, and institutional attention, has crystallized around the all-encompassing and popular notion of intellectual capital. Therefore, this concern with measuring and reporting value creation in the knowledge economy has given way to a distinct disciplinary field, with an identifiable object, specific language and dedicated outlets in various academic fields (e.g. accounting, finance, organisation, management, industrial economics, and policy making). However, the dominant analytical frameworks aimed at quantifying manifestations and representations of knowledge have been mostly inspired by the principles of accounting and finance. There is thus cause for scepticism as to whether any of those assessment frameworks, however complex they might be, can realistically capture the essence and value of knowledge.

To sum up, for academics and practitioners alike, knowledge emerged as a bewildering and fascinating concept, whose appeal derives as much as from the recognition of its organizational value, as from the accredited difficulty to understand it or control it fully (Alvesson, 2004) Knowledge management advocates find themselves in a deadlock. That is to say, they are trapped between the *knowledge* and the *management* sides of the term. The tensions between the social production of knowledge and the organisational conditions that allow the assessment and appropriation of its value remain unsolved.

1.2 SCOPE

There are always several sensible options available when it comes to deciding the substantive subject matter of an investigation. Conceivably, the path leading to the delimitation of a research object worth devoting time, effort, and resources, is not arbitrary. It results from a painstaking, yet motivated assessment of purposes, conditions, and alternatives. Additionally, this delimitation needs to be significant both for the academic community at large, and for the individual researcher conducting the study in particular. Within the particular and broad field of management of knowledge-intensive work, any selection is open to controversy, given that knowledge intensity of work is a matter of degree. Any work is knowledge-based, unless performed by an automated machine (c.f. Alvesson, 2000; Thompson et al., 2001; Hislop, 2005). Knowledge intensiveness is conceptually vague, as 'all organizations and work involve "knowledge" and any evaluation of "intensiveness" is likely to be contestable' (Alvesson, 2001, p. 864). However, knowledge intensity is generally considered higher in professions where elements of knowledge creation, exploration, or development prevail, in comparison with those occupations requiring higher levels of knowledge utilization, exploitation, or application. The tensions and complexities associated with managing jobs mostly based on, for instance, knowledge creation, therefore, are considered to be more severe than those involved in the management of jobs involving higher degrees of, for example, knowledge application. As a result, an inquiry made into an organisational field where aspects of knowledge creation, exploration, or development are prominent will prove to be illuminating in that it will enable the complex notions of knowledge, management, and measurement of knowledge to show their true colours.

This study focuses on the substantive field of academic research management, as this constitutes an outstanding example of the management of a knowledge-intensive activity. Traditionally, academic research has been seen as an autonomous professional activity primarily aimed at the development and dissemination of knowledge for its own sake and for the improvement of human life. In its essence, the academic research process is

driven by 'gratuitness', which is to say, it is characterised by a disinterested and non-instrumental quest for knowledge advancement. Yet, this view on the scientific process, which resounds in the four institutional imperatives that define the modern ethos of science – universalism, communism, disinterestedness, and organized scepticism (Merton, 1973) – has been under sharp criticism. The massification of scientific research is fuelling the emergence of alternatives modes of knowledge production (for a thorough discussion see Gibbons et al., 1994; Nowotny et al., 2001). There is now sufficiently strong empirical evidence that indicates that a distinct set of cognitive and social practices surrounding the modes of knowledge production is emerging (Gibbons et al., 1994). A knowledge production mode that is more applied, transdisciplinary in its orientation, socially accountable and inherently reflexive is rapidly emerging and differentiating itself from the traditional, fundamental, disciplinary organized mode of knowledge production (Gibbons et al., 1994). Plausibly, irrespective of which knowledge production mode is involved, the activity of academic research can be seen as an inherently complex, unpredictable, and boundless type of knowledge intensive work that involves knowledge creation in perhaps its purest sense. Consequently, academic research management can ideally be seen as a managerial activity that aims at improving the effectiveness and quality of the knowledge production processes that define what academic research is all about. In order to be able to get as close as possible to the heart of the discussion – the point at which knowledge can be pursued as a lofty interest – this study examines only the management of publicly funded research, that is, research not financially dependent from, inspired by, or commissioned by commercial sources or interests. Four interrelated reasons account for this deliberate choice.

Firstly, an investigation into the practice of academic research management should allow the unravelling of the fundamental intricacies involved when imposing structure and purpose on a potentially purposeless activity (c.f. Fuller, 2002). It is hardly surprising that the conventional image of a solitary, truth-seeking, independent, and self-employed researcher often constitutes a self-image that leaves little room for management (c.f. Ernø-Kjølhede et al., 2001). At first sight, it may seem odd or even unpromising to explore management issues in a professional context in which management is believed to be in short supply. However, upon closer examination, it becomes clear that this popular belief is waning, as management thinking and concepts are now pervading the academic lexicon and practice. The economic recession that has affected industrial societies in the past few decades is challenging the amount of public funds formerly available for academic research, leading governments to persuade academic research organizations to make more use of management rhetoric and techniques (Broadbent and Laughlin, 1997; Ewan

and Calvert, 2000). Therefore, the developments taking place in the context of this specific field of inquiry represent an exceptional and privileged opportunity to glance into the intricacies associated with a management practice that has knowledge work as its primary object of attention.

Secondly, a study on the activity of academic research management can shed light on which specific conceptions of knowledge call for which particular management approaches. The way something is conceived affects the way it is dealt with and vice versa. Management is a social activity. What defines the function, the activities, and the various identities of management cannot be taken for granted and understood as something fixed and final, or meaning the same to everyone who is attached to the act of managing (c.f. Parker, 2004). Managing can be understood as a particular way of thinking and acting within organizations, which in itself cannot be completely inextricable from its object. Arguably, the concept of management is low in meaning without a specification of the object that defines and justifies its existence. The nature of the object of management, or how the nature of this object is perceived, defines the nature of management. Likewise, the way management is conceived and put into practice affects the way others regard its object. For instance, the design of work assessment and reward systems – which represents a conventional management prerogative – embodies a fundamental organisational strategic decision in research organizations: the distinction between warranted and unwarranted knowledge. This inquiry should enable an understanding of which knowledge manifestations are believed amenable to management influence or control, as well as an insight into how this process takes place.

Thirdly, an examination of the key activities involved in managing research includes an inspection of the specific mechanisms research organizations use to evaluate its soundness. This exercise should enable a refined understanding of the intricacies surrounding the problematic relationship between knowledge and its measurement. This relationship is not trivial, so it is argued, for at least two interrelated reasons. Firstly, the quantification of knowledge appears to be a strategy associated with the pursuit of objectivity, which can be understood as impersonal knowledge (Porter, 1995). Arguably, the practice of evaluation does not merely and objectively mirror the world. Instead, it can be seen as an administrative, political, and moral apparatus used to reconfigure performance norms, to tame subjectivity and to induce behavioural change. And, secondly, efforts to grade intangibles involve translating qualities into quantities, that is, to say, 'making the incommensurable commensurable' (Power, 2004, p. 776). It is important, therefore, to understand the challenges both posed to knowledge when it becomes amenable to measurement and to measurement when knowledge becomes its object. By exploring the rationale and the practices of

research quality assessment systems, the prospects and limitations of measuring intangibles can be explored.

Finally, a critical inquiry into how research managers work will provide a motivated perspective on a relatively uncharted and yet developing and fascinating territory. While academic research itself is frequently an object of study, the issue of its management remains an under-researched area (c.f. Harvey et al., 2002). The motivations for pursuing a particular research line come in many 'shapes and sizes' and, more often than not, these are difficult to articulate. The pleasures for discovering new relationships between ideas and concepts, for plotting out complicated connections, for chasing or solving puzzles, and for sorting out disagreements between experts, can all be seen as central and by no means illegitimate triggers of a research endeavour (c.f. Booth et al., 1995). It is fair thus to argue that the emotional engagement and attachment with a research topic plays no trivial role in this selection process. In this particular case, it is academically and intellectually challenging and rewarding to have the chance to delve into an under-explored and contested field of inquiry, such as the one that looks at possible connections between management and knowledge.

1.3 AIM AND METHOD

This research broadly looks at academic research management as a managerial activity whose ideological project does not substantially differ from that of knowledge management. The idea of manageability of academic research in a managerial sense is problematic because of the nature of knowledge that defines the nature of academic research. The complex, boundless, and unexpected nature of research work challenges the traditional management activities, such as planning and coordination. The problematic, conflictual, and potentially oxymoronic relationship between the concepts of 'management' and 'knowledge' should not discourage research in this field to progress, however. On the contrary, what is needed is more and better research. Within this realm, the central research problem inspiring this academic inquiry can be defined as:

> How can the possible sphere of managerial influence with respect to knowledge be conceptually understood in view of (a) the tensions, connections, prospects, and limitations that define this controversial relationship, and (b) in view of the adoption of organizational mechanisms aimed at distinguishing and rewarding warranted from unwarranted knowledge?

More specifically, this investigation aims at developing a theoretical understanding of how academic research managers conceive and go about managing researchers and research, in light of the recent adoption of a quality-based paradigm in academic research organisations. Although inspired by and rooted in contentious evaluation and discrimination principles, this paradigm is certainly influencing researchers' choices, priorities, and strategies. In order to be able to answer the central research question posed above, three auxiliary sub-questions will be addressed in the course of this dissertation.

1. How do knowledge management aspects surface in research management practice?

2. How can research managers' administrative missions be understood in view of researchers' needs for autonomy and discretion as key constituents in the quality of their work?

3. How do images of knowledge resound in the research managers' conceptions and practices guiding quality management in research organisations?

This leads to the methodological question of where answers for these questions can be found and how to go about finding them. Possible sources are extant theories, empirical data, or a combination of both. It is argued here that adequate theoretical guidance cannot be expected to come from the first possible source, the existing theories. Even if theories, models, frameworks, etc. exist which address the present research domain, it can be argued that sidestepping these theories or postponing a specific inspection of them, and therefore by abstaining from a full exploration of the accumulated insights, the inherent disputes and gaps, would be advisable. At the general level, the belief that knowledge is amenable to management and measurement surfaces in such notions as a knowledge-based view of organizations, knowledge management, R&D management, intellectual capital, etc. However, as will be more extensively argued in the next chapter, these theoretical sources appear to be of limited value for guiding research in the specific substantive domain of academic research management. One particular problem concerns here the contested character of both knowledge and management notions. Consequently, the potential sphere of management influence with regard to knowledge depends largely on managers' viewpoints and practices. At the substantive level, and as argued above, academic research management is an under-researched area. Studies addressing management at the levels where research is done, viz. the levels of organizations and research groups are scarce, notwithstanding a growing awareness of the important roles of

research organizations in establishing the form and content of research work (Morris, 2000; Whitley, 2000; Morris, 2002).

The relevance of a study is not assured just through the selection of a 'relevant' topic. The relevance also depends, in part, on the extent to which the perspectives of organization members are included in the research processes. Knowledge of what management in the particular domain is about, what it could be about, or should be about, depends, at least partly, on academic research managers' experiences, perspectives, and perceptions. Moreover, they are privileged carriers of the knowing associated with managing professionals whose ethos stands in stark opposition to management (c.f. Ernø-Kjølhede et al., 2001). Consequently, to ground inspiration for the theorizing that defines the research objectives, an empirical investigation has been performed of research managers' practices. Dutch research institutes operating within the field of business administration and management studies were selected as an appropriate site for this empirical investigation. The Netherlands provides an interesting setting for a case study in the domain of academic research management, because it takes a middle position between such countries as Germany, where signs of ex-post research performance assessment are only beginning to surface in research funding, and the UK, where the Research Assessment Exercise is fully based on such methods (cf. Geuna and Martin, 2003). What is more, in Europe this move towards the evaluation of all university basic research can be seen particularly in the United Kingdom and the Netherlands (Westerheijden, 1997). The choice to focus within the fields of business administration and management studies is in keeping with previous research interests in this domain (e.g. Huff and Huff, 2001; Starkey and Madan, 2001; Starkey et al., 2004; Muller-Camen and Salzgeber, 2005; Starkey and Tempest, 2005), which show that it is not only the possibly esoteric interest of this thesis' author.

The absence of solid theoretical guidance, the contestedness of the key concepts involved in the problem statement (knowledge, management, and knowledge management), as well as the relevance of participants' experience and viewpoints, justifies and leads to the selection of the grounded theory approach (Glaser and Strauss, 1967) as an appropriate method for this research. A more extensive substantiation of this methodological choice will be provided in the next chapter. The three motives above clearly resound in the logic of adopting the grounded theory method, which has acquired a canonical status in Management Studies (Locke, 2001). Locke argues that the method is useful for capturing the complexity of the context in which the action unfolds and to support theorizing of new substantive areas. Furthermore, she contends that the method links well to aspects of practice, enabling participants to gain a perspective on their work situation.

1.4 RELEVANCE

As argued above, both the selection of a research topic and the research questions it poses need to be of significance. The logical question that ensues from this statement is: Significant to whom and why? Evidently, the result of any study will matter differently to different audiences. Plausibly, academics and practitioners will judge the product of this research on the basis of their particular interests, expectations, and prejudices. Academics may well want to peruse this dissertation in order to identify clues for further research, to find ammunition in order to stress their standpoints, or to satisfy their intellectual curiosity or enjoyment. By contrast, practitioners are bound to look inside this book for hints that might enable them to reassess or redesign policies, frameworks, rules, and the like. While aware of the different expectations different audiences have, this research does not yet seek to please both of them equally. It primarily aims at theory development, rather than at offering blueprints to improve organisational design. In the field of management studies, there are several valid ways to go about developing theory (e.g. desk research, computer simulation, experiments, etc.). This investigation falls back on yet another academically accepted way of generating theory, that is, empirical research. Consequently, it is plausible to believe that some practical implications may well be drawn from its results. In the following section, the scientific and societal relevance is briefly discussed.

1.4.1 Scientific relevance

The central question that has characterized the greater part of the knowledge management literature is how knowledge and knowledge work can or should be managed (c.f. Alvesson and Kärreman, 2001). This conveys a rather functionalistic viewpoint, as the more fundamental question regarding the possible sphere of management influence with respect to knowledge has been largely sidestepped. This dissertation seeks to contribute to this relevant, yet incipient discussion.

The core problem this research aims to tackle – understanding which particular conceptions of knowledge inspire and justify particular conceptions of management, given a particular quality-paradigm – is rooted in and feeds into the developing literature on knowledge-based view of organisations (Grant, 1996; Spender, 1996a; Eisenhardt and Santos, 2002). This particular view on organisations, however, is not a robust theoretical framework, but a loosely-coupled set of notions concerning organizations as knowledge systems. Therefore, the research value of a knowledge-based view on organisations lies in supplying 'eye-openers' to possible connections, controversies, and conflicts between notions of knowledge and management, rather than in providing a firm theoretical basis for guiding inspection of how

specific knowledge-intensive activities are being managed. Arguably, the adoption of a knowledge perspective on organizations is more fruitful for *understanding* organizations and their management in a critical sense than it is for *managing* them.

The scientific implications of this investigation can be seen at two different levels. At a general level, the topic of this dissertation resounds in the tensions associated with the relationship between managerial control and professional autonomy. Goal orientation and accountability, as required by organisations, are often at odds with the professional ethos, which emphasises personal freedom and discretion. This represents a recurring theme within, for example, the sociology of professions (e.g. Freidson, 1984; Middlehurst and Kennie, 1997; Gleeson and Shain, 1999), and literature on the management of professionals (e.g. Dawson, 1994; Cohen et al., 1999; McAuley et al., 2000). Yet, at a substantive level, the research problem guiding this inquiry relates to critical studies on knowledge management (e.g. Alvesson and Kärreman, 2001; Schultze and Stabell, 2004; Hislop, 2005), organisational knowledge (e.g. Blackler, 1995; Cook and Brown, 1999; Hargadon and Fanelli, 2002), and management of academic researchers and research (e.g. Willmott, 1995; Harley and Lee, 1997; Barry et al., 2001).

1.4.2 Societal relevance

A conceptual study on the practices of academic research management, here understood as an archetypical expression of knowledge management, addresses concerns that lie well beyond the academic landscape. Two different levels of implications are here discernible as well.

At a general level, answers to the research questions posed above, can shed light into the organizational mechanisms aimed at rendering research work amenable to management and commodification. This issue strikes a chord with passionate discussions in society concerning the upsurge or a 'knowledge economy', that question, for instance, how knowledge-intensive workers can or should be managed, motivated and retained, or how to devise non-financial indicators that capture the value of knowledge residing in economies and organizations. The Lisbon Strategy, for example, indicates that concerns with the competitive value of knowledge are now being placed at the foreground of the European political agenda. The 'brain drain' of bright European researchers to the US has become a matter of serious concern to most European nations. 'Brain drain', a term coined by the British Royal Society, is defined by the Encyclopaedia Britannica as the 'departure of educated or professional people from one country, economic sector, or field for another, usually for better pay or living conditions'. Because of economical and political significance, this hot affair is urging European governments to

reassess the appropriateness and attractiveness of their research and science policies.

At the substantive level, this investigation relates to yet another hot topic in the European research agenda; the introduction in academic research organisations of selectivity arrangements, based on audits, accountability, and pay-per-performance principles, as a consequence of the shortage of public funding for financing academic research (e.g. Harvey et al., 2002). Once self-governing and self-regulating professional communities, academic research organisations are being now exhorted to publicly account for their choices, activities, and results. This is leading to a growing societal demand for researcher' performance management (e.g. Ewan and Calvert, 2000). Within this realm, this investigation may well prove useful in improving the understanding of the prospects and the limits posed by the adoption of a managerial agenda in academic research organisations.

1.5 OUTLINE

This dissertation has resulted from a collection of six academic papers, rather than from a single discourse. The research questions it poses will be addressed with varying degrees of emphasis. This investigation is exploratory in its essence. This implies that apart from the research topics addressed in Chapter Two, which is mainly theoretical, the themes addressed in the remaining five chapters could not have been foreseen at the outset of this study. Rather, they emerged from a systematic, open, and careful analysis of the empirical data. This outline, which has been done retrospectively, sketches out the scope of each chapter.

Chapter 2 addresses the question of whether the adoption of a grounded theory approach for guiding research on the substantive topic of academic research management is justifiable, given the contested character of the constituents of a knowledge-based view of organisations. The paper discusses the characteristics, appropriateness and implications of this methodological choice.

Chapter 3 makes a case for an understanding of academic research management as knowledge management. This contention draws on an empirical exploration and theoretical interpretation of how research management is defined, perceived, conducted, and how its effectiveness is perceived by research managers, by using the principles and techniques of grounded theory.

Chapter 4 explores how the performance management responsibility of research groups has devolved amongst those researchers working as managers, and how this can be understood and conceptualised in light of an increasing managerial agenda. The concepts of ambivalence and resilient

compliance are proposed to explain managers' abilities to redefine potentially adverse situations.

Chapter 5 examines the ways through which knowledge quality is perceived, justified, and scrutinised by academic research managers. By drawing on the inspiring, but also fragile conceptual status of quality, the paper seeks to unravel the reciprocal mechanisms through which research quality management both constitutes and represents research quality.

Chapter 6 argues that an understanding of the effect of knowledge management practices on motivation presumes an understanding of how motivation plays a role in knowledge aspects of work. An empirical exploration of research managers' concerns as regards the intricacies defining the motivation for research work, and yet amenable to their influence has been drafted.

Chapter 7 investigates how dominant conversational mechanisms can be used as social strategies informing the organization of knowledge work, as exemplified by the management of academic research. Talk is proposed as a powerful social strategy that enables research managers not only to accomplish management work, but also to act as vehicles for knowing brokering.

Chapter 8 discusses and reflects upon the main results and conclusions of this investigation. Given that each chapter has its own conclusions, which are able to stand on their own, the auxiliary research questions and the central research problem are revisited. A meta-reflection and a methodological reflection are further defined. Suggestions for further research are outlined as well.

CHAPTER 2

The need for grounded theory in developing a knowledge-based view of organizations

This chapter is in press as:

Sousa, C.A.A. and Hendriks, P.H.J. (2006). The diving bell and the butterfly: The need for grounded theory in developing a knowledge-based view of organizations. *Organizational Research Methods.*

2.1 INTRODUCTION

Perhaps it all started when Hayek's "The use of knowledge in society" was published in 1945 in the American Economic Review. It was then that organizational researchers started to pay special attention to the economic, social, psychological and epistemological dimensions of knowledge. Knowledge received high status as a key factor in explaining the differences between performance and achievement, both at a macroeconomic and microeconomic level. The knowledge-based theory of organizations (Grant, 1996), a specification of the resource-based view of the firms, sees knowledge as being the most important resource for competitiveness. Creating, acquiring, storing and applying knowledge are all considered to be fundamental organizational activities.

The notion of knowledge as an economic resource sparked countless articles, books and conferences during the past decade. This debate fitted a broader societal discussion on the role of knowledge and information. Bell's 'post-industrial society', Drucker's 'knowledge society' and Castell's 'network society' emerged as provisional umbrella terms aimed both at characterizing the rapid social, economical and technological changes which have taken place since the early 70s, and at translating their influence on individual and organizational life arrangements. These include substantial changes in work processes and practices, particularly in fields more dependent on individual and group expertise, which called for changes in conventional management practices. The urge to promote the organizational status of knowledge coalesced around the concept of 'knowledge management'. This concept proved to be so successful that it became a hype, in which supporters could be found in both academia and the managerial world. Their suggestions overlapped in purpose: disclosing the value and the location of organizational knowledge, promoting its creation, its development, its sharing and its diffusion. Perhaps the most interesting effect the popularity of knowledge management has had is its rejuvenation of older, but partly forgotten notions of organizational knowledge, its traits and potentials, and then combining these with new ones (e.g. Blackler, 1995; Tsoukas, 1996; Tsoukas and Vladimirou, 2001).

The developing knowledge-based view (KBV) of organizations offers new ideas and challenges for organizational research. The concept of knowledge, and following in its wake that of 'organizational knowledge', is surrounded by fevered disputes and fiercely opposing views as to its meaning (e.g. Styhre, 2003; Alvesson, 2004; Schultze and Stabell, 2004). Consequently, the KBV is not a robust theoretical framework, but a loosely-coupled set of notions concerning organizations as knowledge systems. To ensure that KBV notions involve a rich conception of knowledge and not, for instance, a merely

adapted notion of information, we should view them as invitations and guides for critical appraisal and not as robust guidelines for how to conduct research. In this paper we focus on a particular substantive research domain for which the adoption of a KBV appears legitimate and potentially fruitful, viz. the domain governing 'the management of academic research'. Academic research is an outstanding example of a knowledge-intensive area. Academic research involves knowledge production or knowledge creation in perhaps its purest sense. Knowledge creation is generally considered to be more knowledge-intensive than knowledge application. The tensions and complexities that are involved in managing jobs which are mostly based on knowledge creation are considered to be greater than in those jobs that involve higher degrees of knowledge application or exploitation.

In this paper, we focus on the methodological choice involved in research which views academic research management as knowledge management. Our starting point in discussing issues concerning research methodology is the sought-after draft of a knowledge-based view of academic research management. Developing a KBV perspective in research has arguably implications for the methodological aspects of that research. For instance, the socially-constructed nature of knowledge work and the problems associated with separating knowledge from action and knowing (Blackler, 1995) show the limits of using quantitative models here. Such models would only allow the development of insights concerning fixed categories of knowledge and thus would preclude a full understanding of the dynamic aspects of knowledge that are connected to its embeddedness in action. Thus, it should come as no surprise that many studies in knowledge-intensive organizations are exploratory in nature (e.g. Schultze, 2000; Lanzara and Patriotta, 2001; Tsoukas and Vladimirou, 2001; Orlikowski, 2002). The tentative and qualitative nature of these studies stems from the fact that, by definition, issues inherent to the processes of knowledge creation are not easily scaleable, surveyed, or even observed. However, developing and using a KBV along a qualitative research path is not a smooth operation either, although the inherent problems are of a different nature compared to those occurring along quantitative lines. The existence of scattered and often-conflicting notions of organizational knowledge and its management imply that the suitability of any of these notions for researching a particular domain is problematic. Grounded theory approach (GTA) offers a methodology that may be helpful here, as GTA generates theory, e.g. the specification of knowledge and of management concepts, through grounding, e.g. the conceptualization of the knowledge managers' practices and opinions.

The question we pose in this paper is whether GTA is suited as a methodological choice for supporting research on academic research management from a knowledge-based perspective. This leads to the question

of how a KBV connects to the methodological position involved in adopting a GTA. Does a GTA preclude a KBV or vice versa, could a KBV guide a GTA, should a GTA guide a KBV? In order to answer these questions, we discuss in the following section the major conflicts which characterize debates on knowledge management, knowledge work and academic research management. Next, we address the suitability of using GTA for studying academic research management as knowledge management. To that purpose, we discuss the principles and procedures of GTA, the contentious relationship between GTA and qualitative research methods and the sources of trust in the method. Afterwards, we address the suitability of a GTA in research on academic research management as knowledge management, based on the identification of criteria for assessing the appropriateness of methodological research choices. In the penultimate section, we examine the methodological connections between using GTA and the adoption of a knowledge-based perspective in research on academic research management. The final section gives the conclusions.

Jean-Dominique Bauby (Bauby, 1997), who suffered from a 'locked-in-syndrome', metaphorically depicted his mind as being active as that of a butterfly, although it was confined to a body which was as inactive as a diving bell. While doctors could only perceive tiny modifications in his motionless body, except for the blinking of his left eye, through the latter he could challenge that physically iron barrier, offering the world a rich and authentic impression of a lively mind beyond a dead body. His writings allowed researchers, for the first time, to have a first-hand account of such a disorder from the inside out. The metaphor also applies to the theme of this paper. While quantitative methods produce a numbered account of frequencies, variations, or trends from the researcher's perspective, qualitative methods allow the interpretation and/or conceptualization of complex processes from the perspective of participants' lived experiences. Both may prove useful, as they reveal different aspects of the same phenomenon, or even different phenomena. Yet, whereas descriptive and explanatory methods, both quantitative and qualitative, may inform us about how the *diving bell* is doing, a more fundamental and self-sufficient theory generation method, such as the GTA, is needed in order to perform the indispensable groundwork for revealing the *butterfly's* main concern.

2.2 MANAGING ACADEMIC RESEARCH WORK AS KNOWLEDGE WORK

2.2.1 Knowledge and management: A tale of tensions

Since 1995, knowledge management as made great headway as a management discourse, a set of practices and as an academic field of inquiry (Swan and Scarbrough, 2001). This perspective evolved from a resource-based view of organizations, which argues that the diversity, quality and inimitability of internal resources provides a better, more flexible, yet more enduring basis for defining strategy than the products or services these resources bring about. The notion of knowledge as the critical resource and source of competitive advantage, has led to the recognition that it should be managed more judiciously, effectively and systematically (e.g. Quintas et al., 1997).

Knowledge management addresses policies, strategies and techniques aimed at supporting an organization's competitiveness by optimizing the conditions needed for efficiency improvement, innovation and collaboration among employees (Nonaka and Takeuchi, 1995; Zack, 1999; Teece, 2000). Knowledge management authors and practitioners have put much effort into designing a broad range of interventions, both organizational and technological, which are aimed at promoting the effectiveness of knowledge processes such as knowledge creation, development, diffusion, sharing and protection (e.g. Davenport and Prusak, 1998; Probst et al., 2000).

The alluring nature of knowledge management has triggered ample interest across many fields. The insights obtained by academics and practitioners into this particular discipline are derived from diverse areas such as economics, philosophy, psychology, computer science and sociology (Earl, 2001). Now, just a few years after the knowledge management boom, its enthusiasts find themselves in the company of severe critics. All the articles published in a 2001 special issue of the Journal of Management Studies on *Knowledge Management: Concepts and Controversies* present knowledge management as an inherently problematic concept. They attempt to move knowledge management away from the normative conceptions that have dominated to date, conceiving knowledge not as something valuable in and of itself, but as fragile, politicized and dialectical (Swan and Scarbrough, 2001). These authors emphasize that the central question that has characterized the greater part of the knowledge management literature is how knowledge and knowledge work can or should be managed, while at the same time, skipping the more fundamental question regarding the possible sphere of managerial influence with respect to knowledge. This would suggest that the discipline has concentrated more on *process* aspects of management than it has on substantiating its *ability* trait.

Knowledge management is under fire for its lack of conceptual clarity (Schultze and Stabell, 2004; Thompson and Walsham, 2004). It is a bewildering, but also inspiring concept, which is at least valuable because it has sometimes fuelled heated discussions concerning the role of knowledge in organizations. The very concept of knowledge management reinforces the discussions surrounding the challenges that knowledge work poses for traditional management practice. One of its merits has been to place the tensions between the social production of knowledge and the economic conditions that allow the appropriation of its value at the centre of a wider debate.

2.2.2 Profiling knowledge work

What both 'knowledge work' and 'knowledge worker' mean is conceptually problematic (e.g. Collins, 1997; Scarbrough, 1999). All work by humans is knowledge-based. Any delimitation is inherently arbitrary and therefore contentious. Knowledge intensity of work is a matter of degree. When elements of knowledge creation (or exploration, development) prevail, knowledge intensity is generally considered to be higher compared to those jobs requiring higher levels of knowledge utilization (or exploitation, application). The knowledge components or aspects of work have implications for their status in the organizational context. Knowledge work is not easily amenable to managerial control, direction and prevision, and therefore poses substantial challenges to conventional management practices (Beyerlein et al., 1995; Scarbrough, 1996; Alvesson and Kärreman, 2001). These challenges are related to the innate characteristics of knowledge work and to the profile of knowledge workers.

A fundamental tension involved in knowledge work is that in an organizational context, knowledge, which in itself can be regarded as purposeless (Fuller, 2002) or – perhaps less debatable – not confined beforehand to an explicit set of purposes, is forced into programs of pragmatic goals, e.g. directed toward devising new applications, products or processes (Despres and Hiltrop, 1995; McDermott, 1995). Its unpredictable, multidisciplinary, non-linear and non-repetitive nature renders knowledge work problematic to management (Beyerlein et al., 1995). Knowledge workers tend to possess very individual drives for achievement, sometimes a stronger affiliation with a profession than with an organization, a great need for autonomy, a larger sense of self-direction, making them likely to resist the authoritarian imposition of views, rules and structures (Rosenbaum, 1991). Their major attributes include sensitivity to problems, a display of initiative, tolerance for ambiguity, intrinsic motivation and openness to new experiences, which often require a high degree of freedom in the workplace and non-material incentives (Krönig, 2001). Due to this multifaceted profile,

knowledge workers are best described in terms of a hybrid, composite portfolio of competencies and attributes (Tovstiga, 1999). While these insights may be insufficient to offer a comprehensive characterization of what knowledge work and knowledge workers are, they nevertheless illustrate why managing knowledge work is far from trivial.

2.2.3 The management of academic research as knowledge work

Research work is an inherently complex work process, requiring multidisciplinary expertise in order to achieve a complex synthesis of specialized cutting-edge technologies and knowledge domains (Purser and Pasmore, 1992; Tenkasi, 1995). In other words, research is highly knowledge-intensive work, making it highly suitable for studying it through concepts of the knowledge-based view and knowledge management (see Figure 1). Like other knowledge workers, scientists are typically sensitive, egoistic and exhibitionist and, therefore, they need to be managed carefully (Ahmad, 1981). Within the broader class of researchers, academic researchers are a particularly interesting group of mature knowledge workers. They perform their work in organizational settings that emphasize peer evaluation of performance and minimal administrative control. Their authority is to a large degree based on knowledge. They have a great need for autonomy and the outcome of their work, by definition, cannot be predicted accurately (Lambright and Teich, 1981). Researchers' work traits are bound to frustrate the conventional managerial imperatives of planning, organization, co-ordination and control (c.f. Scarbrough, 1999; Alvesson and Kärreman, 2001).

The management of academic research is complex because of intrinsic challenges and external pressures. Intrinsic challenges stem both from the profile of the workforce involved and from the nature of the work. Due to an alleged trend toward the 'marketisation' of research, research managers and researchers face external pressures in their work, with the introduction in the academic lexicon of managerial concepts such as 'optimization', 'efficiency' and 'accountability' (Cohen et al., 1999; Ewan and Calvert, 2000; Harvey et al., 2002).

Sufficient personal freedom and other essential conditions for creative work are at odds with goal orientation and accountability, as demanded by organizations (Lambright and Teich, 1981). What is 'good' for researchers may not be 'good' for research management and vice versa. As the professional ethos implicitly involves a degree of self-management (Scarbrough, 1996), the way researchers perceive *how* they are managed may affect their work behaviour and attitude. A prime source of tension here is the risk of divergence between perceptions of quality by management, as embedded in assessment and reward policies, and perceptions of quality among researchers (Cole and Cole, 1967; Ahmad, 1981; Lambright and Teich,

1981). One of the most critical problems of managing scientific work is that of evaluation, involving the assessment of quality and quantity, in addition to creativity and productivity (Cole and Cole, 1967; Ahmad, 1981; Lambright and Teich, 1981). Academic markets are defined more vaguely than commercial markets. Putting a 'price tag' on academic knowledge is difficult, if not impossible and sometimes counterproductive, because it impinges purpose on an intrinsically purposeless activity and confronts the loftiness of knowledge with such mundane concerns as deadlines and funding (Fuller, 2002). Consequently, there is cause for scepticism as to whether output measures, which stress quantifiable and accountable outcomes, can really capture the essence of researchers' work, while not impairing their professional interests and creativity (Ewan and Calvert, 2000; Harvey et al., 2002). Assessment systems may pursue different, but not mutually exclusive goals, such as control, feedback, reward, or stimulus. These may stimulate, but they can also frustrate work attitudes (Osterloh and Frey, 2000).

The idea of manageability of academic research in a managerial sense is problematic because of the nature of knowledge that defines the nature of academic research. Knowledge is a concept which is too loose, ambiguous, and rich. It points in too many directions simultaneously to be neatly organized, coordinated and controlled (Alvesson and Kärreman, 2001). Fundamental problems can exist in the relationships between research managers and researchers. The academic tradition is directly in opposition to management, for the image of the solitary, truth-seeking, independent and self-employed thinker is a self-understanding that leaves little room for management (Ernø-Kjølhede et al., 2001). Simultaneously, a trend towards more managerial influence on academic research can be noted. Some of the cherished truisms of scientific research seem to be no longer valid. The pursuit of knowledge for its own sake and for the improvement of human life, which characterized academic research up until the last quarter of the twentieth century, is under fire. Technological, economical and social developments are not only changing the way society and its institutions are organized, but they are also reshaping the purpose, scope, conditions, structure, funding mechanisms, etc. of academic research (Ewan and Calvert, 2000). Structural and institutional forces push academia away from the ivory towers. The necessity of managing limited amounts of public money more closely is leading governments to apply free-market principles to academic research, emphasizing 'audits' and 'accountability' (Ewan and Calvert, 2000; Fuller, 2001; Harvey et al., 2002). An additional pressure lies in the increased articulation of societal expectations concerning the ability of public research to contribute to solving societal problems, wealth creation and other forms of utility (Ernø-Kjølhede et al., 2001). Universities, public research centres and scientific researchers no longer control the definition and production of

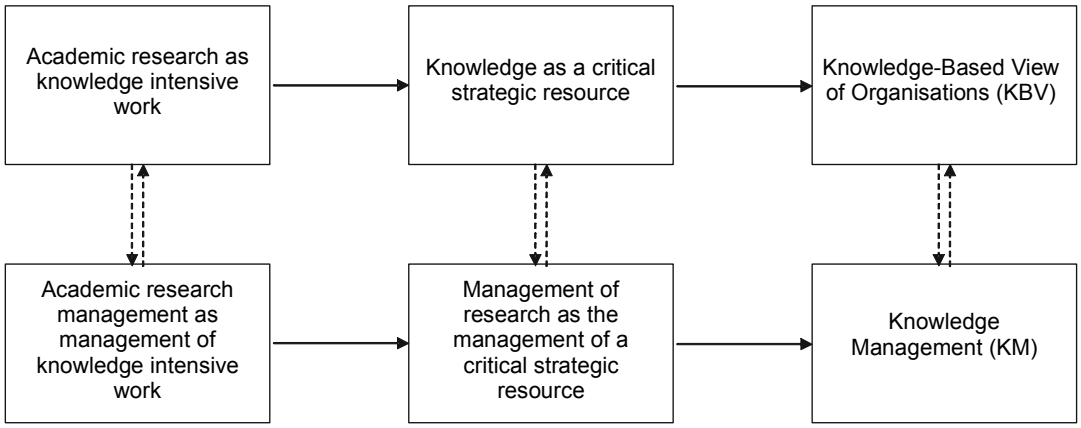

Figure 1 Academic research management as knowledge management

scientific knowledge by themselves (Ewan and Calvert, 2000). The changes involved substantially alter the way research is conceived, performed, managed, and evaluated. Particular trends can be noted towards a tendency for more performance assessment of academic research (Ewan and Calvert, 2000; Harvey et al., 2002).

Academic research management can be pondered upon many other ways than via a KBV perspective. One could focus, for instance, on the politics of institutional networking. Or one could look at R&D links, or trace the societal application of research findings. If we were to study any of these topics, we would be concerned with their structure and thus define hypotheses or prepositions to be tested or analyzed. However, by studying academic research management from the perspective of the management of knowledge work, at the interplay of the intrinsic challenges and external pressures addressed, involves and requires an alternative approach. The underlying idea is to develop and apply a KBV perspective on academic research management and explore those particular notions of management that offer a valid basis for a specific understanding of academic research work. Knowledge, therefore a KBV, plays a role in such research in two respects. Firstly, the object of research is knowledge of what management in the particular domain involves, what it could be about, or should be about. This implies that managers, as the supposed carriers of that knowledge, are a potentially useful and privileged source of information for the researcher. Secondly, the object of management in the domain concerns knowledge work. Therefore, management knowledge consists at least partly of a conception as to what the knowledge components of the work to be managed are and how these affect its management. By building and using a KBV in the domain of academic research management,

justice can be done to these two knowledge-based elements and their relationships.

2.3 GROUNDED THEORY APPROACH: PASSION FOR CONCEPTUALIZATION

Academic research management offers an interesting domain for research. Academic research has attracted considerable research attention (see the references in the previous section), although much less than the perhaps partly comparable, but certainly not identical domain of R&D in industry (Cohen et al., 1999). While academic research itself is frequently an object of research, the issue of its management still remains an under-researched area (e.g. Harvey et al., 2002). There are, certainly, many and different methods to assist researchers in examining under-researched areas. The selection of a method from a vast array of competing alternatives is not a trivial exercise, however. Rather, the choice of a research strategy is contentious because it involves a coherent body of key decisions regarding the ways, for instance, to collect, analyze and process data, which are, to a large extent, inextricable from the ontological and epistemological commitments of researchers (Johnson and Duberley, 2000). Moreover, the most relevant presupposition that should determine the methodological perspective of researchers is that methodologies are neither appropriate nor inappropriate until they are applied to a specific research problem (c.f. Downey and Ireland, 1979). The purpose of this article is not to facilitate a choice, but – less ambitiously – to assess the appropriateness of grounded theory approach (GTA) in guiding the inspection of the activity of academic research management, which is understood as knowledge management. In order to judge the suitability of this selection vis-à-vis our research problem in the following section, we would like to discuss in this section the key aspects that define orthodox GTA. We, moreover, shed light on the thorny and frequently misconceived relationship between GTA and qualitative research methods and we present briefly the sources of trust in the method.

2.3.1 GTA: Principles and procedures

Grounded theory approach (GTA) is a highly systematic general methodology used for the collection and analysis of any sort of data. Its purpose is the generation – not verification – of explanatory theory of basic common patterns in social life, by continuously comparing data (Glaser and Strauss, 1967; Glaser, 1978, 1998, 2001, 2003). GTA rests on the notion that the world is socially organized in latent patterns, which will emerge if researched properly (Glaser, 2003). A key concept to GTA is that of the 'main concern of participants' involved in a substantive area. GTA considers the continual

processing and resolving of that concern to be the prime mover of participants' behaviour (Glaser, 1998). GTA therefore aims at surfacing these latent social patterns via the conceptualization of the opinions, actions, etc. of these participants. GTA deals with the conceptualization of latent social patterns, not facts or individual patterns, as conceptualization transcends the routine perception of participants (Glaser, 2001, 2003). Understanding these social patterns accounts for the main concern of the participants, as this concern influences their behaviour (Glaser, 1998). In discovering this concern, GTA does not aim at an accurate description of participants' voices, but at an abstraction of both their doings and their meanings, that is, a perspective and conceptualization of their behaviours and of their voices (Glaser, 2001, 2003). As a result, the GTA concepts are abstract in regard to time, place and people (Glaser, 2001, 2003). Because GTA operates on an abstract and conceptual level, relating concept to concept, it can tap the latent structure that drives and organizes behaviour (Glaser, 2001).

GTA generates theory from minimum prior knowledge. As an inductive method, it seeks to discover theoretically relevant issues from data, rather than from existing theories, preconceived notions or professional interests. By entering a research field with as few predetermined ideas as possible, increases the theoretical sensitivity of the researcher (Glaser, 1978). This does not imply that researchers approach reality as a *tabula rasa*. A perspective will help them to see relevant data and abstract significant categories from the scrutiny of the data (Glaser and Strauss, 1967, p. 3). Since no researcher can possibly obliterate all the previously theories learnt, the trick is to line up what one takes as theoretically plausible with what one finds in the substantive field via an emergent fit (Glaser and Strauss, 1967; Glaser, 1978). However, the researcher using GTA must be aware that whereas preconception lends structure, therefore relief, it also derails relevance and fit, thus workability (Glaser, 2001).

We now turn our attention to the methodological steps that characterize GTA. The GTA method involves making a constant comparison between the data findings and the emerging concepts and properties. This systematic comparison is inspired by a permanent openness to the emerging concepts and to the potential relationships between them. Since concepts relate to concepts quite easily, GTA is capable of hypothesizing complex, multivariate patterns between categories and their properties (Glaser, 2003). The GTA method is structured along five stages. The research starts with *theoretical sampling*, that is, the process of data collection in which the researcher iteratively collects, codes, analyzes, memos and decides what data to collect next and where to find them (Glaser, 1978, 2001). This is the deductive part of the process. Deductions for theoretical sampling foster better sources of data, therefore better grounded inductions (Glaser, 1998). An initial open

coding, sample in all possible directions, is then replaced by a selective coding (Glaser, 1978), which not only delimits the data collection, but the concept proliferation as well beyond the needs of the theory, ensuring parsimony (Glaser, 2001). The theoretical saturation of a concept occurs when in both coding and analyzing no new properties emerge and the same properties continually emerge ensuring theoretical completeness (Glaser, 1978, 2001). The *theoretical coding*, which is the second stage, involves fracturing of the data incidents and grouping them into conceptual codes, by departing from the empirical level to reach the abstract level of hypothesizing relationships between them. The codes represent a condensed, abstract and transcendent view of the data that includes otherwise seemingly disparate phenomenon (Glaser, 1978). The theorizing write-up of ideas about codes and their relationships, as they strike the researcher while coding, represents the bedrock of the process of theory generation and defines the core stage process of *theoretical memoing*. While the codes conceptualize the data, the memos serve as a means of revealing and relating the properties of the substantive code (Glaser, 1978). The penultimate stage in the theory generation process – *theoretical sorting* – is the key to formulating the theory for presentation, as it consists of setting up the memos in a theoretical outline in preparation for the writing stage (Glaser, 1978). Lastly, the *theoretical writing* is about putting into relief the conceptual work and its integration into a conceptual and transcendent explanation of the relationships amongst the concepts (Glaser, 1978).

2.3.2 GTA *vis-à-vis* qualitative research methods: Another tale of tensions

Notwithstanding the canonical status that the classical text of grounded theory approach (GTA) has acquired in the domain of organizational studies, what constitutes GTA is by no means an unequivocal or uncontested issue (Locke, 2001). A particularly sensitive issue for orthodox GTA concerns the common and systematic attempts to label GTA as a qualitative research method (e.g. Charmaz, 2000; Locke, 2001). Labelling GTA as such is as logical as it is problematic. It is, on the one hand, logical as the title of the GTA seminal monograph – 'The discovery of grounded theory: Strategies for qualitative research' – unambiguously points the reader to that methodological stream. Besides, in their classical work, Glaser and Strauss (1967, p. 18) offer three key reasons which attempt to justify their interest in qualitative data. First, they argue that the crucial elements of social theory are often found best from data on structural conditions, consequences, deviances, norms, processes, patterns and systems. Second, they claim that qualitative research is frequently the product of research undertaken within an area beyond which few researchers are motivated to move. Lastly, they assert that qualitative research is often the

most 'adequate' and 'efficient' way to obtain the type of information required and to contend with the difficulties of an empirical situation. Inevitably, the use of GTA became particularly popular with qualitative data (Glaser, 1998, 2001, 2003).

Equating GTA with qualitative research methods is, on the other hand, also problematic, as it eventually results in weakening, blocking, eroding and thus default remodelling of GTA (for a thorough discussion see, Glaser, 2001, 2003). To put it briefly, qualitative research methods are driven by accuracy of description – or 'worrisome accuracy', as Glaser often calls it – whereas GTA is driven by data abstraction and transcendence, that is, conceptualization. Rather than a subtlety, this distinction has profound implications on how the different stages of the research process are handled and interrelated, and on how the credibility of a grounded theory is to be judged. As Glaser argues, because GTA is a general research method that can use any kind or mix of data, it is a fundamental distortion to argue that GTA is a qualitative research method (Glaser, 1998). GTA was not 'discovered', he adds, to foster a qualitative ideology. At the crux of the conflict, so Glaser argues, lie different ambitions. GTA looks for conceptual specification (Glaser, 1978) composed of integrated hypotheses, whereas qualitative research methods seek accurate description with or without conceptual description. The later methods are in service of interpretative and empirical descriptions, lasting accuracy, the data voice and its constructivism, rather than in service of abstraction, lasting conceptualization and multivariate interrelated conceptualized patterns (Glaser, 2003). Differently, by means of clear, systematic and extensive procedures, e.g. by careful line-by-line comparison of incidents and conceptualization of each comparison, GTA challenges what Glaser describes as the 'tyranny' of achieving full, accurate and precise description for the sake of reaching a conceptual level (Glaser, 2001, 2003). For instance, while qualitative research methods are traditionally highly context-sensitive (c.f. Van Maanen, 1979), in GTA 'context' must emerge as a relevant category just as all other categories, as it cannot be assumed as relevant in advance. While the quest for accuracy of description in qualitative methods is a respectable one, it is different from the GTA quest for conceptualization, which is an abstraction from data (Glaser, 2003). The most important aspect of conceptualization is that concepts are timeless in their applicability, whereas accurate descriptions are temporal and contextual (Glaser, 2003). As a result, deciding on either conceptualization or description may help researchers themselves to decide either use GTA or qualitative research methods (Glaser, 2001). In arguing that 'GTA and qualitative research methods are at odds with each other even though often using the same type of qualitative data' (Glaser, 2003, p. 2), Glaser implicitly suggests that because GTA stands alone as a conceptual theory generating methodology associated with, but independent from,

qualitative research methodologies, its merits should be judged by its own criteria. We will now review them.

2.3.3 Sources of trust in the GTA

The adequacy of a theory cannot be divorced from the process by which it was generated (Glaser and Strauss, 1967). Therefore, the criteria for judging or trusting the 'legitimacy' or 'credibility' of an inductively generated grounded theory cannot simply be borrowed from the deductive methods. The fundamental sources of trust in a grounded theory are fit, workability, relevance and modifiability (Glaser, 1978, 1998). *Fit*, which is another word for validity, is concerned with whether the concept adequately expresses the pattern in the data that it purports to denote. This is a key functional requirement of relating theory to data. *Workability* addresses the issue of whether the set of integrated and conceptually plausible grounded hypotheses sufficiently accounts for how the main concern of the participants is continually resolved. *Relevance* derives from the importance of dealing with what is truly important to those in the substantive area, that is, the main concern of the participants. *Modifiability* points to the notion that theory generation is an ever modifying process based on emergent fit, as the constant comparison with more data can modify the theory (Glaser, 1978, 1998). Modification sharpens and increases the plausibility of a theory and of its applicability, which in turn, increases its credibility (Glaser, 2003). Generally speaking, a theory that fits, that works, that is relevant, and that can be easily modified engenders trust in the method (Glaser, 1998).

2.4 IS GTA APPROPRIATE FOR STUDYING ACADEMIC RESEARCH MANAGEMENT?

Understanding the intricacies and benefits of a method is considerably different from understanding the conditions under which its adoption might be particularly useful. We believe that Glaser addresses this fundamental discussion unsatisfactorily in his works. The reasons he repeatedly offers for embracing GTA are shrouded in a fog of prophetic optimism and wishful thinking. For instance, 'Grounded theories have 'grab' and they are interesting' (Glaser, 1978, p. 4), 'Researcher's personal goal of originality and creativity craving explains why most researchers are into GTA' (Glaser, 2001, p. 100), or 'Choosing GTA rather than a qualitative research method is usually the need for and the promise of relevancy' (Glaser, 2003, p. 91). Unsurprisingly, perhaps, Glaser (2003) contends that a methodological choice is always arbitrary and typically a social-structurally induced appraisal as it is based on methodological commitments of a group and that 'doing GTA is usually a self-selection phenomenon' (Glaser, 2001, p. 18).

Since the logic of adoption of a particular method is a contentious, but crucial aspect in a methodological discussion, we now turn our attention to the excellent monograph of Karen Locke, which provides useful guidance here. She argues that the genesis of GTA rests largely in studies of professional work carried out in complex organizational settings and that the method is particularly appropriate for researching managerial and organizational behaviour (Locke, 2001). She identifies four circumstances that make using GTA particularly appealing for the development of process theories in those specific domains. The categorization proposed has been elicited from the analysis of published papers within the organizational research arena (for examples of GTA in organization studies, see Locke, 2001). This categorization is instructive and conceptually useful. However, we would still hesitate to justify methodological choices on the basis of one single reason, as we consider them to result from a painstaking and multifaceted assessment of purposes, conditions and alternatives. Glaser's work only shows traces of these conditions, in an unsystematized and haphazard way. Firstly, Locke argues that GTA is useful for *capturing complexity* of the context where the action unfolds, which better enables researchers to understand all that may be involved in a particular substantive issue. This reason is in accordance with the argument that researchers who use GTA want to discover what the problem is and what processes account for its solution, rather than assuming what should be going on, as required in preconceived types of research (Glaser, 1978). Secondly, she considers that GTA *links well to practice*, as it is especially useful to help organizational members gain a perspective on their own work situations. This argument is closely related to the idea that, due to its distinguishing explanatory power, GTA offers practitioners a new understanding and control over their actions (Glaser, 2001), as it puts a high premium on the relevancy of their experience (Glaser, 1998). Thirdly, she contends that the use of GTA is seen as *supporting theorizing of 'new' substantive areas*, because the naturalistically-oriented data collection methods in addition to the theory-building orientation permit the investigation and theoretical development of new substantive areas as they arrive on the organizational scene. With this respect, Glaser (1978, Chapter 10) provides various examples of new uses and new directions for GTA, inspired by the popularity of the classic GTA book. Finally, Locke argues that GTA is helpful for *enlivening mature theorizing*, as it has been used to bring a new perspective and new theorizing to mature established theoretical areas, enlivening and modifying existing theoretical frameworks. This argument connects well with the notion that a grounded theorist holds the prospects of generating a theory that both transcends and synthesizes the literature at the same time, as it takes on greater scope and depth than previous research (Glaser, 1998).

This brings us to the question that we formulated at the outset. Is it a good idea to use GTA in research inspired by a KBV, as exemplified by a knowledge-based examination of academic research management? Our answer is affirmative. We offer three interrelated reasons why we consider GTA appropriate for examining academic research management, underscoring that the case we make for GTA does not rest on the three arguments individually but on their combination. Firstly, there is a lack of solid and convincing theoretical guidance in existing literature on related subjects such as KBV, knowledge management, R&D management, etc. This lack encourages the sort of theory development that GTA typically supports. Secondly, the potential sphere of influence of managers with respect to research depends largely on their main concern. A conceptual understanding of their different viewpoints and practices will shed light on the underlying latent concern that accounts for their professional behaviour. This understanding draws heavily – if not exclusively – on the privileged and unique experience of participants, which is amenable to a 'perspective-based methodology' such as GTA (Glaser, 2003, p. 168). Thirdly, knowledge and management are enduring sources of conceptual confusion. We, as academia, do not claim to *know* what any of these concepts is; we seek to *discuss* what these concepts might be, while exploring the nature of the complex and potentially problematic relationships between them. Their value for research is closely linked to the broad variety of conceptions as to its nature. This requires the adoption of a method that makes good use of and relies on the ability of researchers to organize, to tolerate confusion, to make connections, to gain perspective on perspectives and to engage in matrix thinking, which GTA allows (Glaser, 2003, p. 131). These three arguments, which make a case for the adoption of GTA to be used in studying academic research management, can be associated with three of the four elements of Locke's logic of adoption presented above (see Table 1). Evidently, none of the reasons we present signals the fourth criterion for GTA adoption presented above – enlivening mature theorizing – as the focus of this paper reflects an under-researched domain. We now elaborate on each of these arguments.

2.4.1 Argument one: Deficient solid theoretical guidance

When theoretical frameworks are non-existent, inappropriate, undeveloped, or too general to account for the phenomena under study, hypothetical-deductive approaches are of limited use. This appears to be the situation in the case of academic research management. Guidance could come from basically two different sources. Firstly, the knowledge-based view of organizations and knowledge management literature. Secondly, the literature concerning work that shows resemblance to academic research, such as R&D

Arguments for adopting GTA		*Logic of adoption* (after Locke, 2001)
1	Deficient solid theoretical guidance	Support theorizing of 'new' substantive areas
2	Experience and the participants' viewpoints are vital	Links well to practice
3	Obscure conceptual meanings and relationships	Capturing complexity

Table 1 The logic of adoption of GTA to study academic research management

activities. These two sources still appear to of limited value for guiding research in the substantive domain we address here.

The knowledge-based view of organizations (Grant, 1996) (KBV) provides a general framework for understanding organizational competitiveness from a knowledge standpoint. Yet, it does not address the specific tensions that occur at a meso-organizational and especially at micro-organizational level. The knowledge management literature (KM), which adds the management aspect to a KBV, is in a broader sense diffused, vague, managerial and prescriptive. Articles addressing KM within an academic setting are scarce and mostly applied to library management (e.g. Townley, 2001), or to the relationship between university research, industries and government (e.g. Carayannis et al., 2000). Two management models and their confrontation have gained specific popularity in KM discussions, that of a community approach based on mutual coordination and that of a cognitive model based on normative control (Alvesson and Kärreman, 2001; Newell et al., 2002). Each model rests on a different epistemological appreciation of knowledge while object of management (see argument three in this section). The community KM model is based on the premise that knowledge is socially constructed, experiential, at least partly tacit, and transferred through participation in social networks. Therefore, this KM approach privileges knowledge sharing by means of encouraging socialization practices that may increase the proclivity to cooperation and trust (Newell et al., 2002). Differently, the cognitive KM model is based on the premise that knowledge equals to objectively defined concepts and facts, as well as on the assumption that it can be codified and transferred. As a result, KM aims here at codifying, capturing and commodifying knowledge, rendering ICT technologies a critical role (Newell et al., 2002).

Using the findings of the R&D field, the other class of possibly guiding studies, for understanding the nature of academic research management as

management of knowledge appears to be no less problematic. Literature on R&D management is mostly focused on the activities of industrial R&D departments, e.g. conditions encouraging innovation, creativity, networking, or interaction with the customers. Research in the R&D arena is mostly – if not always – financially dependent from, commissioned by or inspired by commercial sources and interests, however. These conditions may well be at odds with the idea of knowledge as a lofty, serendipitous and purposeless undertaking (Fuller, 2002). Therefore, management-related aspects such as control, funding, decision-making, performance appraisal, or motivation are probably perceived and experienced differently within an academic community (c.f. Cohen et al., 1999). For now, we just ignore how this is.

The conclusion we can draw from this is that there is no cumulated and unified body of knowledge concerning the management of knowledge work or academic research that exists to date to support the definition of sensible hypotheses to test in this domain. This theoretical insufficiency evokes the evolving and complex character of these kinds of activities, largely fuelled by the conceptual ambiguity surrounding the notions of knowledge, management and their potentially oxymoronic relationship (c.f. Alvesson and Kärreman, 2001). But it also reflects the recent upsurge in attention for a knowledge perspective on organizations and organizational practices. This deficient theoretical guidance should not prevent research in new areas progressing, however. If theoretical confusion is in evidence, the answer cannot simply be to 'drop the theory'. On the contrary, what is needed is 'more and better theory' (c.f. Tsoukas and Vladimirou, 2001). Such theory can gain in relevancy if it is conceptually inspired by data, which indicates the appropriateness of GTA.

2.4.2 Argument two: Experience and the participants' viewpoints are vital

We strongly believe that knowledge is inseparable from knowing subjects. If we look at the manifestations of knowledge, such as the knowledge aspects of managers' activities or descriptions of knowledge products in documents, this will inevitably lead to a second-hand account of knowledge. Therefore, we assume that all relevant information regarding management, knowledge as an object of management and their relationship is inextricable from the experience and perspectives of participants. In regard to the domain of academic research management, this implies that those who have a lived experience in the management of academic research should be involved in the theory development concerning this domain. Since research managers are the privileged bearers of this knowledge, the relevance of their contribution to the development of a substantive theory concerning academic research management becomes indisputably central.

It would seem safe to assume that not all academic research managers go about their jobs in the same way. Different managers will take on different perspectives as to the possibilities for managing and they will develop different activities to actually manage. Differences are bound to arise out of different educational, professional and socio-cultural backgrounds of research managers, in addition to differences in history, culture, norms, or the unwritten rules of their faculty, research school, university, country or region. Management is an ambiguous term, to which many different meanings are attributed (Tsoukas, 1994; Parker, 2002). Those who have, or are supposed to have knowledge of management are in a relevant, and perhaps better position to decide which intricacies are posed to the management of academic research and, consequently, to assess which meanings of the concept of management are the most relevant, as well as which issues are the most contested. Exploring the activity of research management may involve not only unravelling 'how things are', but it might also reveal research managers' perceptions of 'how things should be', both being shaped by their own particular understanding of academic research. This is highly relevant for the purpose of theory generation in the academic research management domain, as the way something is conceived affects the way it is handled and vice versa.

An alternative path – apparently safer, but certainly less relevant – would be to borrow a set of concepts, properties and indicators from existing general management literature and invite research managers, for instance, to fill in a questionnaire. We can think of theoretical issues that may have a connection to the activity of research management, such as 'motivation for knowledge work' (e.g. Osterloh and Frey, 2000), 'managerial control mechanisms' (e.g. Ouchi, 1979), 'leadership styles' (e.g. Lowe et al., 1996), or 'psychological contract' (e.g. Robinson and Rousseau, 1994). While we do not dispute their theoretical value, we may question their value to those involved in a substantive area under study. We should not totally discard the possibility that some theoretical notions may become self-fulfilling and independent of their empirical validity. Since their assumptions and language becomes ingrained and normatively valued, they can create the behaviour they predict (Ferraro et al., 2005). Therefore, what and why should we define beforehand, and on the basis of which criteria, what is relevant to the subjects of inquiry? Or, if we paraphrase Glaser, why forcing instead of trusting in emergence? If that were to happen, we would be demoting the relevance and genuine character of those participants' lived experience to force it into a set of preconceived notions. Whether these notions would do justice to the intricacies of their work and to their major professional concern and whether the results of such an inquiry would be of any use to them, are mere objects of speculation. To be able to develop a theory closely elicited from, but simultaneously conceptually abstract from data, makes it relevant both to the academic

community at large and to the subjects of inquiry in particular, reinforcing the appeal of GTA to guide the inspection of academic research management.

2.4.3 Argument three: Obscure conceptual meanings and relationships

The concepts of knowledge and management are not new. What is more recent, appealing and bewildering is the idea that knowledge can be managed (c.f. Alvesson and Kärreman, 2001). When individually considered, each concept remains an enduring source of fascination and incomprehension, fostering fevered academic disputes as to their multiple meanings and implications. Thus, it should come as no surprise that the idea that defines their combination - knowledge management – is also conceptually fragile.

Knowledge is typically a concept that throughout the history of philosophy and science has been surrounded by controversy. These controversies refer to the fact that many different schools of thought have developed their own views on the ontology and epistemology of knowledge, partly as explicit criticisms of other schools and partly in autistic seclusion. As a result, we can hardly claim to know what knowledge is, nor can we realistically expect that at some point in the future even trends toward reaching unanimity can be expected, as many different positions are conceivable. These can be ordered along a continuum with two extremes: knowledge is ascribed a purely objective or a purely subjective existence. From an objective viewpoint, knowledge should be treated as a set of various knowledge types that can be separated from other knowledge types (e.g. tacit versus explicit). From a subjective viewpoint, knowledge should not be treated as an entity in itself but as something that exists only through the social construction that produces knowledge, as elaborated within diverse organizational research traditions including Activity Theory, Cultural Perspective, Actor Network Theory and Symbolic Interactionism (e.g. Blackler, 1995). From such a viewpoint, knowledge and knowing are closely related. Knowledge is seen as something that does not exist separately from the activity of knowing subjects which ascribe meaning to their actions and reaffirm or transform meaning by and through their interaction and interpretations. Within the realm of organizational research, the connections between knowledge, action and organizations coalesce around the term 'organizational knowledge'. The relationship between individual and organizational knowledge is unclear, however. Basically, knowledge is organizational because it is generated, developed and transmitted by individuals within organizations (Tsoukas and Vladimirou, 2001). Whereas this notion is conceptually useful and intellectually inspiring, it does not give any clear guidance for understanding the conditions and the ways in which knowledge becomes organizational, if at all. Conflicting or perhaps

complementary notions associated with the organizational knowledge debate are abundant. For instance, the Cartesian-laden distinction made between tacit and explicit knowledge (e.g. Nonaka and Takeuchi, 1995), which draws heavily on the seminal works of Polanyi (1966; 1973), a typology which is based on a dialectical relationship between those two knowledge categories and the individual and organizational dimensions (Spender, 1996a, 1996b), or around attempts to substantiate the inseparable link between knowledge and the activity that constitutes it (e.g. Blackler, 1995). The later has inspired a conceptualization of organizational knowledge debates based on their epistemic nature (Cook and Brown, 1999). An epistemology of possession conveys the notion that knowledge resides in and is possessed by individuals and groups, whereas an epistemology of practice stresses that a separation of knowledge from the processes that produce it, ignores its situated, contested and mediated character.

The concept of management – central to organizational research – is, by no means, a less complex or unequivocal notion than that of knowledge or organizational knowledge. Management is an ambiguous term, for it is not always clear whether it designates a collective institutional process, or simply a set of individuals who are distinguished by the activities they carry out (Tsoukas, 1994). This conceptual ambiguity rests on the perception that there are at least three different senses in which the term management can be used. It can define the overall steering or directing of an organization (management as a function). It can also apply to the set of activities carried out in order to bring about the overall steering or directing of the organization (management as activities). And, it can also refer to the group of people responsible for steering or directing the organization by carrying out the various activities that make this possible (management as a team of people) (Watson, 1994). What defines the function, the activities or the various identities of management cannot, we argue, be taken for granted and understood as something fixed and final, or meaning the same thing to everyone who is attached to the act of managing (c.f. Parker, 2004). Managing can be understood as a particular way of thinking and acting within organizations that cannot be, in itself, completely inextricable from its object. The nature of the object of management, or how the nature of this object is perceived, defines the nature of management. Conversely, the way management is conceived and put into practice also affects the way others look at its object.

The conclusion we can draw from this is that none of these concepts presented above is sufficiently robust enough to account for the complexity of the phenomenon they seek to represent. The idea should be abandoned that these controversies cannot provide useful guidance for research. We argue, though, that embarking on a particular understanding of either knowledge or management is a risky, if not misleading strategy, as it may direct the attention

of researchers to aspects that might be beyond the participants' concern or understanding. In addition to this, it is plausible to assume that the combination of two conceptually ambiguous notions – knowledge and management in this case – does not make the picture any clearer. An inquiry on academic research management, understood as knowledge management, calls for methodological support that enables the complex notions of knowledge, of management and of management of knowledge to show their true colours. GTA is particular suited for this task, as its guidelines enable researchers to explore a substantive area of inquiry without any preconceived notions, thus promoting the emergence of the problems that account for the major concern of participants, at the expense of forcing these into their pet categories. While we argue that a knowledge-based view of organizations (KBV) informs this inquiry, we contend that this perspective is not at odds with GTA principles, as this is just that – a perspective – and not a set of preconceived professional notions embraced to guide or force inspection. In the following section, we shed light on this potentially contentious connection.

2.5 HOW DOES THE KBV COME INTO THE PICTURE?

How does the KBV perspective that is involved in understanding academic research management as knowledge management, come into the methodological picture? This issue is particularly relevant for a grounded theory approach (GTA), because the purpose and the timing for looking at extant literature is a sensitive issue for GTA (see, Glaser, 1978, 1998). Logically, four options can be distinguished (see Figure 2): (a) KBV may provide the sole basis needed to guide inspection, (b) it can provide guidance to justify or direct the GTA, (c) it may serve as a follow-up to a GTA analysis, (d) or it can be of no methodological significance. The arguments we present below make the case for option (c).

Option (a) stands for the classical hypothetic-deductive research approach. Hypotheses are derived from an established body of literature and tested on particular settings and against specific conditions. This option would presuppose KBV to have such a robust nature. However, a KBV lacks this theoretical vigour, as it simply involves a loosely-coupled set of notions concerning organizations as knowledge systems. As we argued above (see previous section, arguments one and three), KBV cannot provide a sufficient strong theoretical guidance to support the theorizing of new areas of inquiry by means of deduction, given the inescapable complexity of its central constituent, that is, knowledge. Since the knowledge involved in managing academic research can relate to different understandings of knowledge: embrained, embedded, embodied, encoded, encultured, contested, possessed

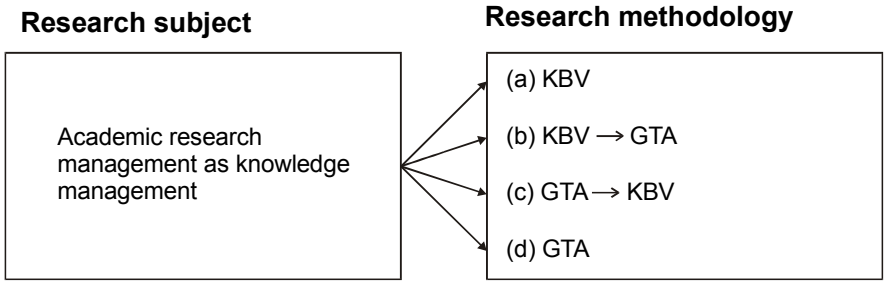

Figure 2 Combining a GTA with the KBV: The methodological dispute

or appropriable, tacit, situated, socially constructed, distributed, provisional, pragmatic, purposive, emerging, etc., any predefined choice to inform a KBV research would be conceptually arbitrary or constricted, if not inadequate to the resulting knowledge conception.

The inductive and non-verificational nature of GTA rules out option (b). This option would pay tribute to professionally preconceived or derived problems, grand theories, pet categories, and so on, precluding the emergence of concepts that would account for the main concern that participants are trying to resolve. GTA cannot be of any help whenever devotion to theoretical confirmation supersedes that of discovery. In addition, as we discussed above, the KBV does not have the theoretical status of a grand theory, which would add to the problem were this option to be embraced in order to guide the inspection of academic research management.

Option (d) lies outside the scope of this paper, as it would sidestep a KBV perspective. While researchers can avoid theoretical contamination by keeping theoretical notions afar, it is implausible to believe that they can delve into a substantive field of inquiry in a 'perspectiveless' manner. A perspective reflects the general way in which observers regards situations or topics. For instance, Glaser and Strauss were initially unaware of the concepts that emerged later, for example, 'non-scheduled status passage' or 'awareness of dying' when they examined how hospital personnel handled terminal patients in different hospitals (Glaser and Strauss, 1965). However, their decision to choose medical institutions as their research arena involved a deliberate or undeclared interest to study organizational phenomena inspired by and related to the organization of care. This was their ultimate underlying perspective. Likewise, deciding to examine the organization of academic research management rests on a conscious interest to investigate organizational activities defined by their special focus on the organization of knowledge activities. The KBV simply reflects this perspective.

In this paper we make the case for option (c). This choice, which was elaborated in the previous section, boils down to two of the arguments presented above, viz. the lack of sufficiently solid theoretical guidance of KBV

and related debates and the obscure conceptual meanings and relationships of two of its key constituents that is, knowledge and management. It is evident now that the KBV as a developing body of organizational theory does not derive its prime value in providing a solid theoretical framework useful for guiding research. However, despite GTA research can stand on its own, it should not necessarily stop after it has produced its own conceptual picture – the substantive theory – but, explicitly seek to contribute to the 'bigger enterprise' (Glaser, 1978, p. 139), that is, the formal theory. Sequential reinterpretation and theoretical embedding, as long as it is treated as more data and based on emergent fit, is mostly an essential element of research that adopts a GTA. Therefore, the extent of the potential contribution of KBV to a GTA research on academic research management cannot be fully established beforehand. As we argued above, theory generation for GTA is an ever modifying process based on constant comparison with more data, whatever their source and nature, which is likely to modify a theory, engendering plausibility, applicability and trust in the theory and in the method. Whether and in particular how will the KBV developing notions help modifying a GTA on the substantive topic of academic research management will depend on whether those notions can help increasing the conceptual understanding of the main concern that accounts for the research managers' behaviour.

2.6 CONCLUSION

Knowledge is a contested concept. It is contested in the sense that different people frequently have competing ways of sensemaking (diagnosis of problems, ways to solve problems, etc.), which may lead to heavy disputes among them, since knowledge is associated with power (Foucault, 1978). It is also contested in the sense that different individuals and different schools of thought use many different distinctions to come to grips with the concept, challenging the validity of the images of knowledge built by others. The multifaceted, controversial, ambiguous, dynamic and socially constructed nature of knowledge makes it escape framing by a set of measurable or verifiable constructs, which inevitably rely on fixed and predefined categories. These fluid qualities of knowledge turn the knowledge-based view of organizations (KBV, Grant, 1996) into a developing theoretical perspective concerning organizations as knowledge systems rather than into a robust theory amenable to support traditional hypothetic-deductive theorizing in knowledge-related areas of inquiry.

In this paper we make a case for the orthodox grounded theory approach (GTA) in order to guide the inspection and theory development on a substantive research domain that illustrates the value of a KBV, viz. academic

research management. Academic research represents a striking example of a knowledge-intensive activity. Consequently, the management of this activity exemplifies, at least partly, which knowledge aspects of the work are to be managed and how these call for or are amenable to particular management approaches. Academic research management is thus perceived as knowledge management. The appropriateness of GTA to examine such an under-researched substantive area of inquiry draws on three interwoven arguments. First, we consider that solid theoretical guidance within the realm of management of knowledge work is not only in short supply, but it also seems inadequate for supporting the definition of sensible hypotheses to test in this domain. The drive for theory generation – which typifies GTA – is especially appealing in fields where existing theoretical frameworks are too remote, abstract, inadequate or inexistent (c.f. Turner, 1981, 1983; Martin and Turner, 1986). Second, we argue that the experience and viewpoints of academic research managers with regard to management, knowledge and their relationship are vital to theory development in this domain, as we believe that knowledge is inseparable from knowing subjects. Therefore, if theory is to be relevant and useful both to the academic community and to laymen alike, theory generation should be intimately related with, though conceptually independent from data. Third, we contend that the concepts of knowledge, management and knowledge management are sources of conceptual confusion and fascination. Adopting any particular understanding of either knowledge or management would be not only an arbitrary and contentions choice, but it would also fail to recognize and account for the main concern and behaviour of research managers. Overall, these arguments link to the logic of adoption of GTA within the organizational research arena. GTA supports theorizing in 'new' substantive areas, it links well to practice and it enables researchers to capture complexity (Locke, 2001).

Research that considers the GTA as the necessary preparatory conceptual work for establishing the most relevant building blocks of a KBV can take advantage of the conceptual richness involved in the disputes on the nature of knowledge, management and their combination, rather than be limited or dictated by them. While we acknowledge that for GTA 'everything is data', we also consider that qualitative data are probably the most 'adequate' way of dealing with the inherently complex and controversial nature of managerial behaviour with regard to knowledge. Therefore, grounded theory generated from a combination of interviews with research managers, an analysis of official documents describing research policies, priorities, goals, assessment procedures, as well as the use of relevant literature via emergent fit, appears to be valuable for research on academic research management. The resulting research product may transcend existing bodies of literature on 'knowledge management', 'research policy', or 'R&D', integrating them into a new theory

of greater scope, or promoting the development of a substantive theory on academic research management. It can also help identify conceptually the different perceptions of research management, by providing a more informed basis for research policy development, or for strategic decision-making.

GTA offers well-developed and systematic principles and procedures for boosting awareness, parsimony and consistency across researchers and research settings. A grounded theory approach, in our view, has the potential to guide the construction of a KBV in organizational research without enforcing blinding dictates, as we have explored in this paper for the domain of research on academic research management. Or, to recap our initial metaphor, the grounded theory approach offers a valuable method for conceptually unravelling how academic research managers envision their *butterflies*, without imposing beforehand the *diving bells* that any set of preconceived conceptual schemata might involve.

CHAPTER 3

Academic research management as knowledge management

This chapter has been submitted as:

Sousa, C.A.A. and Hendriks, P.H.J. All in the family: Academic research management as knowledge management.

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3.1 INTRODUCTION

Academic research management is an appealing yet under-researched area (c.f. Harvey et al., 2002). It is appealing because the academic research tradition stands in stark opposition to management. The image of the solitary, truth-seeking, independent and self-employed thinker is a self-image that leaves little room for management (Ernø-Kjølhede et al., 2001). There is apparently a trend towards more managerial influence on academic research. Technological, economic and social developments are not only changing the way society and its institutions are organized, but are also reshaping the purpose, scope, conditions, structure and funding mechanisms of academic research (Ewan and Calvert, 2000). The necessity of managing limited amounts of public money more closely is leading governments to apply free-market principles to academic research, emphasizing 'audits' and 'accountability'. Particular trends towards more performance assessment of academic research can be noted (Ewan and Calvert, 2000; Harvey et al., 2002).

Such trends have led to an increased interest in various aspects of academic research work, particularly fuelled by the alleged emergence of alternative knowledge production modes (see Gibbons et al., 1994; Nowotny et al., 2001). Still, only a small number of studies examine the management of academic research at the levels where research work is done, viz. the levels of institutes and groups (notwithstanding the importance of such organizational arrangements in establishing the form and content of research work, see Morris, 2000; Whitley, 2000; Morris, 2002). For instance, Cohen et al. (1999) report that an increase in managerial pressures in public research institutes is dealt with through a renegotiation of the personal and professional interests of researchers. Ernø-Kjølhede et al. (2001) argue that the balance between managerial control and the individual autonomy of researchers might be found in a 'management for self-management' style, placing the managerial controlling task in the hands of the researchers. These studies are exploratory, as there is no established body of literature on the field and no substantial and systematic empirical work has been performed in academia. Besides, they reinforce many of the tensions, dilemmas and challenges that characterize the current academic debate (for an overview and critique see Trow, 1994).

The fragmented and sketchy understanding of topics associated with the academic research management practice calls for further theory-building. This leads to the question what theoretical and methodological guidance might be of use here. At first sight, theoretical insights from organizational knowledge and its management, as exemplified by the knowledge-based view of organizations (e.g. Grant, 1996) and knowledge management (e.g. Davenport and Prusak, 1998), might prove useful in suggesting possible new directions in this domain. Research management offers an outstanding example of the

management of a knowledge-intensive activity. Academic research is a timeless and innate type of knowledge-intensive work, and academic work involves knowledge creation in perhaps its purest sense. While 'knowledge-intensiveness' is a concept amenable to dispute (c.f. Alvesson, 2001), the tensions and complexities involved in managing jobs that are mostly based on knowledge creation are considered more severe than those involved in the management of jobs that involve high degrees of knowledge application.

Upon closer examination, though, the theoretical sources referred to above appear of limited value for guiding an investigation in the field of academic research management. In one sense, knowledge-based notions of organizations and management represent loosely-coupled, developing and contentious perspectives, rather than robust theories fit to support hypothetic-deductive theorizing. In another sense, the contested character of both knowledge and management makes any definition of sensible propositions to test in this substantive domain deceiving, to say the least. Knowledge 'is a concept far too loose, ambiguous, and rich, and pointing in far too many directions simultaneously to be neatly organized, coordinated, and controlled' (Alvesson and Kärreman, 2001, p. 1012). Management, too, is an ambiguous term, to which many different meanings are attributed. What defines the function, the activities or the various identities of management cannot be taken for granted, understood as something fixed and final, or meaning the same thing to everyone connected to the act of managing (c.f. Parker, 2004). Managing can be understood as a particular way of thinking and acting within organizations that is inextricable from its object. Consequently, the potential sphere of managerial influence with regard to research knowledge depends largely on the viewpoints and practices of research managers.

In this paper, the focus is on whether and, if so, how the practice of academic research management can shed light on the possible connections, prospects, tensions and limitations posed to management when knowledge becomes its object and to knowledge when it becomes subject to management attention. Here, grounded theory approach (Glaser and Strauss, 1967) might be helpful. This is an established organizational research method that seeks to generate theory – for instance, specification of knowledge and management concepts – through grounding, for example, the conceptualization of research managers' practices and opinions. In this paper, the principles and procedures of grounded theory approach are used to explore and develop a theoretical interpretation of how academic research management is defined and conducted, and how the effectiveness of such management is perceived by its proponents.

3.2 METHOD

The aim of this paper is conceptually to unravel the latent patterns that resolve the main concern and practices of research managers. For collecting and interpreting data, the research adopted a Grounded Theory Approach (GTA, Glaser and Strauss, 1967). This method, whose genesis rests largely in studies of professional work carried out in complex organizational settings, appears particularly appropriate for researching managerial and organizational behaviour. What is more, GTA is useful for support theorizing of new 'substantive' areas, because of the naturalistically oriented data collection methods (Locke, 2001).

GTA is a highly systematic methodology used for the collection, analysis and continuous comparison of data, whose purpose is the generation of an explanatory theory of basic common patterns in social life (Glaser and Strauss, 1967). Because of a perhaps somewhat uncritical heralding of the status of empirical data (e.g. Alvesson and Sköldberg, 2000), Glaser equates the method mostly with induction. However, even when the possibility of a theory-free, fully inductive approach is rejected, there is no need completely to refute the value of a GTA, as the principles of GTA fit well with methods of induction-informed abduction (Rennie, 2000). The theoretical concepts produced via GTA emerge from a continuous and abstract comparison of data incidents, rather than from existing theories. The constant comparison of codes, patterns, properties and associations, and the exploration of possible conceptual relationships should be inspired by a permanent openness to emerging concepts. Since GTA transcends the data to explain the theoretical preponderance of behaviour in a substantive area, it is abstract from time, place and people. The result is a theoretical contribution that fits (concepts express patterns in data), that works (concepts and their relationship account for the participants' main concern), that is relevant (it deals with the participants' main concern) and that is modifiable (as new data is analysed) (Glaser, 1978). These attributes can be seen as the four leading sources of trust in the method, that is, as the criteria through which the 'credibility' of a grounded theory is to be judged.

3.2.1 Empirical research setting, interview structure and data analysis

Two fundamental choices were made in terms of research design. First, only management of publicly funded research was included, that is, research that was not financially dependent on or commissioned by commercial sources. This allowed a focus on the management practices aimed at promoting knowledge creation in perhaps its purest sense. Second, the research was conducted in the field of business administration and management studies in

the Netherlands. Within this academic domain, research is organized predominantly by research institutes whose management structure comprises a director and programme coordinators. The former is responsible for delineating the overall research strategy and policy, while the latter organize research at the group level. Data collection took place between March 2003 and August 2004 and included institutes whose research programmes are explicitly organized around that research domain, namely the universities at Eindhoven, Enschede, Groningen, Maastricht, Nijmegen, Rotterdam and Tilburg.

The research-related documentation analysed (e.g. policies, themes and goals) enabled an understanding of how research is generally structured, at both the institute and the research group level. One of the researchers conducted twenty-nine in-depth semi-structured face-to-face interviews with respondents formally responsible for research coordination tasks. The interviews covered four general questions. First, respondents were asked how they conceive research management. Second, they were invited to reflect on how they conduct research management. Third, they were asked how and why research quality is measured. Fourth, they were asked what effects they expected the combined practices addressed in the first three questions to have on the work of researchers. The interviews took about two hours and were tape-recorded. The respondents were sent a concise transcription of their accounts for assessment.

Respondents' accounts were coded immediately and consecutively after the interviews in order to raise the theoretical sensitivity to emerging concepts. The codes offer researchers a 'condensed, abstract view with scope of the data that includes an otherwise seemingly disparate phenomenon' (Glaser, 1978, p. 55). In addition to the codes, an analytical elaboration of the meaning and possible relationships with other codes was explored in memos. The process of both coding and memoing is dynamic. This means that, since new data findings are constantly compared with similar ones from previous interviews, codes and memos are recursively reinterpreted and rewritten.

3.3 FINDINGS

3.3.1 Research management activities

The analysis of the interviews shows that academic research managers recognize three key activities in their work, that is: it should be aimed at stimulating and facilitating the work of researchers; it should protect researchers against unwanted managerial influences, an activity labelled here as 'boundary management'; and it should seek to profile the identity of the research group, both within the research institute and as a recognition mark

for outside parties. We shall now discuss each of these activities and how they emerged from the interviews.

Stimulation and facilitation

Respondents identified the leading research management activity as stimulating and facilitating the conditions for researchers to conduct good research. The idea of facilitating the work process clearly prevails over other management activities, such as controlling or directing. For instance, one programme coordinator suggested that:

> '… research management is an activity primarily aimed at facilitating, stimulating and motivating researchers to conduct and publish proper research.'

Providing researchers with the means to do good research appears to be the cornerstone of the research managers' activity. The means include infrastructure (e.g. room, computer), funds (e.g. money, databases) and research context (e.g. group meetings, research seminars). These conditions are meant to ensure not only that researchers have the appropriate physical and social conditions, but also that they are not distracted from their work by marginal occupations (e.g. bureaucratic tasks). To put it differently, research managers admit that they have to ensure that those enabling means are not wasted on time-consuming and unimportant activities. This idea is bound to facilitate the research managers' work, since it might reinforce their sphere of influence. As one research director put it:

> 'Facilitating the researcher's role is of pivotal importance not only for the researcher's performance, but also for both the process and the content aspects of managing research.'

However, respondents acknowledged that they could not directly influence individual research agendas. This is a result of a combination of researchers' traditional stubbornness and a strong individualistic research tradition in the field of the social sciences. Research managers emphasized their powerlessness either to change the professional ethos of researchers or to challenge the tradition of the academic communities to which researchers belong or wish to belong. One research director conveyed this idea as:

> 'Research programming in the business administration and management field is more difficult than in, for example, the physics or chemistry arena because there are no external drivers. The research topics are common and the interdependence between researchers is both technical and financial. To some extent, it would be desirable to adopt this research attitude also in our domain.'

The characteristics of the local research setting and the profiles of the research group and its researchers are bound to shape the type of management interventions as well as their perceived effectiveness. While providing researchers with funds and the infrastructure is essential for facilitating research, the development of a research context emerged as a more critical and problematic activity. Research management activities seek to facilitate the research processes, while creating a buffer to protect researchers from 'bureaucratic assaults'.

Boundary management

Developing a stimulating research context is aligned with the idea of defining the conditions for protecting this context from interventions that might hinder its development. The concept of boundary management conveys the image that research managers should protect researchers against organizational attempts to regulate and control. In other words, boundary management is needed to protect researchers from more management. One programme coordinator suggested that:

> 'Research managers should deal with the outside pressures likely to endanger the conditions for doing proper research, keeping them outside the research setting. Academic researchers are inherently embedded in professional bureaucracies. To do proper research, they should not be bothered too much with any kind of bureaucratic rules. Research management has to provide some sort of protection against these regulations.'

This suggests that the research manager should act as a mediator between the organizational demands for administrative control and the 'breathing space' researchers need for their work. Research managers seek to alleviate the bureaucratic burden. One programme coordinator elaborated this idea, suggesting that:

> 'A research manager has to protect researchers against the outside, against bureaucratic things, protect them against requests for teaching, make sure that their research time is concentrated, ensuring that they can work. This is related to the research managers' administrative skills.'

The notion of boundary management suggests a kind of divide between 'we' and 'they'. 'We' stands for the research group and its manager, while 'they' stands for the research institute. This notion is puzzling given that research managers also highlighted their problem with managing professionals who seek to have a voice in international debates. As one research director argued:

> 'Researchers tell me that their research groups are not part of their "system", because they have their colleagues and their discussions elsewhere around the world. This isn't nonsense; it creates tension between the worldwide localization of the processes of knowledge creation and the research groups I'm trying to manage.'

There is some ambivalence here in that, on the one hand, research managers seek to develop their groups within the local community, protecting them against the administrative load. On the other hand, they seek to profile their groups within the broad peer-review community, which is seen to limit their sphere of influence.

Profiling research groups' identities

Profiling research groups emerged as a key concern across interviews. The underlying idea is twofold. First, it is aimed at inverting the both loosely-coupled and individualistic working traditions that have characterized researchers in this academic domain. Second, it is aimed at reinforcing group coherency around a self-binding research focus, increasing commitment and funnelling work outputs. As one programme coordinator maintained:

> 'Researchers have little knowledge of each other's work. For instance, in a recent discussion within our group we realized that three researchers were unaware that they were reading about the same topic and were searching for the same thing.'

Researchers often behave as 'hobby seekers', it was argued, which creates a tension between their individual orientations and goals and those set by research institutes. Although research managers do not seek to dispute the weight of this professional culture, apparently they are trying to stimulate a common working ground through involvement. The strategy used is that of promoting a bottom-up definition of an umbrella focus that embraces the dissimilar research interests of the group members. One research director illustrated this by saying that:

> '… the existing research groups did not cooperate very much. They were a bunch of individuals, not really a team. We adopted a decentralized bottom-up approach to research management, and asked our top researchers to form their own groups. Our current groups reflect their choices, which have somehow stimulated teamwork. In terms of people, I have been putting much effort into the transition from group to team focus. In terms of content, my goal is to try to harmonize individual research agendas by developing local research programmes.'

The idea of explicitly imposing a research programme on researchers appears absent. Conversely, participative bottom-up schemes are expected to improve the outcomes of research groups and, consequently, those of the institute. As one research director suggested:

> 'We have small groups of people working on each research topic. This diversity of people and scientific interests might endanger the achievements of the research institute if there is no binding research focus.'

The collective development of a research focus results in a self-binding, and thus legitimized focus, as it derives mainly from the interplay between the different backgrounds, research perspectives and scientific orientations of a group's members. This allows researchers to find new opportunities to cooperate within their own research setting. Identifying a binding umbrella theme that epitomizes researchers' academic orientations reinforces the profile of the group. One programme coordinator illustrated this notion by arguing that:

> 'Without a research focus we cannot manage a research group. We have to develop a coherent focus together with the researchers. This actually works as a kind of loop: we have a research focus that directs the interests of the researchers, which helps them to conduct research together, which leads to output that can be discussed by the research group as peer review, and which might help in refocusing the programme.'

The development of a comprehensive research focus that embraces all of the researchers' fields of interest, while not impairing their room for manoeuvre, is expected to reinforce the group identity.

3.3.2 Main challenges

Boundless communities

The concept of the boundless community relates to the fact that the physical borders of the research institute do not define the work setting in which researchers operate and evolve to their full satisfaction. On the contrary, the local setting has flexible and porous borders, which affects how research managers both design and perceive the efficacy and scope of their practices. The research process is not confined to the interactions within the local research community. As one research director suggested:

> 'There is tension between the worldwide localization of the processes of knowledge creation, and the research groups I am trying to manage. Consequently, the faculty functions as a hotel, with a room, a chair, a desk, a

> telephone and a computer. Figuratively, they ask me to be a good hotel manager.'

For researchers, the national and international academic communities in which they seek to position themselves are synonymous with networking, fair peer-review and international scientific status. This idea soon emerged as a characteristic that evokes the limited scope of influence of research management. One programme coordinator conveyed this restricted influence as:

> 'Researchers are embedded in certain academic traditions and communities based on status and peer review, whose developments and changes inevitably affect them. Also, academic communities are international communities and not small communities in a local research setting. Researchers typically develop their own academic networks from which they get their peer-review assessment. Thus, the peer review is not bounded or demarcated by the institution. This implies that the peer review does not follow a hierarchical structure and that research management cannot fully control the work of researchers.'

The idea of a researcher as a player in a boundless arena seems partly to justify their loose organizational affiliation. Ultimately, this might be related to two types of status that seem to coexist. Research organizations, which have explicit, hierarchical and affiliation rules, confer a formal status on researchers (e.g. research fellow). The international peer-review community grants researchers an informal status (e.g. key participant in academic debates), based on tacit norms and a dynamic assessment of work relevancy. Researchers try to score in both arenas. On the one hand, they need formal anchorage to an institution that provides them with the infrastructure needed to carry out their work (e.g. room, salary, and career). On the other hand, they seek informal anchorage to a peer community that is likely to provide them with an external drive, recognition and an internationally conferred status.

Quality quest: Research quality as a contested affair

Respondents suggested that the debates about research quality are both provisional and ongoing, as quality perceptions are unavoidably controversial. Both researchers and academic communities construct unarticulated notions of what research quality is. This characteristic of quality as both an individual and a collective construction raises problems for research management. One research director illustrated this by saying:

> 'Often we know quite well that we've done a good job, even though it might be very difficult to understand or explain why. Everything else we can say about quality is circumstantial and indirect, which is not good for policy makers.

> Researchers know each other's status and quality ("who is who"). The concept is clear to everybody, though it is very difficult to measure it and take actions upon it, as is often the case in our field of work. This is a key element in managing research.'

The academic background and the quality notions of the academic communities where researchers seek affiliation shape the individual and collective quality notions. Since research institutes are often multidisciplinary groups of individuals, it is problematic to find a generally accepted notion of quality. One research director argued that:

> 'It is not a trivial task to define what good research is. What is good is what our society and our research communities consider good. However, this does not decrease the ambiguity of the term. The multidisciplinary profile of our research institute brings problems as to an accepted definition of "a good publication in a good journal". We do not have a common scientific background. The different academic backgrounds of researchers are reflected in their distinct scientific frames of reference, which also shape the kind of publications they consider good.'

While at the research institute level the definition of a consensual quality standard appears to be rather problematic, at a research group level this might assume a less contentious character. The reason is that in their search for identity, research groups are bound to define what they consider a good research output, conciliating scattered notions of quality. This definition is tied not only to the research goals they set, but also to the standards of the research community with which they seek affiliation. The high value put on the external peer-review quality assessment adds to the problem at the research institute level.

Quality quest: Imperfect local quality assessment

Respondents argued that the quality assessment mechanisms fail to discriminate between 'good' and 'less good' research. These mechanisms are seen to represent proxies to quality but not to translate quality as such. Research institutes sought inspiration in the SCI and SSCI journals as regards references to quality, which is perceived as a form of diminishing the ambiguity of the assessment. Yet, this does not eliminate it, especially in multidisciplinary groups. One research director argued that:

> '… researchers from the ICT field consider publications in conference proceedings just as valuable as publications in academic journals, claiming that their impact on the research community is both faster and more influential.

> Researchers from the mathematics or psychology field oppose this, claiming exactly the opposite.'

It is claimed that only peers can properly assess quality. Since the goal of academic research is to further knowledge on a specific domain, peer assessment should be used to reformulate and restate the researchers' contribution to science. The complexity of the peer-review assessment is not easily amenable to assessment instruments.

Motivating researchers

Respondents maintained that motivated researchers are crucial for improving research quality. What motivates researchers and what role research managers can play here emerged as key issues. It was argued that peer recognition plays a major role in the motivation of researchers. One programme coordinator suggested that:

> '… being asked to referee an article, to edit a special issue or to write a chapter for a book also motivates researchers.'

However, respondents agreed that motivation is not within the research institute's sphere of influence. In fact, despite considering it as critical, respondents suggested that motivating researchers is far too problematic. For instance, one research director suggested that:

> '… it is very difficult to motivate someone who is not intrinsically motivated to conduct research. We consider that a newcomer who is attracted by the research focus is already motivated when he or she is appointed. I also think it is not an easy task to keep researchers motivated, even if they are already motivated.'

Internally, research managers try to motivate researchers by developing an intellectually challenging research context. One programme coordinator suggested that:

> '… researchers are motivated by good discussions, good articles, good stories, and workshops.'

While another argued that researchers:

> '… are motivated by the chance to work together on a challenging and interesting topic and to see that that work leads to improving their own knowledge of that topic. It is a combination of working together and discussing research interests, gaining knowledge from that process.'

The development of an intellectually inspiring work context is intended to reproduce partially the dynamics and sources of the researchers' motivation, perceived as resulting from a subtle balance between intrinsic (virtually unmanageable) and extrinsic (partially manageable) elements.

3.4 DISCUSSION

Glaser (1978) reminds us that although a grounded theory can stand on its own, it should not be left in isolation, as it should contribute explicitly to the 'bigger enterprise'. Theoretical elaboration and embedding can thus be seen as essential elements of research that adopts a grounded theory approach. Given the apparent connections between research work and knowledge creation, below we use insights from the literature on organizational knowledge and knowledge management to discuss the potential theoretical value of the grounded concepts. Before turning to the knowledge connections that emerge from the empirical data, we highlight the key topics in the findings and discuss their implications for developing the largely uncharted field of academic research management. Subsequently, we explore how the data support sense-making via knowledge-based categories.

3.4.1 Practices of academic research management

Stimulating and facilitating the working conditions of researchers emerged as a leading research management activity. Promoting an inspiring work context also involves safeguarding the porous boundaries between researchers' work and bureaucracy; that is, it involves protecting researchers from more management. The notion of boundary management suggests that research managers are not passive consumers of management directives, but actively seek ways to confine their breadth and depth, in view of researchers' professional specificities. This effort also evokes the reflexive character of the managers' role, as most of them are simultaneously administrators and researchers. In one way, this twin identity inspires their management behaviour, as they are aware of researchers' needs, drives, concerns, expectations, etc. In another way, it blurs the traditional role distinction between the manager (who plans, organizes, coordinates and controls work) and the managed (who works). Profiling a research group's identity, which might result from joint initiatives (e.g. crafting a theme), appeared central to developing a meta-identity, a sense of belongingness that might increase the disposition to cooperate. In the process, researchers' individual choices are reframed – not curbed – under an overarching theme.

The practice of research management, with its focus on improving the effectiveness, quality and visibility of research, is accompanied by various insurmountable constraints. Research managers face three key challenges in

their work, all of which inspire their actions: boundless communities, quality quest and researchers' motivation. The notion of boundless communities illustrates the challenge faced by managers who are seeking to influence professionals whose career, goals, orientations, approaches, priorities, etc. are best understood in light of the evolving specificities of fluid research communities, rather than in view of local 'enablements' vis-à-vis 'constraints'. While essential for researchers' work, the latter aspects, which are manageable, are inadequate fully to explain their research choices and trajectories. These are often devised in line with the main beliefs and practices of particular broader, typically non-institutionalized communities, and in explicit opposition to the viewpoints of competing communities. While researchers' work might be strongly influenced by specificities of the organizational context (e.g. career structure, research budgets, assessment and reward systems, etc.), such institutional particulars certainly do not provide a solid limiting framework for research work. These arrangements cannot, for instance, fully define the nature and degree of professional networking. At most they can facilitate or reward specific forms of networking.

The adoption of an evaluative philosophy aimed at grading, comparing and rewarding the quality of research constitutes the second critical theme for research management. This theme, too, is a thorny one, because an uncontroversial definition of research quality is lacking. This evaluative move reflects dominant institutional perspectives and practices. Yet it is problematic, because adopting quasi-objective standards for assessing quality (e.g. SCI and SSCI impact scores) does not do justice to the different quality understandings of various research communities. While drafting a quality system is a managerial prerogative, the architecture chosen for such a system is not trivial. It justifies interventions that are likely to affect researchers' courses of action (e.g. pay-per-performance schemes) and, eventually, the outcome of their work. Research managers might support or might seek to modify, stretch or twist the terms of a quality assessment system, on the basis of its perceived ability to represent quality from the perspective of the communities they co-represent. Whenever this resonance fails to happen, research managers seem to invoke the situated character of quality to bargain for the recognition of alternative quality views.

The third challenge posed to the practice of research management is that of motivating researchers. Motivation is considered critical to research performance. Yet it is also seen as something that lies beyond research managers' direct sphere of influence. Intrinsic motivation and professional prestige, as exemplified by peer recognition, are believed to constitute the main sources of researchers' motivation. To the extent that peer recognition might positively affect intrinsic motivation, research managers seek to promote activities that bear a close resemblance to those in which prestige is

likely to flourish (e.g. discussion groups, peer review). This indicates that debate, scrutiny and explanation *in interaction* are seen as important motivational sources for research work, which clearly inspires the facilitating activity described above. Notwithstanding the fact that work motivation is seen mostly as a personal affair, this seems not to prevent managers from seeking ways to influence it. While motivation is seen as a potential, indirect and unpredictable consequence of some organizational activities and choices, this is believed to result from a subtle balance between intrinsic (virtually unmanageable) and extrinsic (partially manageable) elements.

3.4.2 The knowledge connection

As argued above, this paper focuses on understanding how the practice of academic research management can shed light on the challenges posed to management vis-à-vis knowledge. Given the apparent connections between research work and knowledge creation (e.g. Fuller, 2002), the management of academic research bears a close, ideological resemblance to knowledge management (KM), when that domain is conceived as predicated upon the possibly contentious or beneficial relationships between organizational knowledge and management. Insights from the KM literature and associated discussions of organizational knowledge are thus potentially useful for further sense-making of the GTA findings by exploring and expanding their theoretical implications. The purpose of linking to these debates as contributions to 'the bigger enterprise' involves the critical inspection of academic managers' practices and perspectives when interpreted via distinctions offered in KM-related debates. In line with the GTA way of thinking, the aim is to take a step back from any individual position in these debates – for instance, the critical 'against management' position of KM opponents and academic research management critics (e.g. Parker and Jary, 1995; Fuller, 2002), or the 'for management' attitude of KM cookbooks (e.g. Bukowitz and Williams, 1999). By linking to ongoing debates that fit under the broad KM umbrella, this part of the discussion simultaneously aims to sharpen these debates and to develop a critical sense-making of academic research management. The outlook of the second part of this discussion is not critical in the sense that it wants to inspect 'what the management mentality does to knowledge' (Fuller, 2002, p. ix) – however legitimate and relevant that question remains – but in that it wants to explore how the data more clearly connect to some of the distinctions in the KM-related debates.

The empirical findings of this study clearly show that the genesis of research management, however diverse in its 'shapes and colours', reflects a subtle balance between managers' mission and researchers' breathing space. In one way, managers are responsible for seeking to improve the effectiveness, quality and visibility of research. In another way, these managers recognize

that the research processes are subject to many influences and are inseparable from the 'context-action' interplay where they occur. The practice of research management appears to be inspired by the recognition that researchers' goals, orientations, approaches, motivations, priorities, choices, quality perceptions, etc. are not given or static, but resonate in the viewpoints and practices of their communities. The work reality of a research group is thus negotiated, framed and defined in interaction, rather than preset or imposed. Under the guise of formal arrangements, research groups can be seen as evolving close to the informal, ad-hoc, emergent and negotiated lines of the communities of practice (c.f. Brown and Duguid, 1991; Wenger, 1998). Academic research management thus emerges as a bewildering activity that is characterized by the need to provide a delicate mix of guidance and freedom, seasoned with the recognition of the inescapable challenges posed to that mix, which appear to be essential to its viability. The research manager emerges as a facilitator, that is, as someone who tries to set the general tone for working, rather than exerting direct control over work processes. In this way, research management comes close to the idea of 'shaping' rather than 'managing' (c.f. Ferlie et al., 2002).

In this context, academic research management can be seen as an activity broadly aimed at facilitating knowledge-creation processes by supporting social participation and cooperation. The separation between knowledge as something that is manageable and management that builds on some understanding of research knowledge appears to be artificial. The key to understanding research management is not to be found in the formal paper systems that explicate criteria for research quality, or in the rhetoric that heralds a 'knowledge competition among universities' nor in the need to 'define the niche for a research group'. Academic research management remains low in meaning outside the practices of managing by individuals who adopt the dual role of manager and researcher. A natural connection for making sense of academic research management as something KM-like is therefore offered by the 'social-practice' (Chiva and Alegre, 2005) or 'practice-based' approach (Hislop, 2005) to KM. This approach treats knowledge as an organic process, which privileges social interaction and intersubjective sense-making as a way to facilitate knowledge-creation and knowledge-sharing processes. This approach more or less explicitly embraces insights from a variety of theories, including activity theory (Vygotsky, 1962; Engestrom, 2000), actor network theory (Latour, 1987) and theories of situated learning (Lave and Wenger, 1991). It relates to what Cook and Brown (1999) define as an 'epistemology of practice', which stresses that a separation of knowledge from the processes, activities and contexts that produce it, ignores its situated, contested and mediated character (c.f. Blackler, 1995). The way managers go about organizing research work, clearly shaped by its prospects and

challenges, indicates that they think of research as an activity largely determined by and inextricable from a complex, fluid and dynamic socio-professional web of relationships and influences. Consequently, research managers seek within the organization (that is, within the faculty or department) to promote and reproduce the activities, norms, values and beliefs that resemble those of the communities they co-represent. This suggests that the practice of research management treats research work as processes whose latent possibilities and impossibilities are embedded in and inseparable from the context in which they develop, and from the social and professional activities through which they gain significance. In so doing, the practices of management, the practices of research, and the internal and external aspects that inspire these practices tend to intertwine in finely tuned ways. In this way, the practice of academic research management clearly resonates in and shows the theoretical value of a practice-based approach to KM.

The findings also indicate that interpreting research management via a practice-based approach to KM alone is not satisfactory. To a lesser degree, also elements of an objectivist (cf. Hislop, 2005) or cognitivist (Chiva and Alegre, 2005) approach to KM surfaced across research managers' practice. This approach to KM treats knowledge as an object or entity, which, consequently, becomes amenable to conversion, codification, transfer, utilization or commodification. It feeds into the neo-functionalistic mainstream thinking of KM as aimed at value optimization of knowledge as an asset (see Schultze and Stabell, 2004). This approach resonates with an 'epistemology of possession' (Cook and Brown, 1999), which represents the traditional understanding of knowledge as something residing in and possessed by people. Typical exponents of this approach to KM are Nonaka and Takeuchi (1995) and Davenport and Prusak (1998). Elements of knowledge as possession and associated objectivist management approaches pervade the discussions and practices that research managers engage in. Research managers are responsible for organizing the functioning of research groups against the backdrop of organizational arrangements that involve, for example, performance rules, procedures, expectations, goals and budgets, increasingly drawing on such managerial principles as 'efficiency', 'comparability', 'standardization', 'selectivity' or 'value for money' (c.f. Parker and Jary, 1995). Eventually, these principles are used to draft mechanisms that are meant to distinguish good from bad, positive from negative, desired from undesired, or warranted from unwarranted research knowledge (c.f. the quality quest). Inevitably, in their attempt to represent knowledge about the quality of the 'knowledge that is (organizationally) known', the quality management mechanisms rest on the belief that knowledge quality is amenable to objective scrutiny and measurement. This representational exercise, informed by an

'epistemology of possession' (Cook and Brown, 1999), clearly dissociates knowledge from the knowing subject, since it draws on physical manifestations of knowledge and not on knowledge as such. In so doing, the practice of research management inevitably involves elements of 'possession', as organizational interventions pertaining to research quality can be seen as informed by the urge to commodify its value.

What emerges from the empirical findings and from this discussion is that thinking of the management of knowledge as being driven by either 'practice-based' or 'objectivist' thinking is deceiving, to say the least. What the results of the empirical work show is that 'knowledge as practice' and 'knowledge as possession' approaches coexist in different and not always conflicting ways and magnitudes, that they are constantly exposed to many forces and influences, and that they influence often reflexively the various practices of management. This suggests that the practice – possession dichotomy is conceptually useful but empirically inadequate to draw a convincing picture of the prospects and challenges posed to management when knowledge becomes its subject of attention.

3.5 CONCLUSION

The challenges posed to academic research management as they surfaced in the interviews with research managers draw attention to the reflexive nature of this professional activity. The coexistence of different conceptions of knowledge and management highlights the prospects and constraints that surround managerial attempts to manage knowledge. The impact of cultural (boundless communities, quality quest) and behavioural (motivation) aspects in the dynamics of knowledge creation processes is crucial, yet difficult to determine. These aspects unpredictably affect the natural development of academic knowledge production itself, the organizational knowledge appropriation mechanisms, and the social and physical setting that affects how academic researchers sell their past endeavours or craft their future plans. While the challenges involved are beyond direct managerial influence, they inescapably mould the nature and impact of managerial actions. This study thus empirically supports the notion that an epistemology of practice is essential for understanding issues of management vis-à-vis knowledge. It highlights the need to embrace notions of knowledge as social practice when interpreting management activity that is aimed at steering or facilitating practices of knowledge creation. Furthermore, the data show that sense-making of management vis-à-vis knowledge needs to recognize and integrate epistemology-of-possession thinking into the overall picture. Epistemology-of-practice thinking is often developed in stark opposition to epistemology-of-possession perceptions. The notion of a generative dance between the two

stances, as stressed by Cook and Brown (1999), typically gets lost in the process. Even if an understanding of knowledge as a valuable commodity is inherently limited, it should not be forgotten that aspects of research knowledge that can be seen as possessions (manifestations, products, competences, etc.) provide meaningful elements in research management discussions.

While this paper adds to the discussions of academic research management and to the broader debates of management with respect to knowledge, it also has its limitations. The study was conducted in the Netherlands and solely within the fields of business administration and management studies. It would be interesting to contrast the theoretical concepts that emerge from this exploratory inquiry with those from research management approaches in other research streams, for example, in other social sciences (e.g. economics) and in the natural sciences, where the predicated 'Mode 2' knowledge production (Gibbons et al., 1994) might be more prominent. Investigations in different national contexts might help to focus the emerging picture. Although we fully acknowledge the problem of generalizing the findings presented here to other disciplines and settings, we should like to stress that, as shown in this paper, a grounded theory interpretation of academic research management practices appears fruitful for the ongoing debates on organizational knowledge and associated management. It produces a conceptually rich picture of the prospects and the constraints management faces when knowledge becomes its object, and of the tensions and limitations that knowledge endures when it becomes subject to management attention.

CHAPTER 4

Performance management as a negotiated accomplishment in academic research organizations

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4.1 INTRODUCTION

The economic recession that has affected industrial societies in the past few decades is challenging the amount of public funds once available for academic research (Middlehurst and Kennie, 1997; Harvey et al., 2002). As a result, governments have been persuading academic research organizations to make more use of management rhetoric and techniques. Concepts such as 'efficiency', 'performance measurement' and 'auditing' have invaded the academic lexicon (Broadbent and Laughlin, 1997; Ewan and Calvert, 2000; Ernø-Kjølhede et al., 2001). It should come as no surprise that many Western countries have been seeking to evaluate the quality of academic research, trying to assess 'value for money' in the use of public funds and to distribute them selectively (c.f. Middlehurst and Kennie, 1997). Inevitably, this changing environment has led many research organizations to put greater pressure on their researchers and to seek ways to manage them effectively. Two key developments are noticeable within this context. First, a mounting emphasis on the devolution of HRM responsibilities (e.g. discipline, development, appraisal and rewards) to research deans, heads of departments and research groups (Jackson, 2001). Second, it becomes increasingly manifest the urge to manage the performance of researchers (c.f. Ewan and Calvert, 2000; Harvey et al., 2002).

The alleged hostile nature of the changes underway to the so-called professional paradigm has been under sharp criticism (e.g. Wilson, 1991; Parker and Jary, 1995; Willmott, 1995). These authors argue that, in its essence, this managerial move is fuelled by the problematic principles of comparability and standardization, which will ultimately reduce the discretion used by academics as regards their work processes and outcomes. This is arguably at odds with their professional ethos, as one of its consequences is the introduction of 'selectivity' arrangements as a substitute for the traditional 'equity' schemes (c.f. Harley and Lee, 1997). The selectivity game involves a thorny distinction between 'losers' and 'winners', which may eventually reward behaviour that provides the greatest measurable visible output for the lowest risk and least effort (Willmott, 1995). Since selectivity draws on evaluation and on discrimination mechanisms, the other consequence of that managerial move has been that of the introduction of external surveillance mechanisms as a substitute for self-organizing principles. For instance, research quality falls now back on bureaucratised regimes of surveillance to ensure that it is achieved, labelled, and rewarded (Parker and Jary, 1995). This suggests that a subtle change in the professional culture of researchers might be shaping up, displacing their traditional discretion for self-regulation by organizational arrangements meant to account for e.g. their choices, activities, and results.

A particularly intriguing aspect in the domain of research organizations is that many of these new managerial duties have been devolved to renowned academic researchers, rather than to professional managers. Consequently, the issue has been here not so much about imposing professional managers in order to control researchers, but about identifying managers out of the research professionals (for examples in other professional settings, see Dawson, 1994; Fitzgerald and Ferlie, 2000; McAuley et al., 2000). Given that managers operating in professional organizations are usually either practicing professionals or of professional origin, this often represents a continuation of the principle of professional control, rather than a loss of autonomy (Freidson, 1984). This calls into question the alleged imminent managerial threats to the academic ethos. We believe that this situation constitutes an outstanding opportunity for examining how aspects of the managerialistic agenda are being assimilated, reconstructed and put into practice by professionals converted to managers. Within this realm, this paper provides a conceptual interpretation of the tasks devolved and undertaken by academic research managers that strike a chord with performance management activities. The purpose of this paper is to contribute to the theoretical debate concerning performance management in knowledge-intensive contexts (c.f. Fitzgerald and Ferlie, 2000; Molleman and Timmerman, 2003). The research addresses two main questions. First, how can the responsibility for the performance management of academic research groups devolved to research managers to be understood and conceptualised? Second, how can this conceptualisation be understood from the perspective of a growing managerial agenda? For each research question addressed, the research objective is to explore, to compare and to explain theoretically the principles and routines related to the activity performed by research managers operating within the terrain of business administration and management studies in the Netherlands. To meet this objective, the research provides a conceptually grounded interpretation of the viewpoints, experiences, practices, and concerns of the participants that account for their behaviour (Glaser and Strauss, 1967). In order to be able to answer the questions outlined, we discuss in the following section the emergence of new rhetorics within the domain of academic research organizations. Next, we examine the intricacies surrounding the performance management of academic researchers. Afterwards, we present the methodological approach, before elaborating on the findings. In the penultimate section, we discuss, relate and expand the theoretical implications of our findings with extant literature, answering the research questions posed above. The final section provides conclusions.

4.2 ACADEMIC RESEARCH: NEW CONDITIONS, NEW RHETORICS

Up until the last quarter of the twentieth century, academic research could be generally described as a professional activity primarily aimed at the development and dissemination of knowledge for its own sake and for the improvement of human life. While in general these attributes remain as valid as ever, economical, social and technological developments taking place in the context of a wider crisis in the welfare state and in global capitalism seem to have exposed this activity to substantially different and more instrumental configurations. The massification of higher education and of scientific research and the growing recognition of knowledge as a key resource for organizational competitiveness is fuelling the emergence of alternatives modes of knowledge production (Gibbons et al., 1994). Three important changes in this changing context are discernible. First, the lack of public funding for financing academic research has encouraged governments to persuade research organizations to adopt free-market regulation principles and practices, including those associated with 'audits' and 'accountability' (Harvey et al., 2002). Second, academic research organizations and researchers have lost the monopoly position they once held in the definition and production of scientific knowledge (Ewan and Calvert, 2000). Third, society has been questioning the ability of public research to contribute to solving societal problems, wealth creation and other forms of utility (Ernø-Kjølhede et al., 2001). Moreover, this is happening simultaneously with the explosion of the audits and rituals of verification (Power, 1997).

The changing institutional environment can be seen as being inextricably related to and embedded in the broader historical processes of social, economical and institutional development (Willmott, 1995). Since the changes underway appear to be neither temporary nor trivial, this is bound to reshape the practices of research organizations and, inevitably, those of the researchers. The adoption of managerial techniques, practices, and discourses in academia – once the organizational icon of intransient thinking – signals that new organizing notions are permeating the ivory tower. Barry et al. (2001: 89), for instance, argue that the idea of applying managerial strategies and techniques from the private sector to the world of academia can be seen as resulting from a 'process that attempts to transform what are seen as outdated institutional forms and practices of bureau-professionals'. The changes underway can also be interpreted as universities' isomorphic tendency to become similar to and comparable with other actors in the knowledge-production field (Czarniawska and Genell, 2002). While it can be argued that this tendency may vary in scope, degree and intensity across different national and disciplinary communities, it seems plausible to believe that the nature of the processes underway is likely to reshape the ways researchers perceive and

go about their work. There is, indeed, sufficient empirical evidence that indicates that a distinct set of cognitive and social practices surrounding the modes of knowledge production is emerging. A knowledge production mode that is more applied, transdisciplinary in its orientation, socially accountable and inherently reflexive is rapidly emerging and differentiating itself from the traditional, disciplinary organized mode of knowledge production (for a thorough discussion see Gibbons et al., 1994). Consequently, the coexistence of different modes of knowledge production is redefining the purpose, scope, conditions, structure, funding, and evaluation mechanisms of academic research (Ewan and Calvert, 2000).

The new modes of knowledge production are purportedly framed within tighter management styles and greater flexibility schemes. Inevitably, a new managerial rhetoric has entered the academic world. Audit, transparency, pay-per-performance, decentralization, or alternative funding bodies are now becoming common terms within academic settings. This new rhetoric proclaims the virtues of wealth creation, social welfare, impact, outreach, application, transfer, and dissemination. This suggests that a once self-governing professional community is being now exhorted to publicly account for its choices, activities and results. Stricter control schemes are now displacing former academic forms of control ingrained in a high-trust/high-discretion rationale (Wilson, 1991), and in self-discipline and peer reputation schemes (Parker and Jary, 1995). Not surprisingly, this perception of irremediable loss has fuelled heated debates. Wilson (1991), for instance, argues that academic work is being degraded and de-skilled to the point of becoming 'proletarianised'. Moreover, Parker & Jary (1995) introduce the term 'McUniversity' to convey the idea that principles of comparability and standardization underlie the managerial project in academia. Overall, an inexorable shift from 'collegiality' and 'equity' to 'managerialism' and 'selectivity' is believed to be steadily underway (Willmott, 1995; Harley and Lee, 1997). This shift is not trivial, however, as self-regulation is *the* attribute that distinguishes academic organizations from other professional organizations (Menand, 1996, emphasis added). Since academics have always had great discretion over their work, the chance that this move may inspire reactions such as resistance, accommodation, resentment or collusion cannot be fully discarded (c.f. Parker and Jary, 1995; Barry et al., 2001; Chandler et al., 2002). The reception patterns of these changes among researchers, while important in helping to understand the overall implications of the so-called managerial project underway are, nevertheless, beyond the scope of this article. We seek to examine, more modestly, how research managers conceive and carry out the task of managing research, in light of a growing demand for researchers' performance management (c.f. Ewan and Calvert, 2000; Harvey et al., 2002).

4.3 PERFORMANCE MANAGEMENT: A TALE OF HYPE OR HOPE

The effort spent in recent years to boost the contribution of individuals to the overall organizational success, while seeking to create a 'performance culture', has become known as performance management (Fletcher and Williams, 1996). The measurement and management of the individuals' performance are now seen as being critical to organizational development and survival (e.g. Den Hartog et al., 2004). These authors argue that performance management has evolved from a loosely-coupled set of practices aimed at measuring and adapting employee performance to become an integrated process aimed at positively affecting organizational success. While pointing to different aspects of organizational life, the concepts of performance management and of performance measurement are often used indistinctively (e.g. Glendinning, 2002), thus inappropriately. Some conceptual clarification is thus in order. Performance management can be seen as 'the range of activities engaged in by an organization in order to enhance the performance of a target person or group', whereas performance appraisal is the 'system whereby an organization assigns some 'score' to indicate the level of performance of a target person or group' (DeNisi, 2000: 121). The relationship between the two concepts is self-evident, though not trivial. The process of performance management involves managing employee efforts based on measurable performance outcomes (c.f. Den Hartog et al., 2004).

Performance management definitions come in many shapes and sizes. Performance management can be seen as involving the 'processes oriented towards coordinating and enhancing work activities and outcomes within an organizational unit' (Waldman, 1994: 34), or as 'a process that significantly affects organizational success by having managers and employees work together to set expectations, review results, and reward performance' (Mondy et al., 2002: 555). It can also be associated with 'an approach to create a shared vision of purpose and aims of the organization, helping each individual to understand and recognize their part in contributing to them, and in so doing to manage and enhance the performance of both individuals and the organization' (Fletcher and Williams, 1996: 169). And, performance management can be defined as a 'interlocking set of policies and practices which have as their focus the enhanced achievement of organizational objectives through a concentration on individual performance' (Sisson and Storey, 2000: 87). All in all, performance management notions appear to rest on the belief that the definition of a viable, assessable and 'rewardable' work agenda within a system of shared beliefs contributes to organizational success. Discerning good, desirable, or attainable performance involves negotiating over means and ends, and adopting appraisal and reward schemes aimed at encouraging a particularly favoured behaviour.

We believe that the apparently dominant, positive and unifying character of the notion of performance management is not trivial when applied to the domain of knowledge-intensive work. The essentially unpredictable and non-linear character of knowledge work, of which academic research is a prime example, is bound to challenge the conventional managerial imperatives of planning, organization, co-ordination, and control (c.f. Alvesson and Kärreman, 2001). It should thus come as no surprise that one of the most critical problems of managing scientific work is that of evaluation, involving the assessment of quality and quantity, in addition to creativity and productivity (c.f. Cole and Cole, 1967; Lambright and Teich, 1981). Academic research management can be broadly defined as an activity aimed at improving the effectiveness and quality of research outcomes. The principles of academic research management can thus surface in activities that involve the organization of research themes (specialization), the setting of research goals and deadlines (prioritisation), the introduction of quality assessment systems (evaluation), and the allocation of research resources based on performance indicators (discrimination). In other words, the principles informing the management of academic work bear a clear resemblance to those of performance management. The process of examining the principles and practices of research management appears thus to be an appropriate way for understanding how the urge to manage the performance of researchers is being assimilated, reinterpreted and adapted.

4.4 METHOD

In this paper, we pose the question 'How can the management of the performance of academic researchers be understood and conceptualised?' A valuable source of theorizing lies here, so we argue, with the perceptions of the key players involved in the activity of research management, that is, academic research managers. We strongly believe that all relevant knowledge regarding the intricacies of academic research management cannot be extricated from research managers' experience and perspectives. Since they are the privileged bearers of this knowledge, the relevance of their contribution to theory development becomes indisputably central. The grounded theory approach appears particularly useful to guide this inspection, as it puts a high premium on the relevancy of participants' experiences, opinions, actions, etc. (Glaser, 1998). The method, which has acquired a canonical status in the domain of organizational studies, is also useful for capturing the complexity of the context where the action unfolds while enlivening mature theorizing, as it brings new insights to established theoretical areas (Locke, 2001).

4.4.1 Empirical research setting and interview structure

In this study, we have only examined the management of publicly funded research. We deliberately sidestepped the inspection of contract-research, that is, research commissioned or inspired by commercial sources or interests. This choice enabled us to concentrate on the research mode that has been under sharper societal scrutiny, making it increasingly amenable to the managerial rhetoric and practice. The study was conducted in the field of business administration and management studies in the Netherlands. Within this field, research is organized by research institutes whose management structure comprises a director and programme coordinators. The former is responsible for the overall research strategy and policy, whereas the latter organize research at the group level. The alleged devolution of responsibilities referred to above is noticeable here. Since the early 1990s, professors and senior researchers have been made responsible for organizing the functioning of research groups. In general, they must seek to enhance the performance of their groups, which leads to a reassessment of aspects such as research themes, priorities, activities, goals, and resources vis-à-vis output.

Data collection took place between March 2003 and August 2004 and included institutes with research programmes explicitly organized around that particular research field: the public universities at Eindhoven, Enschede, Groningen, Maastricht, Nijmegen, Rotterdam, and Tilburg. The research-related documentation (e.g. policies, themes) was analysed in order to gain an understanding of how research is formally organized. One of the researchers conducted twenty-nine in-depth semi-structured face-to-face interviews with respondents responsible for research coordination tasks. The interviews covered three general questions. Firstly, respondents were asked how they conceive research management. Secondly, they were invited to reflect on how they conduct research management. Thirdly, the question was put to them as to how and why research quality is measured. The interviews took about two hours and were all tape-recorded. The respondents were sent a concise transcription of their accounts for assessment.

4.4.2 Data analysis

The data from the interviews were analysed using the constant comparative method of grounded theory (Glaser and Strauss, 1967). Grounded theory is an inductive methodology used for the collection, analysis and systematic comparison of any sort of data. As an inductive method, it seeks to discover theoretically relevant concepts from data, rather than from existing theories. The purpose is the generation – not the verification – of theory used in describing and explaining basic common patterns in social life (Glaser and Strauss, 1967). The method aims at surfacing the latent patterns that account

for the main concern of participants, since its continual processing and resolving is the prime mover of their behaviour (Glaser, 1998). The sources of trust in the method amount to four interrelated aspects: fit (concepts express patterns in data), workability (concepts and their relationship account for participants' main concern), relevance (concepts deal with participants' main concern), and modifiability (concepts may change as new data is analysed) (Glaser, 1998).

Respondents' accounts were coded immediately and consecutively after the interviews. The constant comparison of codes, patterns, properties, associations, and exploration of possible relationships between concepts was analytically explored in memos. The process of both coding and memoing is dynamic. This means that, since new data findings are constantly compared with previous findings, codes and memos are recursively reinterpreted and rewritten.

4.5 FINDINGS

In this section, we first elaborate on the theoretical key concepts that define the activity of academic research management, which resulted from the responses to interview question one ('How do you conceive research management?') and interview question two ('How do you conduct research management?'). Next, we explore the perceptions research managers displayed towards the basic pillars of performance, that is, quantity and quantity, which resulted from answers to interview question three ('Why and how do you measure research quality?'). The aspect of 'quantity', although not directly addressed, emerged during the interviews in association with this question.

4.5.1 Framing the tasks of research managers

The main task assigned to research managers is that of coordinating the activities that can enhance the performance of the researchers in the group. Their mission is to develop initiatives that directly or indirectly may help increase the quantity and quality of the research output, according to the adopted performance criteria. While the organizing styles vary across the sample, the comparative analysis of the interviews and of the documentation indicates that their tasks coalesce around two intertwined key concepts, which we define as 'sponsoring' and 'profiling'. Sponsoring represents the action of stimulating and facilitating the research work, whereas profiling represents the drive to develop the identity of the research group. We now discuss each of these concepts as well as their constituents. The quotes provided have merely illustrative purposes. They are not meant to offer an accurate description of research managers' voices, which is at odds with the principles of the grounded theory method.

Sponsoring

Sponsoring emerged as a central activity of the research managers interviewed. It pertains to the attitude of promoting the development of propitious conditions for carrying out research. To a certain degree, the scope and magnitude of this responsibility seems largely dependent on the research managers' personal characters such as the bargain ability or ambition. This concept comprises two main aspects, which we subsequently label as 'facilitating research processes' and 'boundary management'.

Facilitating research processes

The leading task of research managers can be defined as that of facilitating and stimulating the processes for doing good research. This task is perceived as prevailing over other controlling-laden management functions. As one research director suggested:

> 'Research management is about trying not to manage too much. It is about creating the proper incentives and the proper structures so that people can do research (…) I try to create the right atmosphere, ensuring that everything that should be done in order to enable research is taken care of.'

While another research director straightforwardly stated:

> 'I do not believe in managing research apart from facilitating the process of doing research.'

Enabling researchers with the physical, the social and the financial means to work seems to be at the cornerstone of research managers' facilitating concern, as these conditions are seen as indispensable to furthering the research processes. The emphasis on facilitating the process rather than assisting in the content side of research stems from the perceived limited influence on individual research agendas. This recognition results also from the traditional solitary work modes of the researchers working within this academic terrain, which is perceived as a community-dependent aspect that largely determines the pace and the value of work outputs. As one research director exemplified:

> 'In the natural sciences, it is virtually impossible or unthinkable that an individual researcher (senior and junior) plays an isolated role in the knowledge creation process. There, it is always the team that in different shapes and sizes will make the real progress.'

Research managers seek to create propitious conditions for doing research, while at the same time they create a negotiated and negotiation space, a sort of buffer, for protecting researchers from unwanted bureaucratic demands, a task we designate as 'boundary management'.

Boundary management

This concept relates to the belief that research managers should protect researchers from the organizational attempts to regulate and control. In other words, boundary management seems to be needed to protect researchers from more management. As one programme coordinator argued:

> 'Research managers should deal with the outside pressures likely to endanger the conditions for doing proper research, keeping them outside the research setting. Academic researchers are inherently embedded in professional bureaucracies. To do proper research, they should not bother too much with any kind of bureaucratic rules. Research management has to provide some sort of protection against these regulations.'

This suggests that research managers operate as a go-between between the organizational demands for administrative control and the recognized leeway researchers need for developing their work. It also suggests that research managers may well seek to reinterpret, to readjust and to accommodate administrative regulations in productive ways. As one research director explained:

> 'We have to have clear rules, to communicate them and to implement them properly. To make sure that the rules are carefully put into practice, I also have to talk to people. I want to make sure that I have all the necessary information (e.g. accepted though not registered publications), before the board of the research institute decides on a researcher's status. If someone does not meet the qualifying criteria, he or she cannot be kept as researcher forever, but perhaps there are special circumstances under which we would say: let's give it another year. '

This reinterpretation and reassessment of the regulations set in place seems to be central for defining the sphere of influence that research managers have. The idea of getting rid of obstacles that may endanger or obstruct the conditions researchers need in order to perform, has emerged as a key notion. The boundaries of the group seem to be protected from the administrative paraphernalia by means of negotiation about its meaning and implications.

Profiling

Profiling research groups has also emerged as another key task of research managers. This concept represents the drive they have shown towards reinforcing group coherency around a self-binding research focus. This drive is likely to fuel commitment, to funnel work outputs, and to ease choices (e.g. resources allocation). As a by-product, profiling may also help inverting the alleged loosely-coupled and individualistic work traditions within this research terrain. The concept of profiling involves two main constituents: 'focusing' and 'contextualising'. Unlike the sponsoring task, profiling is infused by the dynamics of social interaction between research managers and researchers.

Focusing

Research managers seek to help groups which organize themselves around a legitimized research focus and which can then work as a tailored working ground. Instead of an aprioristically-defined theme, this is to be constructed and continuously sharpened in the context of researchers' actions and interactions. This has resulted from a participative bottom-up definition of an umbrella theme that is likely to embrace the dissimilar research interests and scientific orientations of the researchers. As one research director argued:

> 'What does a research programme mean and imply? We can only write what researchers want to do. We ask researchers about what they want to do in the next five years and then we look for a relationship between these things. The research programme is a pure bottom-up process. We cannot do it the other way around. We cannot say: 'I want to have this result and this is the programme I set up to achieve this result'. This is not possible in scientific research.'

The focus is seen as having some steering power in terms of group performance, providing that it emerges from bottom-up discussions, that it is simultaneously comprehensive to embrace researchers' different fields of interest, that it provides both guidance and freedom, and that it reinforces the identity, the profile, and the coherence of the group outcomes. The crafting of the focus has an eye-opener effect, as it allows researchers to spot chances of internal cooperation. It reveals professional affinities, interests and competences previously unknown, enabling new forms of synergy. As one programme coordinator maintained:

> 'Researchers find it worthwhile discovering other people working on the same research topics or just more closely related to theirs than they have ever thought of. They are motivated by the fact that they can define research projects with these colleagues, who were once not considered as potential partners.'

Altogether, the development of common roots – the focus – has both internal and external implications. Internally, it demarcates a field of expertise and specialization. Externally, it sets the stage for international networking, while serving as an eye-catcher to newcomers.

Contextualising

This notion refers to the ongoing effort of creating and reinventing an intellectually inspiring research atmosphere. Because the work context is developed by and via the social interaction of researchers, it is an unfinished collective product. It is seen as being important for developing a sense of community, and for sharing academic values and beliefs. As one programme coordinator maintained:

> 'We cannot say at this stage that we have a strong group identity. Differently, we can say that we are committed to our research focus, to constrain our output according to the focus, to promote discussions, to plan activities, and by doing this and defining our research projects within the realm of the focus, we are building a kind of identity.'

And, as one research director suggested:

> 'A right atmosphere is the one where people can meet and work with both permanent and guest researchers, and where there are a lot of research seminars happening. We seek to have people with different backgrounds, knowledge and experiences working together. And we seek to promote the facilities and the opportunities for people to work together. Everything else is up to the researchers.'

This involves not only exposing researchers to the opportunity of working with others, but also exposing them to one another. Promoting exposure is perceived as instrumental for stimulating the internal cooperation sought. As one research director explained:

> 'This [management] approach creates an atmosphere of continuously exposing people to certain values and ideas. Thus, we should keep questioning them with this respect, verifying whether they can act accordingly. This creates self-awareness in individuals and in the group.'

The development of a productive context is perceived as providing an excellent opportunity for creating shared understandings and actions, rather than a direct threat to researchers' creativity or autonomy. Ultimately, the context is seen as representing an internal forum where researchers can meet to discuss and to learn about each other's work and, consequently, to create

new platforms for cooperation. Eventually, this may lead to the development of an internal peer-like environment, in which colleagues might be discovered or reconstructed as peers – and not necessarily as competitors – thus replacing traditional forms of isolation. The opportunity to work with those relevant to one's field of research can enhance researchers' performance.

4.5.2 Framing the pillars of research performance

The possible sphere of influence that research managers possess regarding the performance of their researchers cannot be fully understood and put into perspective if we only focus on their tasks. Their work has been developed against the backdrop of organizational frameworks that involve, among others, performance rules, procedures, expectations, goals, and budgets. Therefore, we also need to examine how they sense the dominant organizational requirements that might infuse their organizing style, notably those regarding the warranted quantity and quality of the research output. We begin by addressing first some of the implications of a short-term target culture on an intrinsically long-term, non-routine and unpredictable kind of work. The perceptual differences regarding the nature of research quality are seen to have influence on the perceived validity of the assessment systems used to recognize quality.

Quantitative targets

This represents the growing determination research institutes are currently showing in order to compel their researchers to generate adequate research outcomes on a yearly basis. This target is not arbitrary though, as it reflects a widespread move that surfaces in the research evaluation protocols of both external assessment bodies and self-assessment exercises. Owing to the appealing prospects of institutional rewarding, which might have a symbolic and/or pecuniary form, the adoption of yearly targets, although seen as demanding or potentially deceiving, has enforced performance norms that were formerly absent, thus reframing researchers' expectations and approaches. As one programme coordinator suggested:

> 'Were these pressures absent, we would not be putting such a strong effort on quality issues. These external pressures did really help increasing productivity and quality. I really think it has been helpful. At our institute, publications doubled in the past five years as compared to the five-year period before that.'

Or, as one research director associate stated:

> 'Researchers are free to write conference proceedings, books, book chapters and the like, as long as they publish one international article per year.'

The adoption of annual targets is not trivial, however. These targets, which are mostly computed in terms of international articles, are short-term from the perspective of many other relevant research pursuits, e.g. editing a book or organizing a conference. However, the relevance of the two latter activities is not easily scalable. What is noticeable here is that former researchers' extensive discretion to self-set goals and deadlines – which could eventually yield no goals at all – is now being curbed by assessment systems that urge them to score according to and within a predefined time span. Therefore, the pressure research institutes try to put on researchers in order to score on a short-term basis is thought to encourage courses of action that may affect performance, but not always desirably. One of the consequences is that the development of research strategies may lead to an increase in the amount of output delivered at the expense of quality, as the time needed for critical reflection is reduced. As one programme coordinator stated:

> 'The current system forces people to publish quickly, to have a short-term idea of publications, or short-term publication strategies. Thus, the current assessment and incentive system is discouraging for it leads to a short-term vision, which forces researchers to produce things they are neither happy with, nor they associate with quality.'

Or, as one programme coordinator bluntly argued:

> 'This pressure [for publishing] also includes undesirable elements. It is far more attractive to repeat a trick to get a higher output. Thus, do not move too much; sit down on your golden egg and make hundreds of them in all different colours.'

While the risk might be that of inducing researchers to fabricate products they would not otherwise produce, were the assessment system absent or differently designed, research managers seem to hold a dual stance towards the dominant urge to score. On the one hand, the pressure is believed to stir undesirable consequences, such as that of 'trick's replication', as the performance target imposes rush on a time-consuming activity. Quantity of output might go up at the expense of quality. On the other hand, 'quantitative targets' are also taken on pragmatically. They are perceived as inculcating a new sense of urgency to the research task, while at the same time providing research groups and researchers with the organizational conditions needed to maintain research as a viable pursuit (e.g. status, resources). As a programme coordinator maintained:

> 'I do not think people are growing bitter feelings, as they are simply becoming more pragmatic: if we want to earn money, we have to do things people are willing to pay for. While this trend is good at first sight, I have doubts as to whether this movement is useful, especially when governments talk about giving more money to productive people.'

This suggests that those who hold a sceptical stance in regard to the undesirable consequences of 'quantitative targets' to the quality of research seem to have redefined their positions in practical ways. They comply with and endorse the new demands as a survival strategy. This may well result from the awareness that they can only bargain for the reconfiguration of a credible negotiation space by first coping with the organizational regulations. This sort of compliance also emerged with regard to perceptions of quality.

Qualitative targets

This notion represents the perspective that regards the inescapable ongoing transient nature of 'quality'. Quality is not understood as something that is neutral, objective, independent, fixed and final, or meaning the same to everyone at the same time. Instead, quality was portrayed as a contested, incomplete, elusive, and fluid concept, which is subject to many influences. As one programme coordinator explained:

> 'The tricky point is that in science there are not real objective performance criteria. These are developed in forums of peers at conferences and in academic journals. These people decide on what is good or bad. Our work will be judged according to the specific standard of the forum to which we submit our work.'

The relationship between the genesis of quality and associated assessment systems is mutually constitutive. Therefore, the way quality is believed to exist or to be recognized, shapes the perceptions about the integrity of the organizational mechanisms for judging its value. Unsurprisingly perhaps, different viewpoints regarding the essence of research quality induce different and sometimes conflicting beliefs which concern the validity of quality assessment systems. For some research managers the adoption of assessment systems, which rely on established quality referential (e.g. the SCI and SSCI journal list), reflects a tautological premise: the higher the position of a journal in the ranking, the higher its quality, that of its reviewers, of its authors, and of its articles. As one programme coordinator suggested:

> '(…) the quality of journals is essentially a representation or a projection of the feedback from peers in our networks. In a way, the journals signal quality. So, if we accept that journals signal quality, we can also see them as an indicator of quality.'

Or, as another programme coordinator maintained:

> '(…) since thousands of people who have been thinking and writing about our research topics sought to publish in those journals, they should reflect quality; their worldview and their expertise is conveyed through the references they use, which suggests that they know the relevant literature; furthermore, the people who play this game embody the best known knowledge about mental models and techniques of this particular debate.'

For a few other research managers, to whom quality is an inexorable contested concept, the assessment systems are just imperfect proxies to quality. As a programme coordinator argued:

> 'I agree with the [evaluation] system as such but certainly not with the criteria that is being used. There is an over-reliance on number crunching (e.g. weight of journals). It is basically about calculations, calculations, and calculations! The whole thing is rather silly because it reflects a static picture.'

The adoption of accepted performance norms besides pays tribute to the genuine desire or induced necessity that research organizations have to adopt the same benchmarks as those that are being used elsewhere. The establishment of universal performance criteria makes the standards easily amenable to computation, comparison, and selection, ensuring procedural objectivity internally and externally. As one programme coordinator boldly stated:

> '(…) publishing in those [SCI and SSCI] outlets became a survival strategy, as the selection environment is pushing us into that direction. Publishing in top journals, besides, is helpful, as it provides us with a very clear purpose, quality standards, and ideas as to how to guide the research group for free.'

The research managers who endorse the prevailing standpoint with regard to quality and to the organizational mechanisms via which this can be e.g. evaluated, compared, rewarded, etc. seem to strive to reproduce its reasoning within the domain of their research groups. Their position may actually reflect and reinforce that of their research communities. Yet, those who display critical contempt or scepticism with regard to the integrity of the assessment systems to fairly represent research quality – which might in turn account for disruptive reactions such as resistance or sabotage – did show traces of what we can define as resilient compliance. As one programme coordinator argued:

> '(…) publishing in SSCI journals has been turned into a kind of Holy Cow. I rather disagree with that. (…) We can't abolish the system, however. We have to work with it. I have to cope with it and I have to help others coping with it. In a way, I have a very ambivalent attitude towards the system in place. At one level, I think the system is rather mechanical. At another level, I think we can't live without it. This bad system is better than no system at all. If the system would change and start rewarding articles per kilo, I would stimulate people to do so: to produce long and heavy articles. Well, I comply. I also try to publish in good journals. But I don't consider the present apparatus of evaluation, which relies on computing the number of publications and their impact scores, a respectful one.'

This suggests that for the latter group of research managers, to whom coping would be more problematic, the new and stricter rules of the research game are perceived as being flawed as much as they are seen as inescapable. However, their disbelief in the virtues of the dominant assessment systems appears to have been pragmatically reinterpreted and assimilated in productive ways, rather than in disruptive or collusive modes.

4.6 DISCUSSION

The way research managers sense the organizational ambitions regarding the amount and type of desirable work output is central to understanding how their performance management responsibility is assimilated, defined, and undertaken (research question one). Their task is no less influenced by the constraints and opportunities posed by an ever allegedly-growing managerial agenda. It is thus crucial to examine the mechanisms they have adopted in order to reconcile their responsibility with that agenda (research question two). This reasoning defines the structure of this penultimate section.

4.6.1 Managing the performance of researchers: Ambivalence and negotiated order

The systematic comparative analysis of the data, based on the grounded theory approach adopted in this research (Glaser and Strauss, 1967), shows that research managers' position as regards the amount and type of warranted work output is that of ambivalence. From one point of view, the organizational requirements regarding the output are seen to have fuelled a new sense of urgency and direction, which is required and rewarded by the prevalent evaluation protocols. The prospects associated with the symbolic and pecuniary institutional rewarding encourage managers to help researchers to seek productive approaches to stricter organizational demands. From yet another point of view, these demands are also seen to inspire potentially contentious courses of action, which could lead to an increase in the amount

of output at the expense of quality. This is recognized as an unintentional but possible side effect of the system. The adoption of performance norms and expectations is still perceived as reflecting an inescapably widespread practice. This may well explain why partisans and sceptics alike are accommodating these performance requirements in a similar fashion. The data clearly show that research managers sense the enactment of harder targets as being both problematic *and* challenging, that is, that they are just as much part of a problem as they are part of a solution. Therefore, the idea that ambivalence is necessarily bad, undesirable, or that it causes uncertainty or indecisiveness is of little use. We argue that the ambivalence of research managers towards norms and expectations, which is deeply rooted in another form of ambivalence, that is, role ambivalence, clearly infuses their management approach. This is illuminating in that it offers a powerful way to understand why research managers develop a particular approach to performance management, and how this is to be understood in light of a growing managerial agenda.

Two intertwined and overarching concepts earned theoretical relevance as being representative of the activities performed by research managers, namely that of sponsoring and profiling. These activities boil down to a subtle blend of structured and informal actions. How successful individual managers prove to be in brewing a digestible blend, accounts for their aptitude in achieving a productive balance between their mission and their researchers' leeway for self-development. This balance results also from a combination of individual traits with collectively crafted courses of action. The individual-laden traits surfaced mainly at the level of the sponsoring activity and showed that managers' perspicacity and bargaining abilities influence the ways they can stimulate and protect the performance of their researchers. In a different vein, boosting up performance alongside a self-defined and self-binding agenda, which defines the activity of profiling, is infused by collaborative efforts. Traces of collegial forms of self-organization and self-regulation are noticeable at the level of the activities of focusing and contextualising. The shared definition and the enactment of legitimized courses of action are bracketed with the creation of a negotiation space research managers need to simultaneously promote and protect their researchers' performance. The process of negotiation is central to the relationship between managerial control and professional autonomy (Cohen et al., 1999).

As discussed earlier in this paper, performance management is driven by the belief that the joint definition of desirable, viable, assessable and 'rewardable' individual work outcomes decisively contribute to organizational success. Our conceptualised purview of research managers' activities clearly shows that the tasks of research managers strike a chord with the principles of performance management. It reveals the alignment of organizational goals

with individual goals sought, attained through the development of shared understandings and courses of action regarding the modes and conditions under which that alignment is to take place. While this is a positive understanding of the research managers' activity with regard to performance, which both reflects and informs this activity, it is not without insurmountable problems. We subsequently must sketch two key sets of interwoven reasons in order to explain our scepticism.

First, most research managers interviewed are simultaneously administrators and researchers. This role ambivalence blurs the traditional role distinction between the manager (who plans, organizes, co-ordinates, and controls work) and the managed (who works). Ambivalence should be understood here in its sociological, rather than in its psychological, sense. Sociological ambivalence refers to incompatible normative expectations incorporated in a single role of a single social status, not to one or another type of personality (Merton and Barber, 1976). More specifically, it regards here the pattern of a 'conflict of interests or of values' in which the interests and values incorporated in *different* statuses occupied by the same person result in mixed feelings and compromised behaviour (Merton and Barber, 1976: 9, emphasis in the original). Inevitably, this ambivalence also makes them particularly aware of their researchers' needs, ambitions, fears and limitations. Altogether, this exceptional awareness, infused by their liminal position in the organizational structure and by their ambivalence towards the performance norms and expectations, largely explains the tentative and highly negotiated character of their work. Negotiation, which is to be found in the processes of give-and-take, of diplomacy, and of bargaining, is central to organizational life in general, and to professional organizations in particular (Strauss et al., 1963; Day and Day, 1977), making the latter often seen as 'negotiated arenas' (Cohen et al., 1999; Fitzgerald and Ferlie, 2000; McAuley et al., 2000). As our data show, the performance norms, targets, and deadlines are stretched, negotiated, argued, as well as ignored or applied at convenient moments in order to get the work done (c.f. Strauss et al., 1963), rather than mechanically and categorically enacted by austere or oppressive research managers.

Second, owing to the role ambivalence, research managers also know that since researchers are used to performing research in a relatively autonomous way, they are not accustomed to integrating their work efforts with others, which can fractionate both group and organizational goals (Smith and Tuttle, 1988). Moreover, the formulation of goals and associated courses of action within unpredictable, non-linear and non-routine type of work, such as that of research work, is not trivial, since it emerges and develops while performing the work (c.f. Molleman and Timmerman, 2003). While research institutes set the performance goals in advance, it remains unpredictable whether researchers will actually attain them. In fact, researchers are only paid the

potential to be productive, as the translation of this potential into productivity cannot be taken for granted (c.f. Willmott, 1995). Although this uncertainty is inherent to every form of organized work, the ability to convert 'knowledge as possibility' into 'knowledge as action' is more complex and acute in knowledge-intensive contexts (Hargadon and Fanelli, 2002).

From the combination of these two sets of arguments we can draw the conclusion that the activities conducted by research managers may well be best understood as aimed at *shaping* rather than at managing the performance (c.f. Ferlie et al., 2002). It seeks to set the general tone for working, rather than to exert direct control over work processes or outcomes. Therefore, within the realm of academic research organizations, performance management may well be best conceptualised as an evolving umbrella of structured and informal activities affecting in different ways, magnitudes, and unpredictably the performance of a working unit and its members.

4.6.2 The managerial threat? Ambivalence, negotiation, and coping strategies

The conceptualisation of how research managers sense, define and undertake their activity has also enabled us to generate an understanding as to how they cope with the demands of a growing managerial agenda. We would like to start by demystifying the idea that there is now a completely new order regarding the challenges posed to researchers' performance. This is not to underestimate the theoretical value of an important body of empirical evidence (see the references in the first two sections of the paper). On the contrary, our purpose is to underscore that it is not an entirely new belief that academic research is going under a process of transformation, comprising several elements from a wide range of influences. Cotgrove & Box (1970), for example, argue that the bureaucratisation of science is confronting researchers by making substantial threats to their autonomy and to their control over research goals and methods, thus causing a loss of meaning in their professional lives. What can be new in this process – and therefore a challenging object of critical inquiry – are the different modes through which the introduction of managerial principles and practices into the organization of academic research are being assimilated, reconstructed and put into practice.

The devolution of management responsibilities to research managers can be seen as a bureaucratic mechanism found to accomplish tasks that were previously undertaken by researchers themselves (c.f. Parker and Jary, 1995). To a large degree, the activity of research management introduces structure into a professional setting traditionally characterized by collegiality, informality and sustained via a 'live-and-let-live' etiquette (c.f. Freidson, 1984). While this may involve new modes of performance regulation (e.g. specialization,

prioritisation, evaluation, and discrimination), we would yet hesitate to argue that this causes an inevitable loss in researchers' autonomy (e.g. Willmott, 1995). As we have discussed above, the interwoven activities of sponsoring and profiling involve a subtle blend of dynamically crafted practices aimed at aligning – rather than curbing – researchers' expectations with those of the organization. One key reason may explain this productive course of action. The role ambivalence we refer to above. The research managers that have taken part in this study are not trained managers. They are 'hybrids', as they are professionals managing professional colleagues (Fitzgerald and Ferlie, 2000). More specifically, they are researchers reconstructed as managers (c.f. Gleeson and Shain, 1999). Their academic backgrounds, their perspectives on how research can or should be organized, and those of their group members, play a central role in the ways their practices are defined and put into practice. This resonates with the idea that since managers operating in professional organizations are often practicing professionals or of professional origin, this often represents a continuation of the principle of professional control, rather than a loss of professional autonomy (Freidson, 1984). Therefore, it is inaccurate to say that this essential element of professionalism is disappearing, as this is perhaps just being reconfigured (c.f. Chandler et al., 2002). The key difference is that this process is assuming new forms, as professionalism is being reborn in a hierarchical form (Freidson, 1994).

While the managerial move underway would plausibly call for strong leadership, result-oriented approaches and selectivity games, the participants involved in this study appear to be engaged in alternative ways of crafting and legitimising their activity together with and not against the researchers. Our data clearly shows that research managers cannot be seen as mere objects of external steering, but as active actors who monitor their behaviour in accordance with their values, interests, aims and traditions (c.f. Ylijoki, 2003: 328). We concur thus with the belief that the power of agency in changing the definition of potentially adverse situations cannot be underestimated (Cohen et al., 1999; Halford and Leonard, 1999). Managerialism is not simply about controlling professionals, but it may also herald new patterns of compromise and collaboration between managerialism and professionalism (e.g. Harrison and Pollitt, 1994; Exworthy and Halford, 1999). Management, for instance, was described in favourable terms as a social process that was a necessary part of organizing to ensure that things got done (c.f. McAuley et al., 2000; Barry et al., 2001; Chandler et al., 2002). Unlike in several other professional or regional contexts (e.g. Willmott, 1995), the research managers of our study are not accountable for research productivity, nor rewarded or penalized accordingly. Therefore, despite the claim that managerial pressures are downgrading ingrained notions of e.g. collegiality, it seems that alternative forms of collaboration, of participative management, and of decision-making

are being devised in order to cope with those pressures and requirements. While these new forms of organizing might well have been shaped and influenced by managerialism, they do not seem to be determined by it (c.f. Gleeson and Shain, 1999).

Unsurprisingly perhaps, different coping strategies are to be found among managers dealing with managerial pressures in academic organizations, notably willing compliance, unwilling compliance, and strategic compliance (Gleeson and Shain, 1999). Intuitively, the first group represents the managers that comply with the managerial agenda, whereas the second group reflects those who hold a sceptical or disenchanted stance. The third group represents those who hold an artful pragmatism that reconciles professional and managerial interests. Strategic compliers maintain a personal and professional distance from senior management, in order to retain their credibility with their staff. In doing so, they manage and maintain context specific identities in their routine practices at work. The results of our study clearly show traces of both positive and strategic compliance, but they show no apparent signs of unwilling compliance. The grounded notion of boundary management clearly exemplifies an instance of strategic compliance. However, upon closer examination, we can discern among the participants in this study a supplementary coping strategy related with, but distinctive still from strategic compliance. Yet another form of compliance, *resilient compliance*, results from maintaining an ambivalent stance towards the dominant pressures, productively reconciled by means of introducing new organizing elements into the work setting. The conceptualisation of the participants' perceptions as regards the amount and type of warranted work output clearly shows that ambivalence is reinterpreted, reconfigured and assimilated in potentially productive ways as a survival strategy. This resonates with the idea that the 'mentality of modern university has become survivalist, dominated by a sense of duty to endure rather than enjoy' (Smith and Webster, 1997: 5). Resilient compliance seems to infuse the negotiation space needed to bargain for the productive reconfiguration of ambivalence. We believe that the potential academics possess to develop productive approaches, and to devise multifaceted coping strategies with the allegedly-growing managerial pressures have been largely underestimated. This is not to say that the threats posed by the managerial project to the researchers' professional ethos are harmless or are to be neglected. Instead, the threats might also being used as a springboard for a collective reflection and critical assessment of intransient work practices, with potential beneficial consequences for individual, group and organizational performance.

4.7 CONCLUSION

In this paper, we unveiled how academic research managers make sense of their performance management responsibilities in light of an allegedly adverse context. Understanding how research managers conceive and go about their work constituted an outstanding opportunity to examine how performance management in knowledge-intensive contexts can be understood and conceptualised against the backdrop of progressively demanding organizational arrangements.

The research findings presented in this paper show that the key activities of research managers strike a chord with the fundamentals of performance management. The findings also indicate that research managers' ambivalence toward performance norms and expectations is reconciled by means of negotiation. Performance management is yet here best understood as an evolving umbrella of structured and informal activities affecting in different ways, magnitudes, and unpredictably the performance of a working unit and of its members. The stricter organizational demands associated with the managerial discourse are accommodated by means of productive coping strategies developed together with, rather than against, the researchers. In this paper, resilient compliance is put forward as a concept that accounts for an ambivalent stance towards the dominant pressures, productively reconciled by means of introducing new organizing elements into the work setting. We contend that the power of academics in reinterpreting and redefining potentially adverse situations has been largely underestimated. We concur with the idea that it is exaggerated the belief that managerialism has somehow colonized university life, as academics and administrators seek to relate to one another in largely mutually supportive and cooperative ways (Barry et al., 2001; Chandler et al., 2002). An academic research organization, just like a beehive, can be associated with symbols such as expertise, community, order, frugality, intelligent cooperation, and perseverance. Against all odds, our findings show that we have indeed good reason to believe that this association can be given credence.

Theoretically, we can draw parallels from these findings to those changes taking place in other professional organizations. By relying on a conceptually grounded interpretation of the main concerns and behaviour of research managers (Glaser and Strauss, 1967), this paper adds to the theoretical debate concerning performance management in knowledge-intensive contexts. Nonetheless, it has its limitations. We acknowledge that to study performance management only from the standpoint of managers is dangerously self-limiting (c.f. Barry et al., 2001). Moreover, the study reflects a particular regional and disciplinary reality. It would be interesting to contrast the theoretical concepts emerging from this exploratory inquiry with those from

research management approaches in other professional and regional contexts. Yet, since the grounded theory approach allows for and privileges the conceptualisation of participants' experience, opinions and actions, the concepts generated are likely to engender theoretical plausibility, applicability and credibility. This appears to produce a rich picture of the intricacies and prospects of performance management in professional changing contexts.

CHAPTER 5

Quality management of academic knowledge production

This chapter has been submitted as:

Sousa, C.A.A. and Hendriks, P.H.J. That obscure object of desire: Quality management of academic knowledge production.

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5.1 INTRODUCTION

The scarcity of public research funds, in conjunction with such societal developments as the massification of academic education, has fuelled the introduction in the academic arena of selectivity schemes based on a purposefully less subjective notion of scientific quality. Scientific knowledge is progressively being evaluated against 'objectified' external quality standards (e.g. the journal impact factors produced by ISI or more elaborate bibliometric and content-analytical methods). By adopting a quality-based management paradigm, academe is supposed to become externally more transparent, more accountable, and more clearly goal-driven, as a series of universally measurable metrics are being established, compared, assessed and managed (Buckley and Hurley, 2001). However, auditable standards of performance have not been created to provide for substantive internal improvement of quality, but mainly to make improvements externally verifiable via acts of certification and to guide national and international science policies (Power, 1997).

The economically-inspired interest in the quality of science comes and goes in waves (Sent, 2005). These developments show that the interest in notions of academic research quality has regained a prominent role in policy and management discussions. What is more, interest in the concept of research quality is not new either. What defines academic research quality remains the subject of heated debate, partly fuelled by standardization, evaluation, and commercialization developments alluded to above. For several decades, the Mertonian image of universal norms guiding the scientific endeavour, with the peer review method as the stronghold of quality assessment in science (Merton, 1949), has been under attack. Particularly through the work of such authors as Latour (1987), Knorr-Cetina (1981; 1999), and Bourdieu (2004), it has become generally acknowledged that what qualifies as scientific knowledge is not the peer or objectified assessment of 'product before person' in the sense of Robert Merton, but it is a socially-produced recognition.

The majority of studies on research quality address such issues as the appropriateness of quality indicators and standards. If they address policy issues, they mostly do so at the macro and meso levels of societies and university systems, focusing on such topics as funding or performance assessment (e.g. Gibbons et al., 1994; Nowotny et al., 2001). Studies addressing management at the levels where research is done, viz. the levels of institutes and research groups, are scarce, notwithstanding a growing awareness of the important roles of institutes in establishing the form and content of research work (e.g. Morris, 2000; Whitley, 2000; Morris, 2002). In the policy and management discussions of research quality, researchers

typically do not link such issues to debates as regards the socially-constructed nature of what defines research quality. Yet policies and management of research institutions that have to merge the national and university policies with the drives and peculiarities of research groups and individual researchers are among the prime forces in the social construction process of research quality. As Whitley (2000) stresses, it is not just the different informal research communities that make up the various scientific disciplines and which decide what defines research quality, but also the formal organizational system of the individual sciences. This lack of attention for management in academia in general, and for quality management in particular, is a regrettable omission because once an institute has decided how its quality management should be designed, that specification is bound to have impact on the social production processes of research quality notions.

We argue that by more closely examining the role of management at the level of research institutes, the necessary and missing link in the research quality discussions can be provided. We also argue that the increasingly popular debates on organizational knowledge may provide an appropriate conceptual backdrop for inspiring such an examination. Knowledge plays a dual role in academic quality management as a constituent force of research quality. The first role is that of 'quality of knowledge'. Given the fact that knowledge production qualifies as the prime 'raison d'être' of scientific endeavour, knowledge is studied here as the object of quality and its management. The second role concerns 'knowledge of quality'. Knowing what defines the quality of knowledge presumes knowledge itself, which qualifies as meta-knowledge, or in Foucauldian terms as a metanarrative, vis-à-vis the knowledge it concerns. The aim of this paper is to explore this dual role by investigating how images of knowledge in both roles will resound in the practices and conceptions guiding quality management in academe. More specifically, it aims to provide a grounded theoretical account (Glaser and Strauss, 1967) of the intricacies surrounding the introduction of evaluation schemes for judging the soundness of scientific knowledge in Dutch academic research institutes operating within the field of business administration and management studies. The Netherlands provide an interesting setting for a case study, because it takes a middle position between such countries as Germany, where signs of ex-post research performance assessment are only beginning to surface in research funding, and the UK, where the Research Assessment Exercise (RAE) is fully based on such methods (cf. Geuna and Martin, 2003). The focus of attention in this article is an understanding of how research managers perceive *knowledge quality* and go about managing it in light of that perception.

The paper is structured as follows: the next section discusses the inspiring, but also fragile, conceptual status of quality and it explores how this

vulnerability is magnified when related to knowledge. Subsequently, we introduce the methodological approach of the empirical research, before elaborating on the findings. The penultimate section discusses the knowledge emerging from the accounts of research managers in their role as knowledge managers. The final section gives conclusions.

5.2 KNOWLEDGE OF QUALITY AND QUALITY OF KNOWLEDGE

The quality of academic research or, in a broader sense, the quality of science, and associated notions of research evaluation and auditing, continue to receive much attention across several fields of academic dispute, including the sociology of science, the philosophy of science, the economics of science, the discipline of scientometrics, and within many individual disciplines. Within these discussions, many objects and classes of quality indicators are passed in review. These include the societal impact of science, citations, numbers of publications, content elements of publications, structural position of research within research and researchers visualized through maps of science, fund raising, awards, patents, etc. (e.g. Hornbostel, 1997; Geuna and Martin, 2003; Weingart, 2005). These indicators are linked to research management and policy as elements in assessment procedures (via peer reviews, professional evaluators, etc.). Notions of research quality and its indicators derive their specific relevance as beacons for management and policy, both at the national and institutional levels. At first sight, quality in the broader organizational realm provides an undisputed theme for organizational change. It is more intrinsically appealing and less threatening than competing themes, such as cost reduction. It is hard to find anyone who is against quality, while cost reduction often evokes fears of displacement. Quality by contrast is said to be positive, unifying and constructive (Cole et al., 1995). The concept of quality has been used in many different ways and contexts (for an overview of quality definitions, see Cameron and Whetten, 1996). Yet, no definition is completely comprehensive or undisputed. Quality is an etymologically vague concept, both in its relation with product features and in its relation with the freedom of deficiencies (Van der Wiele, 1998). This understanding, though it recognizes the elusiveness of the concept, is related with the commonsensical notion of quality as 'the standard of something when compared to other things like it' (Oxford Advanced Learner's Dictionary). This definition inescapably draws the attention to both the role of 'standards' as mechanisms of quality legitimisation and to the inextricable idea of comparability. Quality is *acknowledged* whenever there is a standard against which the quality rhetoric can be brought under close scrutiny. As Power (1997, p. 59) argues, 'quality is not about high standards but about those that are uniform, predictable and verifiable'. The relationship between the standard and the desired attributes is

thus self-serving. Surprisingly enough, the approaches that relate quality with some sort of benchmark typically fail to recognize its constructed, situated and negotiated character (cf. Xu, 1999). Quality is not a given fact, neither are the standards uncontroversial objective criteria. Quality is an *archetype* constructed by and for people. It is therefore subject to and inextricable from discussion, negotiation, and concessions. Moreover, it is certainly bound by historical and cultural elements. Quality is not a cool diagnosis that is right or wrong. Instead, it is a definition conveyed by people with enough power to make their definition salient, if not compelling (Weick, 2000). While the rhetoric of quality is likely to bring people together – virtually no one is against quality (Cole et al., 1995) – the concept remains at one level rather influential, but at another level quite diffuse and shrouded in a fog of confusion and misunderstanding, as it means many things to many people. As Weick (2000) argues, the value of quality as a rhetoric device lies as much in its capacity to justify nonconventional, nonrational, chaotic, stumbling actions, as in its capacity to produce efficiency. This suggests that, while the appeal of quality lies in its magnetic power, it may well fail to generate agreements as regards the means and the conditions under which it can be recognized and evaluated.

Quality becomes a particularly fragile concept when the soundness of knowledge-intensive work, such as academic research, is at stake. This vulnerability derives from the nature of the knowledge that gives research work its character. Research work is a highly knowledge-intensive professional activity which, like other forms of knowledge-intensive work, is surrounded by ambiguity. This renders substantial problems to quality evaluation (e.g. legitimacy), as the evaluation criteria are in most cases unreliable, disputed or entirely absent (c.f. Alvesson, 2001). A prime source of tension is the risk of finding divergence between perceptions of quality by management, as embedded in assessment and reward policies, and perceptions of quality among researchers (Lambright and Teich, 1981). One of the most critical problems of managing scientific work is that of evaluation, involving the assessment of quality and quantity, in addition to creativity and productivity. Putting a 'price tag' on academic knowledge is difficult, if not impossible. It confronts the loftiness of knowledge with such mundane concerns as deadlines and funds. Sometimes it is even counterproductive, because it forces purpose on an activity that under the circumstances only thrives when purposeless (Fuller, 2002). Attempts to tag knowledge as 'good', 'warranted' or 'scientific' require the adoption of standards as legitimising mechanisms of the evaluation enterprise. While the selection of a particular quality standard to evaluate knowledge is not a trivial exercise, it points also to a particular and controversial understanding of knowledge. Only physical manifestations of knowledge and not knowledge as such, are subject to organizational scrutiny.

Therefore, each knowledge representation that the standard does not acknowledge easily escapes detection when an inventory of knowledge is made. This may have consequences not only on the content, the purpose and the processes of knowledge production, but also on the behavioural aspects of the task. As Ewan and Calvert (2000) put forward, there is cause for scepticism that such knowledge measures only stress quantifiable and accountable outcomes. At the same time, they cannot really capture the essence of researcher's work, while their professional interests and activities are not impaired.

5.3 METHOD

The dissociation of research knowledge from its manifestations, which is characteristic of quality debates in academia, intrigued and inspired us to conduct this research. The objective of this investigation is to contribute to an understanding of quality management in academic research when that research is perceived from a knowledge perspective. This study follows the principles and procedures of a grounded theory approach (GTA, Glaser and Strauss, 1967). GTA is a highly systematic and inductive methodology used for the collection, analysis, and continuous comparison of data. Its purpose is the generation – not the verification – of theory used in describing and explaining basic common patterns in social life, by continuously comparing data (Glaser and Strauss, 1967). GTA has largely been developed in studies of professional work carried out in complex organizational settings, making it particularly appropriate for researching managerial and organizational behaviour (Locke, 2001). Notwithstanding the canonical status that GTA has acquired in the field of organizational studies, what constitutes GTA is by no means an unequivocal or uncontroversial issue (for a critique see Alvesson and Sköldberg, 2000). The appropriateness of this method, given the research objectives specified above, derives from two interrelated arguments. Firstly, there is lack of robust theoretical guidance in existing literature concerning the connection between the knowledge and quality debates in organization studies. This lack implies the need for the type of fundamental exploration GTA supports. Secondly, what scientific knowledge quality is, can be, or should be depends to a large degree on the worldviews of the players in the field who are empowered to devise and enact quality measurement schemes. Since the rhetoric of knowledge quality may have different implications and yield different consequences in different contexts, it is useful to examine how this message is conveyed and articulated from various standpoints. Academic research managers are privileged carriers – or should we say, actors – of this knowing because of their twin identity (most of them are both administrators and researchers). Therefore, an assessment of their interpretation of the

domain is crucial in order to ground theory on the domain. Hence, this research draws on the research managers' accounts in regard to the conditions, purposes, and implications of an emerging evaluative philosophy in research institutes that is aimed at grading, rewarding, comparing, etc. the quality of the knowledge produced by these institutes.

5.3.1 Research setting

The research was conducted in the field of publicly funded academic research in the area of business administration and management studies in the Netherlands. Two fundamental choices in terms of research design were made. First, a choice was made to examine only fundamental research, that is, research not financially dependent on commercial sources. This allowed us to focus on knowledge production in a pure sense. Second, it was decided to include Dutch research institutes that have explicitly organised research programs in business administration and management studies: the institutes at Eindhoven, Enschede, Groningen, Maastricht, Nijmegen, Rotterdam, and Tilburg universities. Within this academic field, research is organized by research institutes whose management structure comprises a director and programme coordinators. The research director generally reports to the dean of the faculty, whereas program coordinators report to the research director. The tasks of the research director include delineating the overall research strategy and policy, whereas the program coordinators are responsible for organising the research at a group level. Since confidentiality was ensured, no institute or research group names are used.

5.3.2 Data analysis

Data collection took place between March 2003 and August 2004. The research-related documentation (e.g. description of policies, themes, goals) was analysed in order to gain an understanding of how research is formally organized. Subsequently, one of the researchers conducted twenty-nine in-depth semi-structured face-to-face interviews with respondents holding research coordination tasks. The interviews covered three general questions. Firstly, the respondents were invited to reflect on why research quality is measured; secondly, they were asked to explain how that evaluation work is performed; and thirdly, they were asked to contemplate the potential effects this evaluative philosophy and practice may have on research work. The interviews showed that a fourth topic, logically preceding the other three, needs explicit attention. This topic concerns the discussion as to 'what is (research) quality', which is implied though not directly addressed in the first two interview questions. The interviews took about two hours and were all tape-recorded. The respondents were sent a concise transcription of their accounts for assessment. The respondents' accounts were coded immediately

and consecutively after the interviews in order to raise the theoretical sensitivity to emerging concepts. The constant comparison of codes, patterns, properties, associations, and exploration of possible relationships between concepts was analytically explored in memos.

5.4 FINDINGS

This section elaborates on the provisional theoretical key concepts that translate the intricacies surrounding the quest for measuring research quality. It consists of four subsections, three of which are devoted to the three questions put to the respondents - viz. why do you measure quality, how do you measure quality, and what are the effects of measuring quality. These sections are preceded by a presentation of the discussion as to what defines research quality.

5.4.1 What is research quality? Research quality as credentialised judgement

Much of the controversy surrounding the research quality debate derives from the conceptual ambiguity of the term 'quality'. In the interviews, research managers admitted that debating the essence of quality provides for a rather esoteric discussion. Respondents do not see quality as a given, neutral or stable attribute, but as an extrinsic, subjective and unsettled perception. Quality – to be recognized – must always be brought before *an* established perspective. As a program coordinator argued:

> 'The tricky point is that in science there are no objective performance criteria. These are developed in forums of peers at conferences and in academic journals. These people decide on what is good or bad. Our work will be judged according to the specific standard of the forum to which we submit our work.'

Quality is seen as an inter-subjective understanding, which depends on the opinions of those who have earned the credentials needed to trade judgements about its meaning, relevance and soundness. This judgement pervades forums, time, space, and it is subject to many influences. The belief that quality is not a built-in characteristic, but a '*build-around*' attribute, draws attention to its socially-constructed character. Distinct ontological and epistemological positions, which coexist within and across research communities, determine not only how research quality can be defined and recognized, but also the perceived legitimacy of its assessment mechanisms. As one program coordinator suggested:

> 'Research quality is a very difficult thing to establish; its scientific value and its scientific relevance are the two main issues. Since the research process is very subjective, every researcher will have a different idea about this. What we seek to have is a more objective scientific result. By scientific, I mean that the result can be shared independently of the individual. If both the research process and the result are purely subjective, the result is personal knowledge, experience or something else, but certainly not scientific knowledge. Apparently, these are different things. The difference between personal and scientific knowledge has to do with objectivity, that is, personal independence. It is a kind of objectivity that turns into value.'

This suggests that research quality may also be associated with a detached perception of objectivity, value and relevance. The coexistence of distinct beliefs may partly explain why both individuals and communities have evolving notions of what research quality is, can be, or should be. As one research director argued:

> 'Overall, it is very difficult to say what scientific quality really is. For me, it implies that the ideas conveyed in a contribution are really path breaking and that they really open new avenues for research. The implicit assumption is that because these ideas are path breaking they are recognized by the research community and thereby receive attention expressed in terms of citations.'

Yet, what 'path breaking' means and how 'new avenues for research' are to be built, remains at the very same conceptual level of confusion and vagueness as 'quality' itself. The conceptual borders of the term 'quality' emerged thus as porous, evolving, contested, provisional, subjective, political, historical and community-dependent. These attributes are bound to challenge organizational attempts to define, enforce and reward monolithic quality standpoints.

5.4.2 Why measure research quality? Between rationalisation and credentialisation

The interview question 'Why do you measure research quality?' proved central for contextualising and understanding the motive(s) associated with the upsurge of the research quality measurement quest. The analysis of the answers shows that this quest boils down to two key motives: rationalisation and credentialisation. Rationalisation represents a sense of effective and less wasteful use of resources, whereas credentialisation stands for anything or anybody that proves personal or organizational ability, quality, or suitability. Perhaps surprisingly, the research managers interviewed had no ready-made answers to this question. This may suggest many things. It may suggest that the far-reaching and heated debates concerning the upsurge of research quality measurement (and management) remained at the surface and were thus

less fundamental than claimed by its adherents and critics (e.g. Gibbons et al., 1994; Parker and Jary, 1995; Nowotny et al., 2001). It may also imply that the quality measurement urge became so ingrained in the contemporary forms of organising practice and discourse, that attempts to examine such a taken-for-granted premise in a critical fashion are seen as misplaced or unworkable. Alternatively, it may suggest that research managers are becoming more concentrated on handling the measurement system's intricacies than on reflecting on its metaphysical meanings. Next, we elaborate on the two key motives addressed above.

Rationalisation

Respondents recognized that there is a pressing need to perform an efficient allocation of resources on the basis of researchers' performance. Rationalisation involves two related steps. First, it concerns the enforcement of quality standards against which the research outcomes can be evaluated. Second, the evaluation is to be used subsequently as a sorting mechanism for resource allocation. This mechanism is meant to signal and discern warranted quality (from the organization standpoint) from unwarranted quality. As a program coordinator explained:

> 'Research quality is evaluated because you need to allocate budgets – you want to have a good performance per euro or hour – and to be able to reward the people who are better, while giving a signal to those who are under-performing.'

This suggests that rationalisation, as a principle, is not only at the service of parsimonious imperatives, but that it also infuses the performance appraisal system. The latter seeks to inspire research quality by rewarding researchers who cope with the adopted quality norms, while punishing those who fail to do so. To put it differently, rationalisation clearly connects the management tasks of budgeting with appraisal. As a program coordinator stressed:

> 'Essentially, the board of the university seeks to have mechanisms to ensure good money allocation and application. Part of the money for the groups that did not score high enough, can be diverted to our top research institutes and to top researchers, what will actually further their position. With this, the low-performing groups get an incentive to work harder.'

This widespread managerial rhetoric in regard to an efficient use of public money does not yet seem to represent a significant academic shift towards a superior civil citizenship. What is at stake here is a fundamental cultural change in regard to the definition and specification of which research outcomes are considered as acceptable. This reconfiguration is not trivial, as it

clearly signals the new conditions under which the research career is to be framed. As one program coordinator argued:

> 'Dutch academics used to have 50%-50% teaching-research time. This rested on the idea that everyone had similar qualities and that everyone was equally successful in terms of teaching and research. Yet, we know that this is not true. Providing that we accept that people are not all equal and that some may have to do more teaching while others more research, we need criteria to measure their achievements.'

Previous ingrained equity and discretion principles are being replaced by stricter evaluation mechanisms, designed for rewarding compliance and discouraging dissent. Closely associated with the rationalisation principle is that of discrimination, that is, to finely distinguish among alternatives. The organizations included in the sample appear to have fully adopted this long-standing managerial principle, which is perceived to circumvent the absence of an exchange-value for research. As one research director suggested:

> 'In the end this is an economic affair. There are limited resources, thus it seems reasonable to spend this sum as effective and efficient as possible. This is the main reason why we try to measure quality. With normal goods, there is a market to perform the job. We measure quality because there is no market for scientific knowledge.'

While the idea of lacking markets for scientific knowledge is debatable – there are certainly markets for particular streams of scientific research (e.g. drugs, robotics, etc.) – standardised evaluation may indeed be used to simplify the dialogue among research organizations.

Credentialisation(s)

The notion of credentialisation emerged as the other key motive for measuring research quality. The credentialisation of research organizations and researchers represents a particularly assertive device for promoting the dialogue among these research agents. Credentialisation does justice to the socially-constructed and boundless character of scientific research. If a research organization, group, or individual seeks professional legitimacy – which is eventually decisive for their professional reputation and survival – it must conform to the regulation and recognition mechanisms that typify a particular research community. Research managers maintained that research groups should not detach themselves from the dominant scientific norms. As one program coordinator argued:

> 'Gaining a certain reputation calls for an external benchmark. We are not alone in this scientific world. In that sense, I think that external benchmarking and conforming to the academic standards is very important. Communities create common standards. (…) This is very similar to modern art. You can do it, but if it is not recognized by a community, you are out of the game.'

The scientific norms are established, refined, reified, and constantly reproduced by those who take part in a particular debate. By entering such a debate one has to accept, to adopt and to reproduce its constituent norms. As a program coordinator suggested:

> 'All scientists know that and they should submit themselves to this process. If they do not accept these rules, they become philosophers but not researchers. They better say 'leave me alone'. I want to sit on the top of my mountain and try to understand the world, but I do not care about sharing anything with anyone'. This is something of value, but has nothing to do with science. A scientist is someone who submits to these established processes, trying to create an accepted result.'

The credentialisation processes have both symbolic and pragmatic value. The symbolic value results from the positive images of scientific prestige and authority associated with the peer recognition exercises. The pragmatic value of credentialisation is twofold. First, it entitles the credentialised subject (organization or group) with the right to claim maintenance or increase of resources or status. As one program coordinator explained:

> 'The research quality issue is very important because all external accreditation bodies judge our work on the basis of quality aspects. And accreditation is crucial for the amount of research time and research money we get from the board of the university and from the institute.'

Second, the credentialisation provides research organizations with a detached evaluation of their self-efficacy in terms of management strategy and practices. Failing to become credentialised, may lead to a reassessment of organizational choices and approaches. As one research director associate argued:

> 'There are multiple external evaluation bodies that sort of force us to look at quality all the time. These organizations help us to look at our work from an external perspective and they are important to evaluate our long-term strategy. Their accreditation offers us an impartial feedback on what we defined as being our ambition and on the actions we undertake to accomplish it. Their perceptions enable us to take measures.'

Credentialisation emerged as a legitimisation mechanism central to the purpose of measuring, asserting and assuring research quality. Surprisingly enough, we found that similar mechanisms have been adopted internally. All the research organizations examined had a 'research fellow policy' (or equivalent) in place. A research fellow is someone who has met the conditions set internally to hold a researcher status. The qualifying conditions are normally expressed in terms of number and type of research products accomplished per evaluation cycle. This internal credentialisation process is meant to discriminate 'good' from 'substandard' performance in the terms defined. It is a symbol of compliance with the dominant quality standing. Here too, the internal credentialisation entails the pragmatic and symbolic dimensions addressed above. Pragmatically, it rewards compliance with the research institute's qualifying criteria. As one research director associate argued:

> 'Publishing internationally leads to research time and to the maintenance of the fellow status. There are two sorts of membership: fellows and associate fellows. For being a fellow, researchers need 5 credit points, whereas for being associate fellow they need 3 credit points. This is an accreditation procedure. The general rule is that fellows have 50% research time, while associate fellows 30%.'

Or, as a program coordinator maintained:

> 'Research fellows have proven that they know how the game of research works.'

The internal credentialisation shows ability or predisposition to conform to the established quality standards. Researchers who are able to cope with the internal standards can generate the means to carry on with their work, whereas those who fail to do so are progressively weakening the chances of actively taking part in that game. Inevitably, the system reproduces itself in and through action. Researchers may well have to earn first their credentials at home, before they are able to take part in the broader research game. *In extremis*, if a researcher fails to get a 'fellow' status, s/he may fail to generate the enabling means. As one research director indicated:

> 'The consequences of distinct performance in terms of quality are defined at a research program level and are twofold. The first is the fellow status. Research fellows have easier access to research funds (e.g. for PhD students, attendance to or organization of conferences).'

The internal credentialisation process is also symbolically-laden, as it aims to distinguish, to entitle, and to signal the research institutes strategic choices in

terms of what type of research quality is sought. As one research director associate straightforwardly suggested:

> 'As an institute we need to keep in mind that the quality we want to achieve is the quality we reward. Researchers need to stick to the system and to accept that this is the way we do things here.'

Clearly, the internal credentialisation processes are not only infused by the rationalisation endeavours put in place, but they also mirror the external credentialisation processes taking place in what is becoming a more competitive knowledge arena.

5.4.3 How to measure research quality? The ABC of research quality measurement

The analysis of the answers to the interview question 'How do you measure research quality?' shows that the total, partial, or rearranged transcription of the ISI journal rankings (cf. the SCI and SSCI) is the prevailing quality referential in place. This referential reflects the dominant belief that the higher a journal in the ISI ranking, the higher its quality, that of its reviewers, authors and articles. Clearly, this informed choice also signals the organizational urge internally to reproduce the benchmarks used by scientific communities worldwide. Next, we specify the quality representations adopted – labelled here as 'quality iconographies' – and we elaborate on the leading mechanisms via which they are recognized and graded, what we describe as the 'quality measurement machineries'.

Quality iconographies

It is crucial for the whole measurement endeavour to establish the criteria by which quality is recognisable. By defining which quality representations are warranted and how these are to be graded and rewarded, research institutes clearly sort their strategic choices in regard to quality. As one research director argued:

> 'We measure the quality of research by assigning different quality labels to journals and book publications. There is a general internal agreement as regards the idea that articles are typically of higher quality than book chapters or books (the three categories we take into account).'

Since the quality referential becomes *the* quality standing, every other quality manifestation becomes unnoticed. The adoption of a particular quality referential is meant both to guide and regulate individual choices. As one research director associate argued:

> 'Researchers are free to write conference proceedings, books, book chapters and the like, as long as they publish one international article per year. What is unequivocal is that the institute considers 'good' all articles published in the SSCI and SCI journals. Dutch journals may be very good but we do not count them, because we think that researchers must work internationally.'

While the urge to publish in the journals included in the ISI rankings prevailed across the research institutes examined, some conceded accepting other outlets as long as they were, for instance, aligned with their strategic positioning. To put it differently, some research institutes admit to stretching their quality recognition filters. As one research director associate argued:

> 'There are certain areas that are underrepresented in the SSCI. We rely on peers to get a feeling about what might be considered a top journal in that area. We also encourage our researchers to publish in journals of emerging areas, irrespective of their size and of the fact that they might be absent from the SSCI lists. Ultimately, what we consider as the top and/or very good is also a strategic discussion for it embodies our choice as to where do we want to be prominent.'

This suggests that research institutes infuse their strategic ambitions into their quality management policy. Their discretionary power entitles them to select alternative quality representations and to reward them accordingly.

Quality measurement machineries

We found different degrees of operational sophistication with regard to the ways research institutes acknowledge, rank and reward the amount and the goodness of quality representations. Typically, the leading artefact for this task consists of a list specifying the eligible outlets ranked among three groups ('A', 'B' and 'C'-like publications). As a research director associate explained:

> 'Our research target is at least one international article published in a refereed journal every year. There are three possible levels of performance: below the standard, standard, or above the standard.'

This quote illustrates the prevailing performance criteria: researchers are expected to produce at least one article per year in an international refereed journal. The establishment of an annual quantitative threshold meets with considerable support. However, the specification of quality labels (and associated rewards) per type of product is not trivial. The more complex measurement systems include matrixes that correlate labels (level of quality achievement) with points (level of reward). As a research director outlined:

> 'A researcher needs 14 points to become a fellow. An article in an A-type journal (roughly corresponds to top 10-15% of SSCI) confers 10 points. A B-type journal (roughly corresponds to the top 50%) confers 6 points. And a C-type, which gives 2 points, stands for the remaining SSCI list and also contributions to books (providing these are refereed, internationally published, and written in English).'

The sophistication of this type of measurement systems is not unproblematic, however. Classes imply fine distinctions between groups. Distinctions necessarily imply that two adjacent groups are to be divided. Yet, this division is not – it cannot – be trivial or innocuous. As a program coordinator argued:

> 'We would all agree that the 'Academy of Management Journal' is a better journal than the 'Journal of Management' and that both are better than the 'Strategic Management and Technological Analysis'. But, it is not unproblematic to sort them into A, B and C classes. When we draw lines, there are journals what will be on two different sides of the fence. These lists are by definition intersubjective.'

The 'A', 'B' and 'C'-like formulation was found in most research institutes included in the sample. Respondents asserted that, irrespective of its inherent insufficiencies, this evaluation system ensures procedural objectivity while revealing that what accounts for superior quality gets rewarded accordingly. Conversely, the system is also amenable to misuse. In the following section, we address both its intended and unintended consequences.

5.4.4 The effects of measuring quality? Opportunities and threats

In this last section, we will elaborate on the answers to the third interview question. Research managers were, at that point, invited to contemplate the potential implications of an evaluative agenda on researchers' work. Respondents were found to hold an ambivalent stance towards these effects. This agenda, which reflects a global rather than a local practice, is believed to create as many possibilities as it creates constraints. At one level, the quality measurement urge has fuelled a new sense of urgency and direction, which is required and rewarded by the dominant evaluation protocols (external and internal). This prompts research managers to help researchers to reframe their expectations, approaches, and even careers. As one programme coordinator argued:

> 'Were these pressures absent, we would not be putting such a strong effort on quality issues. These external pressures did really help increasing productivity and quality. I really think it has been helpful. At our institute, publications doubled in the past five years as compared to the five-year period before that.'

Or, as one programme coordinator stated:

> '(…) publishing in those [SCI and SSCI] outlets became a survival strategy, as the selection environment is pushing us into that direction. Publishing in top journals, besides, is helpful, as it provides us with a very clear purpose, quality standards, and ideas as to how to guide the research group for free.'

This suggests that the adoption of stricter quality requirements is being accommodated in a pragmatic fashion. The quality systems in place clearly empower research managers with an institutionally legitimised favoured course of action. Arbitrariness or prejudice towards particular research achievements is replaced by an allegedly neutral norm. Performance criteria are now infused by at least partly disputed quality specifications – given their widespread credit and associated institutional rewarding – curbing former researchers' extensive discretion to self-set goals. As a programme coordinator maintained:

> 'English peer-reviewed articles became the [quality] norm, while most of the rest is not very much appreciated in the current environment. The other mediums are not valueless, but there is very little institutional reward for them. Like in any other organization, one is expected to follow those norms, at least to a large degree. (…) If we seek to spend well our energy, we should focus in the commonly declared important outlets – the journal articles – while assigning little energy to those that are marginal in terms of audiences.'

However, at another level, research managers also drew our attention to the possibly unintentional and undesirable effects of the research quality agenda. This agenda carries as much potential as it involves inconveniences. The latter are likely to backfire in different forms and magnitudes, partly undermining the goals the quality system aims to serve. Measuring research quality did not emerge as an unproblematic or uncontested exercise. The quality assessment systems are perceived as semi-objective and fragile, rather than flawless or deified devices. Some research managers are sceptical as to whether quality may actually result from the adoption of short-term quality targets on an intrinsically long-term, non-routine and unpredictable kind of work. Researchers might feel forced now to fabricate research outputs that are recognizable and thus 'rewardable' by the dominant quality criteria. This pressure may well interfere with the critical reflection needed for yielding quality. As a program coordinator argued:

> 'The current system forces people to publish quickly, to have short-term idea of publications, or short-term publication strategies. Thus, the current assessment

> and incentive system is discouraging for it leads to a short-term vision, which forces researchers to produce things they are neither happy with, nor they associate with quality. The translation of quality and productivity elements into this system for rewarding quality discourages research quality.'

This quote shows that the concern exists that the current assessment systems may promote haste at the expense of quality. Alternatively, they may reward behaviour that provides the greatest measurable visible output at the lowest risk and the least effort. Conservative or opportunistic behaviour may well replace innovative or challenging research attitudes. The assessment systems may well then be at odds with the disinterested exploration of knowledge avenues. As a program coordinator suggested:

> 'One negative effect might be that of a growing mimicry of research. Since researchers are being trained and socialised in a particular way, they will tend to reproduce it, which can lead to conservative behaviour. (…) If one tries to go one step too far, or to bring in different disciplines or research angles to enrich one's ideas, one will have fewer chances to publish, which might destroy intrinsic creativity. Small, step-by-step improvements are valued more than dramatic breakthrough approaches. This means that we might spoil some talent of people, if this talent does not fit the system in place.'

Or, as a program coordinator argued:

> 'This pressure also includes undesirable elements. It is far more attractive to repeat a trick to get a higher output. Thus, do not move too much; sit down on your golden egg and make hundreds of them in all different colours.'

Ambivalence towards the quality assessment systems has not yet resulted in uncompromising support or disruptive behaviour. The contestedness of the quality agenda defines its theoretical and empirical appeal and strength, rather than its weakness.

5.5 DISCUSSION

In the data, several issues regarding the connections between quality and knowledge come to the foreground. Firstly, the data show that the adoption of quality standards to judge the quality of knowledge represents a specific understanding of knowledge. The motivations for the upsurge of a quality evaluative philosophy in academe result from efforts of (a) rationalisation and (b) credentialisation which lead to (c) the identification of 'quality iconographies' and (d) the usage of specific quality measurement machineries. Rationalisation answers to calls for discrimination, selection and an efficient

allocation of resources. Credentialisation stands for the urge to introduce evaluative devices which reflect the 'rules of the scientific game'. The 'quality iconographies' symbolize the physical representations of knowledge that appear to work as steering, but also delimiting devices, in that the system only recognizes representations that have been previously recognized as warrantable. The 'quality measurement machineries', typically relying on ISI data and aimed at transforming articles into points, and points into status, time and budgets, are set to evaluate the soundness of individual and group achievements against the recognized representations. These drives towards rationalisation and credentialisation that lead to the identification of quality iconographies which serve as beacons for specific measurement machineries derives from a particular perspective on knowledge (both knowledge as object of quality and quality as knowledge). In the terminology of Xu (2000), who elaborates the quality domain in knowledge terms, these four connected issues unmistakably allude to a snowball metaphor of quality. Metaphors are powerful linguistic devices that have the ability to evoke commonly shared meanings, images, or feelings, as they allow 'understanding and experience one kind of thing in terms of another' (Lakoff and Johnson, 1980, p. 5). This metaphor conveys the image of an archaeological site from which a concept, such as quality or total quality management, sprung and from which it grew over time by collecting additional insights along the way.

Secondly, what the data show is that the concept of research quality itself is a source of confusion and misunderstanding as it means many things to many people. Knowledge of quality is highly contested. Quality emerges from the interviews as a fragile and controversial notion. The respondents portray research quality as credentialised judgment, stemming from the perceptions of those with enough power to make their definition salient, if not compelling (Weick, 2000), that is, who are in an authoritative position to trade and to enact judgments about its soundness. As they must have the power to define the dominant language of evaluation, their understanding of quality works as a 'certification of comfort' (Power, 1997). Such understandings of research quality point to what Xu (2000) refers to as the spider web metaphor of quality, which she presents as an alternative to the snowball metaphor. When seeing quality as residing in a spider web, the metaphor highlights the discursive formation of quality that has no existence separate from the discourse that establishes it. Xu's distinction between the two metaphors shows a clear, yet partial connection with elements of what nowadays appears as the standard dualism in knowledge management discussions, between an objectivist, cognitive or representational approach to knowledge versus an activity or practice approach (see Table 1). These two classes of approach in the organizational knowledge debates are based on what Cook and Brown (1999) term 'epistemologies-of-possession' versus 'epistemologies-of-practice'

Quality metaphor	Quality attributes	Knowledge perspective	Organizational knowledge activities	Knowledge metaphor	Knowledge attributes
Snowball	Verifiable Predictable Measurable Accountable Tangible Objective	Possession	Acquisition Modelling Codification Commodification	Asset	Representational Disembodied Stable Structured Rational Formalized
Spider web	Exoteric Judgmental Abstract Subjective Quintessential Intangible Ambiguous	Practice	Social networks Knowledge sharing Trust Collaboration	Mind	Socially constructed Experiential Relational Dynamic Spontaneous Hectic Intuitive
Xu (2000)		Cook and Brown (1999)		Schultze and Stabell (2004)	

Table 1 Quality metaphors and knowledge counterparts

(cf. also the epistemological dimension in the distinction made by Schultze and Stabell, 2004).

The combination of the first two points shows that the understanding of research quality that is represented in the quality system mostly draws on a limited and oversimplified understanding of quality as a form of meta-knowledge, given its focus on snowball/possession aspects. Unlike the manifestations of the snowball metaphor, the references to quality as a spider web did not surface in a systematic fashion in the accounts of the quality system as a representation mechanism, but mostly in debates on the quality concept itself or the practice of academic research. Even if some spider web considerations trickle through in notions of quality management, for instance, in the emphasis placed on credentialisation, compared to the snowball way of thinking in which the aspects of quality seen as a spider web appear to play a background role in the research managers' accounts of quality management.

A third remark to be made is that various data instances emerged in the research showing the limitations of the metaphors in Table 1 which calls for an extension of the dualistic picture it draws. For instance, in various quotations above, awareness resounds that conflicts and disputes typify the debates leading to quality management systems and practices, and that when new players appear in these debates, new systems and practices may emerge. The same system may be useful for one organization or research group and counterproductive for another.

Quality as meta-knowledge is therefore 'provisional and reflexive' (based on active and creative constructions of truths) and 'contested and political' (inextricable from culture and power, Blackler et al., 1998). This suggests that

aspects of dissensus and consensus elements in quality management debates, deserves more prominence than the possession/snowball versus practice/spider web metaphors give it. Also, knowledge is associated with possibility which implies that higher knowledge quality lies in a perhaps difficult to foresee future and not in the present or past. Several research managers argued that potential for generating new understandings, rather than already effected explanatory power, defines the quality of research. This notion resounds, for instance, in Hargadon and Fanelli's call (2002) to distinguish what they term 'knowledge as action' from 'knowledge as possibility for constructing novel organizational actions'. Therefore, a rich understanding of the quality debates in knowledge terms needs more distinctions and metaphors than shown in Table 1.

Fourthly, the data also show that looking at the quality system merely from a representational standpoint as the first three remarks did is inherently limited. While quality systems need to have a certain permanence to give them credibility and a sense of guidance, they also change. Initiating the process of change is typically a management activity, and one in which dispute and negotiation among managers and researchers, set within the context of institutional forces from outside the own organization, lead to adaptations and amendments. In regard to using their quality system in place, not all institutes appear to adopt a fully mechanical application. In many instances, managers have earned or negotiated a certain degree of leeway in deviating from what the system prescribes for allowing them to manage for quality in a more facilitating and enabling way than in a strict judgemental sense. What these aspects of the accounts show is that management is also rhetoric and practice, and shaped through managers' interactions. This reminds us of Zbaracki (1998), who argues that the rhetoric and the practice of quality management mutually constitute each other. A perspective on how the quality system is enacted via management is necessary in order to complete the picture. This refers both to the establishment of the quality system 'as representation' and its use.

Fifthly, the quality system affects academic knowledge production, whether this is intended or not. Various respondents stress that it has led to increased publications in the English language, in SSCI journals, and has produced the self-fulfilling prophecy of institutes only hiring researchers that have made their way to the upper tiers of SSCI lists, irrespective of the fact whether their work has been considered interesting for what it says. It also induces mimicry, opportunism, conservatism, and chunking research not for research's sake but for publication's sake (also see Weingart, 2005). Managers' actual conduct in several instances appears to deviate from the mechanical quality system, for instance, to repair its unintentional side effects. In such instances, the managers' practices also contribute to what researchers consider

high quality research and output. The effect of quality management on research quality also points, in a more disguised form, to the fact that because of managerial interference the controversies associated with issues of research quality have become more prominent. These elements in the accounts show that quality management also affects research quality itself, and thus co-constitutes that quality.

Based on the data instances and the five remarks we derived from them, Figure 1 is proposed as a guiding framework for studying the domain of academic research management via knowledge vis-à-vis quality related concepts. Boxes A and B represent the main focus on snowball/possession elements (remark one), and box C refers to the fact that knowledge-to-be-represented also involves spider web/practice elements (remark two). The white space that encloses all boxes points to the fact that the two metaphors that led to the distinction of these two boxes can only paint part of the picture (remark 3).The last two remarks aim to add a more balanced view of research quality management and its constitutive effect on research quality. Box D signals that adequately understanding research quality management implies focusing on management practice and not just on management rhetoric embedded in representation (remark 4). The arrow at the bottom of the figure represents the combined effect of management rhetoric and practice on research knowledge and knowing (remark five). The figure provides a foothold for the main data findings and serves as a beacon for further conceptual and empirical research into the field of academic research management.

5.6 CONCLUSION

Looking at quality management practices in academic research via a knowledge perspective, as discussed in this paper, has proven illuminative in several aspects. Firstly, it confirms that the concept of quality itself is a source of confusion and misunderstanding as it means many things to many people. Research quality as knowledge quality emerged throughout the interviews with academic research managers presented above as a subjective, historic-and-context-dependent, and fragmented concept. Our findings clearly show that the commonsensical idea of quality in relationship to standards is problematic, and these problems are magnified when it involves judging the soundness of knowledge. Interpreting quality primarily in terms of standards leads to downplaying, if not ignoring the socially-constructed, situated, and negotiated character of managers' and researchers' understanding – or knowledge – of quality.

Secondly, the findings show that the adoption of quality standards to judge the quality of knowledge at least partially, yet unmistakably draws on a

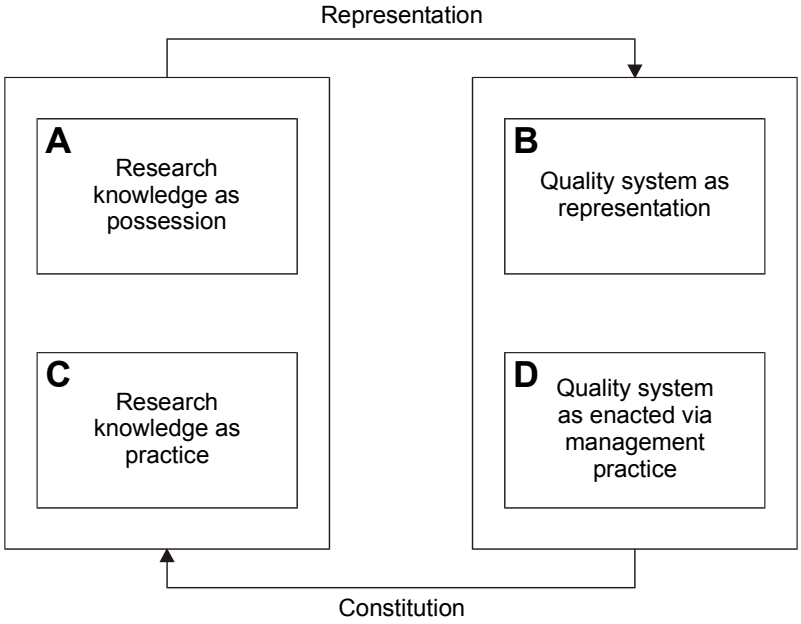

Figure 1 Formative connections between knowledge and quality of knowledge

particularly oversimplified understanding of knowledge. This study suggests that the prevailing evaluative philosophy found in academia which is used to judge the soundness of scientific knowledge most visibly rests on an 'epistemology of possession' (Cook and Brown, 1999). In its focus on output management and its character of normative control, it attempts to represent knowledge concerning the quality of the 'knowledge that is (organizationally) known'. This representational exercise clearly dissociates knowledge from the knowing subject, since it draws on physical manifestations or representations of knowledge and not on knowledge as such. The organizational value of knowledge is thus inspired by, and elicited from, such narrow 'possession' thinking.

However, the data generate insights different from these two, which mostly stress the problematic representational elements of quality management. Quality management in academia is tricky business indeed. However, it is not just a threat, as argued in the many critical accounts of alleged managerialism gnawing at the foundations of academia's ivory tower. The findings of this research also show that a balanced understanding of the research quality management will be unachievable if our understanding of quality management practice is not developed more systematically than current research and contemplative disputes are. If management is present in studies of academic quality discussions, the focus is on management rhetoric, not practice. The central quality rhetoric is put into *action* via the specification of standards and via actions of comparison. That practice too, whether present or absent, shapes quality. Research quality appears from this research

as a negotiated concept and thus the research lends support to the notion that negotiation is a core concept for coming to grips with the quality phenomenon (e.g. Cohen et al., 1999). Management at the institutional level and at the levels of research programs and projects is one of the prime constituent forces that shape the negotiation element underlying the quality concept. Quality is more than and different from representation and rhetoric. It is an overly simplistic notion to treat management as an outside consumer of scientific quality notions, to be praised or criticised for adopting a sufficiently rich understanding of that concept. Instead of being shaped by management rhetoric, research quality is also shaped by management practice, which itself is as equally pragmatic, contested, and socially-embedded (c.f. Blackler et al., 1998) as the research knowledge it concerns. The constituent role of management is reinforced by the fact that most research managers play dual roles. As this research confirms, most of them are researchers themselves, recruited from the upper tiers of the research community (cf. McAuley et al., 2000). The potential role conflicts, and the ambivalence they involve, have a strong influence on whether and how notions of research quality are ingrained in research management guide research. It is exactly their role as reputable researchers that enable research managers to enact notions of research quality via management practices. The prime challenge for researching academic research quality is not to draft more elaborate and sophisticated scientometric approaches to be used in quality management (e.g. the many discussions in journals such as Scientometrics or Research Evaluation), however useful and informative these may be. The prime challenge is neither to unravel the role of power, the alleged elitism of the quality movement, complot theories, or other mechanisms and ideologies consciously or unconsciously guiding the quality movement in academia (e.g. Parker and Jary, 1995; Wilts, 2000; Morley, 2003). While not denying the importance of these discussions, we argue that the prime challenge for investigating academic research quality is to produce a balanced understanding of the constituent role played by quality management practice.

CHAPTER 6

Motivation for knowledge work: Theoretical foundations and an empirical inquiry

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6.1 INTRODUCTION

The importance of motivation in knowledge work is generally acknowledged. With lacking motivation, the quality of the products of knowledge work is bound to drop dramatically. Without work motivation, individual knowledge workers may direct their efforts to their individual needs at the expense of organization goals or decide to leave the firm. Creativity, knowledge teamwork, knowledge sharing and other knowledge processes depend on the motivation of knowledge workers. Lacking sustained motivation in association with an insufficiently knowledge-friendly culture has often been mentioned as the principal culprit for failed knowledge management (KM) initiatives and programs (Davenport and Prusak, 1998; McKenzie et al., 2001). Several traits of knowledge workers explain, so it is argued, why prevailing work motivation programs will not work when applied to knowledge workers. These have high needs for autonomy, their career formation is external to the organization, they are loyal to their networks of peers and to their profession rather than to the organization that employs them, the exact form and sequence of their work processes cannot be fully predicted (Despres and Hiltrop, 1996).

Motivation is a big issue in KM debates. Notwithstanding its recognized relevance to KM, knowledge about motivation issues in the KM arena is scarce and scattered. Huber (2001) argues that "the management practice literature is replete with reports of practices being used to motivate a firm's knowledge workers… to participate with commitment in the firms' knowledge management system." Empirical research on the effectiveness of such practices, however, is in short supply. With respect to the connection between KM practice and motivation for knowledge work, our ignorance exceeds our knowledge (Huber, 2001). Whereas empirical research on the impact of KM practices on motivation is lacking, research does exist that addresses how motivation affects aspects of knowledge work. This research can be divided into two classes. Firstly, several studies link motivation issues to the broad categories of knowledge work and knowledge workers. Questions addressed in these studies are how motivation explains knowledge worker turnover or which role career development plays in knowledge work motivation (e.g. Tampoe, 1993; Kubo and Saka, 2002). Secondly, studies address how motivation is linked to knowledge aspects of work, such as creativity and other facets of knowledge exploration, and cooperation and knowledge transfer in knowledge teams. Questions addressed in such studies are how motivation plays a role in the establishment of key mechanisms that will lead to knowledge becoming organizationally valuable (e.g. Amabile, 1997; Janz et al., 1997; Osterloh and Frey, 2000).

The objective of this paper is to assess how understandings of motivation for knowledge work guide KM. We argue that understanding the effect of

KM practices on motivation presumes an understanding of how motivation plays a role in knowledge work. In the literature on knowledge work and KM several approaches have been proposed and described for addressing issues of motivation, based on various theoretical backgrounds. What is lacking in the existing literature on the topic is a discussion of how to select from these various motivational approaches. A selection of a particular theoretical approach would enable the definition of sensible hypotheses or prepositions to be tested or analysed in particular domains and against specific conditions. Yet, it is beyond the scope of this paper to develop criteria to facilitate a selection among alternatives. It takes theory to justify a choice, and it takes a choice to guide an informed inspection. However, such theory needs to be developed. The purpose here is to explore management issues in a specific knowledge-intensive activity in order to sort out potentially useful theoretical insights. We do not claim that the same selection of theoretical approaches will apply in other knowledge-intensive domains in exactly the same form. That particular domain concerns the management of academic research.

In addressing the research objective specified above this paper takes a three-step approach. Firstly, it aims to track the different approaches to motivation issues adopted in the literature on knowledge work and KM. For taking this step, we link to the second class of studies specified above, viz. those linking motivation to knowledge aspects of work, such as creativity and knowledge sharing. That class deserves more attention than the first as it aims to glance into the black box of what constitute the knowledge elements in work. It can thus provide a better guidance for understanding the potential sphere of managerial influence as regards motivation for the knowledge aspects of work than studies in the first class can. Any work is knowledge-based, unless performed by an automated machine (cf. Butler and Murphy, 2006). Therefore the terms 'knowledge work' and 'knowledge worker' are container concepts that are low in meaning without a specification of how knowledge defines them. Themes such as creativity and knowledge transfer provide exactly those specifications. The logical sequence for addressing the connections between motivation and the placeholder of knowledge work, therefore, is first to define work motivation and to specify work motivation theories, and next to link them to knowledge themes. Secondly, by means of a grounded theoretical inquiry (Glaser and Strauss, 1967) we explore the ways managers of a knowledge-intensive activity perceive motivation for knowledge creation and go about managing in light of that perception. More specifically, we investigate conceptually how research managers sense and handle motivation for research work within the domain of academic research organisations. Thirdly, the paper seeks to sort the relevance of the different theoretical approaches within the context of academic research management perceived as KM. To that purpose, we discuss the grounded conceptual

insights from our empirical study in view of the theoretical connections examined in the first part of the paper.

6.2 THE MOTIVATION FOR KNOWLEDGE-RELATED ASPECTS OF WORK

6.2.1 The concept of work motivation and work motivation theories

Motivation concerns the question: "what is in it for me?" Motivation is about what makes people's clock tick. That is, it concerns how behaviour is instigated and inspired by the expected outcomes of that behaviour defined as goals, aspects of success, performance or in other ways. What involves restricting the motivation concept to the work situation is succinctly expressed by the title of Maccoby's (1988) monograph on work motivation: 'Why work?' Work motivation concerns the individual's degree of willingness to exert and maintain an effort towards aligning individual goals with organizational goals, organizational success, organizational performance, etc. Such goals etc. refer to what is commonly called group motivation. The concept of work motivation is closely related to such concepts as work commitment, attachment, involvement and engagement. These concepts refer to the degree and different aspects of emotional binding to the job. Therefore, they can serve as indicators of motivation. It is also related to job satisfaction, or personal assessment of work revenues. Job satisfaction simultaneously plays the role of a cause and an effect of work motivation.

Drawing from the plethora of motivation theories that such disciplines as psychology and sociology have brought forth, organization studies have had their share in adding to the smorgasbord of motivation-related concepts, ideas and frameworks (for an excellent overview, see Ambrose and Kulik, 1999). Some work motivation theories appear more popular than others for addressing motivation issues with respect to knowledge work. Undoubtedly the most used motivation theory in KM-related discussions is Deci and Ryan's Self-Determination Theory with its key concepts of intrinsic and extrinsic motivation. Other theories that have received ample attention in these discussions are Herzberg's Two-Factor theory, Goal-Setting theory from Locke and Latham, Hackman and Oldham's Job Characteristics theory and, although used less frequently than the other four, Bandura's self-efficacy theory. Below we give an outline of these theories.

Two Factor Theory (Herzberg) and Self-Determination Theory (Deci and Ryan)

Probably the most used distinction in motivation discussions is that between intrinsic and extrinsic motivation. These concepts are the basic concepts of Deci and Ryan's (1985; 2004) Self-Determination Theory (SDT). They are closely related to what Herzberg (1968; 1987) in his Two Factor Theory calls motivators and hygiene factors. Intrinsic motivation works through immediate need satisfaction. A person is intrinsically motivated to perform an activity when the goal of the action is thematically identical with the action itself, that is, when it is carried out for the sake of its own objectives. Extrinsic motivation works through indirect need satisfaction, for example, through monetary and symbolic compensation. Intrinsic motivation and extrinsic motivation represent positions on a continuum describing where the locus of causality or degree of self-determination lays in particular behaviour. In intrinsically motivated behaviour, that locus is fully internal. It moves to external and impersonal to the extent that individuals fully assimilate outside regulations or ignore these (with several intermediate positions identified, see Deci and Ryan, 2004).

Goal-Setting Theory (Locke and Latham)

Goal-setting theory (Locke, 1968; Locke and Latham, 1990) states that higher performance results from specifying goals, depending on how and by whom that specification is given. Once individuals determine the goals they intend to achieve these goals and intentions direct and motivate efforts to attain them. Studies based upon goal-setting theory indicate that levels of goal specification are related to level of success in goal attainment (see Ambrose and Kulik, 1999). Individuals must be aware of the goal and accept it. Specific and difficult objectives lead to better achievement than vague or easy ones (Durham et al., 1997). Goals should involve a challenge; and to boost motivation, they should entail an extra effort. Research has also demonstrated that participation in goal-setting is critical to commitment to the goal (e.g. O'Leary-Kelly et al., 1994). Receiving feedback on goal achievement is also essential for motivation. If an employee does not get timely and accurate feedback on performance, it is impossible to know what behaviours to continue in order to achieve similar goals in the future (e.g. Carson and Carson, 1993; Gambill et al., 2000).

Job Characteristics Theory (Hackman and Oldham)

Job Characteristics Theory (JCT, Hackman and Oldham, 1980) involves a three-stage model, specifying a set of core job characteristics that impact critical psychological states (meaningfulness, responsibility, knowledge of

results). These influence a set of affective and motivational outcomes. The five job characteristics are: (1) skill variety, which describes the degree to which a job requires the exercise of a number of different skills, abilities, or talents; (2) task identity, defined as the extent to which a job requires completion of a whole and identifiable piece of work; (3) task significance, referring to the degree to which the job has an impact on the lives of other people; (4) autonomy, or the extent to which the jobholder is free to determine work procedures; and (5) feedback, or the information an individual obtains about performance effectiveness.

Self-Efficacy Theory (Bandura)

Bandura's (1986; 1997) self-efficacy theory links elements of expected or desired outcomes of work behaviour to the perception of what feasible outcomes are, given one's capabilities and competencies. The theory is based on the premise that people are more likely to engage in certain behaviours when they believe they are capable of executing those behaviours successfully. Critical factors in the development of self-efficacy are self-regulation, setting standards and goals, self-observation, self-judgment, and self-reaction. Much empirical evidence supports Bandura's contention that self-efficacy beliefs affect how well individuals motivate themselves and persevere in the face of adversities (e.g. Pajares, 1996; Gibson et al., 2000; Gibson, 2001; Tierney and Farmer, 2002).

6.3 MAIN THEMES OF KNOWLEDGE WORK MOTIVATION

Motivation plays a key role in knowledge work in many respects. In the literature discussing motivation issues related to knowledge aspects of work, four key themes emerge: (1) the overall motivation for knowledge work, (2) for knowledge creation, (3) for knowledge sharing, and (4) for the adoption of KM. The bulk of motivation studies of knowledge work address themes 2 and 3. Ordered per theme and work motivation theory, Table 1 presents a selection of studies that use one of the theories presented above.

6.3.1 Overall motivation for knowledge work

Some studies link motivation to the broad class of knowledge workers. Knowledge-intensive firms show up in statistics with high turnover rates, which is partly explained by the fact that individual knowledge workers identify with their profession rather than their employer, and that they need 'job hopping' to keep abreast of developments. Highly motivated employees may therefore experience a drive to change jobs on a regular basis. An intriguing object for the study of knowledge worker motivation is that high workforce turnover may also show lacking motivation (Horwitz et al., 2003).

Theories	Knowledge development, creativity	Knowledge sharing, cooperation, participation in communities, knowledge teams
Self-Determination (Deci & Ryan), Two Factor (Herzberg)	Amabile (1997); Wilkesmann and Rascher (2002); Amabile et al. (2004)	Hendriks (1999); Huber (2001); Wilkesmann and Rascher (2002)
Job Characteristics (Hackman & Oldham)	Amabile (1988, 1997)	Janz et al. (1997); Janz (1999); Wilkesmann and Rascher (2002)
Goal-Setting (Locke & Latham)	Carson and Carson (1993); Gambill et al. (2000)	Durham et al. (1997); Reinig (2003)
Self-Efficacy (Bandura)	Spreitzer (1995); Janssen (2000); Tierney and Farmer (2002, 2004); Shalley and Gilson (2004)	Cheng (2000); McClough and Rogelberg (2003)

Table 1 Motivation theories and knowledge themes: Sample studies

When knowledge workers experience their work as a source of frustration, workforce turnover along with high absence rates are signs of low motivation. Tampoe (1993) shows that three key motivators for knowledge workers are personal growth, operational autonomy and task achievement. His research shows that salary and bonuses on personal effort are not a principal motivator for knowledge workers. Research by Kubo and Saka (2002) partly contradicts this finding in that it shows the relevance of monetary incentives as a principal motivator for Japanese knowledge workers, next to such factors as personal growth and human resource development. Studies addressing motivation issues as described above treat the class of knowledge workers as a black box. As we argued above, the findings of these studies have a limited value for KM discussions because they do not specify whether the motivation mechanisms they address concern the knowledge-intensive facets of the knowledge work involved or not.

6.3.2 Knowledge development and creativity

Creativity is the first step in knowledge development and innovation. The connection between motivation and creativity has attracted much research attention for decades (e.g. Ambrose and Kulik, 1999). Amabile (1997), a

leading researcher on what motivates creativity, is one of many researchers who stress that a particularly strong connection exists between creativity and intrinsic motivation. She summarizes this core research finding in the Intrinsic Motivation Principle: "Intrinsic motivation is conducive to creativity. Controlling extrinsic motivation is detrimental to creativity, but informational or enabling extrinsic motivation can be conducive, particularly if initial levels of intrinsic motivation are high" (Amabile, 1997, 46). A person's social environment can have a significant effect on that person's level of intrinsic motivation, and therefore affects that person's creativity in an indirect way. Job characteristics have been shown to play a critical role in creativity (Amabile, 1988). Research supports the idea that specific job characteristics, most notably skill variety, task identity and autonomy, are associated with greater intrinsic motivation, especially for growth-oriented people (Smith and Rupp, 2002). Challenging and complex jobs for which employees have the autonomy to plan their work are crucial for creativity (Shalley et al., 2000). The effect of goal-setting in creative work has been shown to be positive: research confirms that clearly stated missions, clear organizational goals and the assignment of creativity goals are critical factors for high creativity (e.g. Carson and Carson, 1993; Gambill et al., 2000; Carson, 2001). Elements of the work environment have also been shown to be correlated with the motivation for creativity (Amabile, 1997; Shalley and Gilson, 2004): supervisory encouragement, work group supports, adequate availability of resources, absence of undue workload pressure and other work contextual variables have been shown to have a positive impact on creativity. Most empirical studies show that working for reward can be damaging to both intrinsic motivation and creativity (see Hennessey and Amabile, 1998). Nonetheless, rewards may support intrinsic motivation and creativity if presented carefully (Carson, 2001).

6.3.3 Knowledge sharing, knowledge teams, and communities

As regards knowledge transfer and knowledge sharing, which are key topics in KM debates, research stresses and shows the fundamental importance of intrinsic motivation. Knowledge sharing and associated motivation is related to a variety of subjects, such as knowledge-intensive collaboration, the formation of knowledge teams, etc. Several studies support the idea that intrinsic motivation for knowledge sharing is an important element in team motivation that will improve team performance (e.g. Janz et al., 1997; Janz, 1999). Osterloh and Frey (2000) argue that intrinsic motivation is particularly important for the transfer of tacit knowledge. Intrinsic motivation and extrinsic motivation are not independent. The most extensively researched phenomenon showing this is the fact that the introduction of extrinsic motivators (e.g. money) may reduce intrinsic motivation, which is discussed

under the label of the 'hidden cost of reward' or the crowding-out effect (Osterloh and Frey, 2000). Market arrangements, which only provide extrinsic motivations, are problematic when the transfer of tacit knowledge is at stake, because of this crowding-out effect. In addition, Wilkesmann and Rascher (2002) show that the importance of intrinsic motivation in knowledge transfer also derives from the fact that without it, the team element in learning will not be established, and groups cannot solve the free-rider problem. Several studies show that the context in which knowledge transfer takes place (its purpose, the support mechanisms in place, the roles played by transfer partners) lead to different motivators being important (Janz et al., 1997; Hendriks, 1999; Wasko and Faraj, 2000). A factor such as 'challenge of work' shows to be relevant when knowledge sharing concerns the team element in learning, but not when the transfer of best practices is at stake. A sense of achievement and responsibility appear important motivators for the role of conveying to others what one has learnt. Operational autonomy appears a key motivator for acquiring knowledge from others (Janz et al., 1997; Hendriks, 1999). However, in a team setting, high task interdependence with other teams reduces the importance of autonomy as a motivator. Also, when knowledge transfer concerns communities, as a more organic form of knowledge sharing than knowledge transfer in teams, moral obligation and generalized reciprocity (that is defined as reciprocity at the level of the community rather than individuals) have been shown to define intrinsic motivation rather than motivation factors that focus on self-interest, along with the more 'selfish' motivator of keeping abreast of innovations (Wasko and Faraj, 2000).

6.3.4 Acceptance of KM interventions

Motivation is among the factors that explain whether or not KM programs and practices are successfully adopted by an organization (Davenport et al., 1998; Bailey and Clarke, 2001; McKenzie et al., 2001; Malhotra and Galletta, 2003). Empirical research in this domain is scarce and inconclusive. In a small-scale survey, McKenzie *et al.* (2001) found, perhaps not surprisingly, that an understanding and recognition of the value of a KM initiative by the end users is the best guarantee that these will be motivated to adopt the initiative. This finding suggests that a close connection between intrinsic motivation and the KM program is essential. Exploratory research by Malhotra and Galletta (2003) suggest that, next to intrinsic motivation, also introjected regulation (taking in a regulation for reasons of anxiety and guilt without fully accepting it; this is an extrinsic motivator) and external regulation (adopted behaviour to satisfy an external demand or reward contingency; this too is an extrinsic motivator) explain for the motivation whether or not to participate in a KM initiative.

6.4 MOTIVATING KNOWLEDGE WORKERS

KM as knowledge-directed intervention in organizations offers several strategies, means and practices aimed at affecting individual's motivation, most of which stem from organization design theories and from the HRM arena. Much research shows that work design is a key factor in the motivation of knowledge workers and that work design forms the backdrop against which additional interventions such as HRM practices gain relevance (e.g. Hackman and Oldham, 1980; Osterloh and Frey, 2000). Winning motivation strategies have been shown to include allowing individuals and teams the freedom to define their work, the design of challenging jobs, and ensuring the support from top management for knowledge-related initiatives (McKenzie et al., 2001). Flexibility in work practices, cash rewards for knowledge products and recruitment practices aimed at hiring people that fit existing culture prove to be less successful motivation strategies (Despres and Hiltrop, 1996; Horwitz et al., 2003). In line with these findings, Horwitz et al. (2003) show the strong motivational importance of what they describe as 'job crafting', or the degree of freedom for individuals to adapt the physical and cognitive elements in the task and relationship boundaries of their work. Within the broad spectrum of motivational measures for knowledge work, the class of incentive and reward systems has received special attention (e.g. Amabile et al., 1996; Despres and Hiltrop, 1996; Hennessey and Amabile, 1998; Carson, 2001; Krönig, 2001; McKenzie et al., 2001; Salo, 2001; Kubo and Saka, 2002). Prescriptions for knowledge-friendly reward systems, which are partly backed by research, include that reward systems should be perceived as rational by the individual and the team, that they should focus on insights rather than status and hierarchical position, that they put challenge before monetary compensation, that they should involve an appropriate degree of flexibility and adaptability and that the drafters of such systems should be aware that rewards can also discourage because of crowding-out effects.

6.5 MOTIVATIONAL SOURCES IN A KNOWLEDGE-INTENSIVE DOMAIN

A logical question that emerges from the account presented above is the question regarding selection from among the various theoretical standpoints. The abundance of theoretical perspectives says nothing about usefulness of individual perspectives. On the contrary, it raises concerns as regards the appropriateness of selection criteria. While some work motivation theories appear more popular than others for addressing motivational issues in knowledge work, there is no dominant theoretical direction connecting the issues of motivation to knowledge aspects of work. Therefore, the selection of

a particular theory from which to derive hypotheses to test on particular settings and against specific conditions would be, at best, a self-serving choice. Which of these theories are most appropriate, which ones are perhaps even right or wrong in the connections they make when linking knowledge aspects of work to motivation? Answering these questions presumes adopting, for instance, a meta-standpoint as regards the various theories. One possible approach could be to develop some meta-theory of motivation as, for instance, Locke (1997) does, and to test that meta-theory. Here we adopt an alternative and more critical approach, because the selection and specification of any meta-theory could be disputed. How would we know in advance if we based the empirical inspection on the most fruitful meta-theory? The alternative approach adopted here consists of empirical data collection in such a fashion that the data will guide issues of selection and combination of theoretical insights. As elaborated below, that is the way of a grounded theory approach (Glaser and Strauss, 1967).

The empirical domain that was selected as the basis for this research concerns academic research and its management. Academic research work is an inherently complex, unpredictable, and timeless type of knowledge-intensive work that involves knowledge creation in perhaps its purest sense. In this context, academic research management broadly aims at improving the effectiveness and quality of the knowledge production processes that defines what academic research is all about. The management of academic research, therefore, constitutes an outstanding example of the management of a knowledge-intensive activity. The activity of academic research management involves imposing structure and purpose on a potentially 'purposeless' activity (c.f. Fuller, 2002). Therefore, within the scope of this paper it becomes particularly pertinent to understand what research managers think of researchers' work motivation and associated notions, for example, commitment, attachment, involvement, or engagement. It also involves focussing on how research managers go about managing, in view of how they perceive these motivation-related notions. More specifically, this paper examines how motivational aspects of researchers' work are perceived and pursued within the domain of research organisations.

The empirical inquiry presented in this paper is inspired by abstraction and conceptualization, rather than by hypothesis testing or description. The deliberate choice of favouring conceptualisation over testing or description resulted in the adoption of the guiding principles of the grounded theory approach (Glaser and Strauss, 1967). Within the realm of this exploratory study, we provide a conceptual account of research managers' view, rather than an accurate description of how they perceive that researchers' clocks tick and what they can, could and should do when managing researchers and what they should avoid doing. In order to be able to explore the 'shapes and sizes'

of the motivational landscape in this particular knowledge-intensive domain, we first elaborate on the methodological approach and data analysis. We then present the context of this empirical research and the interview structure. Finally, we present the key findings, which we will review in the Discussion section of this paper in light of the theoretical insights addressed above.

6.5.1 Methodological approach and data analysis

The objective of the empirical part of the research presented in this paper is to contribute to the theoretical debate regarding the motivation for knowledge work. It explores how motivational aspects are perceived and handled in the context of academic research management. A valuable source of theorizing lies, so we argue, in the perceptions, experiences, perspectives, and practices of research managers Research managers are privileged bearers of this knowledge for two key reasons. Firstly, they are responsible for seeking a productive balance between their organisational mission and researchers' leeway for self-development. Secondly, research managers may be expected to possess an exceptional sensitivity to the intricacies surrounding research work motivation given that, for the most part, they are researchers themselves (McAuley et al., 2000). The combination of these two aspects, associated with the deep-seated belief that motivation *matters* to the development and quality of research work, explains why this topic pervaded the individual accounts. The relevance of research managers' perspectives and experiences to theory development in the domain of motivation for knowledge work, therefore, cannot be underestimated.

The Grounded Theory Approach (GTA, Glaser and Strauss, 1967) appears particularly useful for guiding this inspection. The method, which has acquired a canonical status in the domain of organization studies, has been largely used in studies of professional work carried out in complex organizational settings, making it particularly appropriate for researching managerial and organizational behaviour (Locke, 2001). GTA is a highly systematic and inductive methodology used for the collection, analysis, and continuous comparison of data. As an inductive method, GTA seeks to discover theoretically relevant concepts from data, rather than from existing theories. The purpose is the generation – not the verification – of theory used in describing and explaining basic common patterns in social life (Glaser and Strauss, 1967). A key concept to GTA is that of the 'main concern of participants' involved in a substantive area. GTA considers the continual processing and resolving of that concern to be the prime mover of participants' behaviour (Glaser, 1998). GTA, therefore, underscores the relevancy of the participant's experience, opinions, and actions. The conceptual understanding of the ways research managers perceive and go about motivation to the knowledge aspects of research work that GTA

enables, is in at least two senses particularly valuable for developing the account of how motivation is linked to issues of knowledge work. Firstly, discussions of motivation from the perspective of organizational knowledge have reverted to many different motivation theories, mostly qualifying as what Ambrose and Kulik (1999) label as 'old friends'. GTA is helpful for *enlivening mature theorizing*, as it can bring a new perspective to mature established theoretical areas, enlivening, and modifying existing theoretical frameworks (Locke, 2001). Secondly, given its distinguishing explanatory power, GTA *links well to practice*, as it is especially useful to help organizational members gain a perspective and a new understanding on their own work situations (Locke, 2001). Via an understanding of practice, GTA may help detect the individual contributions of the various 'old friends' and the 'new faces', as well as the black holes they leave calling for even other new friends.

6.5.2 Empirical research context and interview structure

In this empirical study, we have only examined the management of publicly funded research, that is, research not financially dependent from or commissioned by commercial sources. This allowed us to focus on the management practices aimed at promoting knowledge creation in a pure sense. This study was conducted in the field of business administration and management studies in the Netherlands. Within this academic field, research is organized by research institutes whose management structure comprises a director and programme coordinators. The former delineates the overall research strategy, whereas the latter organize research at group level.

Data collection took place between March 2003 and August 2004 and included institutes with research programmes explicitly organized around that research domain: the universities at Eindhoven, Enschede, Groningen, Maastricht, Nijmegen, Rotterdam, and Tilburg. The research related documentation (e.g. description of policies, themes, and goals) was analysed in order to gain an understanding of how research is formally organized. One of the researchers conducted twenty-nine in-depth semi-structured face-to-face interviews with research managers. Regarding the approaches that can be taken in phrasing the questions, two alternatives can be distinguished. Firstly, the choice can be to start with the notion of motivation as a black-box and then ask how an understanding of motivation issues was recognized to direct management understandings and efforts. Secondly, one can opt for starting even more openly by simply asking why and how research managers think and act without using any motivation-related terms, hoping that motivation issues will emerge in their accounts. The advantage of the first choice would be that it would make research managers' life easier, as it would clearly invite them to meditate upon how motivation shapes their management practices. The advantage of the second approach would be that it involves even less

theoretical guidance or contamination than the first. Given that in GTA a minimum of theoretical bias entered beforehand is considered as an important support and even a precondition for the conceptual value and strengths of the images conveyed by the data, the second option was chosen as the preferred one. As expected, and as the inclusion of a data section in this paper shows, motivation appeared to pervade the individual accounts, even if in the questions no explicit reference to motivation was made. This confirms the key role that motivation is considered to play in academic research and its management, which is probably highly influenced by the fact that most research managers are researchers themselves. They are likely to recognize the importance of being motivated to do research and the possible crowding-out risks associated with management practices (c.f. Osterloh and Frey, 2000). It also gives further credibility to the findings presented below, as they were by no means directed beforehand by terminology used (e.g. the connection of motivation to the distinction intrinsic-extrinsic motivation, that may be standard in the sense that even mentioning the word 'motivation' can be enough to make people think of that distinction). Following the second, most open and theoretically unbiased option, the interviews covered four general spill questions. Firstly, respondents were asked how they conceive research management. Secondly, they were invited to reflect on how they conduct research management. Thirdly, the question was put to them as to how and why research quality is measured. Fourthly, they were asked what effects they expected the combined practices addressed in the first three questions to have on the work of researchers. While none of the interview questions explicitly addressed the issue of motivation, as this would be at odds with the inductive principles of the method, this emerged as naturally as inescapably across research managers' accounts. The interviews took about two hours and were all tape-recorded. The respondents were sent a concise transcription of their accounts for assessment.

The data from the interviews were analysed using the GTA constant comparative method (Glaser and Strauss, 1967). Respondents' accounts were coded immediately and consecutively after the interviews. The constant comparison of codes, patterns, properties, associations, and exploration of possible relationships between concepts was analytically explored in memos. The process of both coding and memoing is dynamic. This means that, since new data findings are constantly compared with previous findings, codes and memos are recursively reinterpreted and rewritten.

6.5.3 Empirical findings

This section elaborates on the theoretical key concepts that represent research managers' concern as regards the intricacies defining the motivation for research work that coalesce around three key aspects: work context, work

process, and work assessment. These aspects represent the key ingredients by which motivation is perceived to affect research work. Next, we discuss each of these aspects, and how they were addressed in the interviews. The quotes are provided for illustrative purposes. They are not meant to offer an accurate description of research managers' perceptions, which would be at odds with the principles of the method adopted.

Work context

The notion of the work context regards a subtle blend of physically, intellectually, and socially inspiring conditions offered by the research organisation. The dynamics of the research work are unpredictable and boundless, which are qualities academic research shares with other knowledge creation process. More often than not, researchers find inspiration and practical guidance for research topics, trends, methods, approaches, etc. in the social activities of their developing research communities. However, respondents emphasised that a crucial task for them is locally to help nurturing an inspirational work context. Such a context should be able to stimulate intellectual challenge, exchange, and support, in such a way that it is likely to stir positive feelings, for example, a drive towards cooperation, support, or belongingness. As a programme coordinator argued:

> 'We need to select intrinsically motivated people to do research. Afterwards, the only way I can think of keep their motivation is via creating a particular research environment, that is, setting up research seminars, writing joint papers, keeping a critical and constructive stance, and helping people with the process of publishing. Overall, it is about helping people to cope with the negative sides of research, for instance, dealing with reviewers, criticising and counselling so that improvements are possible.'

Or, as a research director maintained:

> 'Researchers' motivation has to do with the context of professionals' work. It is done in the shop floor, around meeting points, through facilitation, bringing research associates from outside, discussing articles, etc. Motivation is produced through discussion, meetings and debating interesting ideas, people and articles.'

To a large degree, the internal representation of the cosmopolitan mechanisms by means of which research knowledge gains meaning and value is perceived as having a motivational impact. This indicates that an important source of motivation for research work can be found at the level of purposeful social interactional activities. This draws attention to the motivational role of the social mechanisms that are constitutive of the knowledge processes. Moreover, it shows that respondents do not think of research knowledge in a

vacuum, or disconnected from the social worlds in which it becomes meaningful, but as both shaping and being shaped by these worlds. These social mechanisms are essential to legitimate the products of research processes. Academic research is recognised as such within the framework of socially produced confirmatory mechanisms, used and reproduced by specific research communities. Consequently, the social dynamics associated with those mechanisms are perceived as motivational. The relationship between these two aspects is self-reinforcing, in that if those elements are present, they may stimulate creativity and novel research, which in itself becomes subject to further scrutiny, motivating researchers in the process. As a programme coordinator observed:

> 'Overall, I seek to promote a stimulating research environment, which comprises the organisation of internal and external research seminars involving guest-researchers and in-house staff. We invest time, resources, and energy to create opportunities for interaction, both internally and externally. We have to attract guest-researchers to come over, in order to keep a challenging atmosphere. The processes of interaction that follows can be very stimulating to our researchers. We are rather driven by the belief that we should do whatever is needed to pursue interesting ideas. Then, by promoting a sort of togetherness, researchers are able to share research interests and capabilities. Ultimately, this is bound to develop a critical mass within our research domain, which may also ease content-related guidance.'

Generally speaking, the quality of the work context is seen as a potential motivator. An inspiring work context should be able to reproduce partly the social dynamics of the mechanisms that render research work scientific meaningfulness. While the development of a stimulating context is not an end in itself, it is believed to expose researchers to the same sort of interactional dynamics that will eventually judge the goodness of their work. This is not motivationally insignificant though, as researchers' scientific status and associated research career prospects depend at least partially on the severity of those judgments.

Work processes

Research management can be ideally seen as an activity directed at devising, enacting, and optimising the organizational context in which many knowledge processes (e.g. knowledge exploration, exploitation, sharing, and retention) may flourish. More specifically, the practice of research management boils down to a subtle blend of structured and informal activities aimed at coaching, nursing, protecting, and stimulating researchers' work processes. How successful research managers prove to be in brewing a digestible blend, accounts for their aptitude in achieving a productive balance between their

mission and researchers' leeway for self-development. As a programme coordinator suggested:

> 'I conceive research management as an activity primarily aimed at facilitating, stimulating, and motivating researchers to do and publish proper research.'

Research managers recognise that the creative part of the research work is mostly an isolated affair. However, their regular involvement in and assistance to the research processes is viewed as a central part of their job. It is at the level of the research processes that the real work gets done. Yet, it is also at this level that researchers meet head-on with obstructions, problems, frustrations, or apathy. In other words, it is at this level that researchers' motivation may swell or thwart. The assistance of research managers with the subtleties of the work processes is thus perceived to affect researchers' morale positively, for at least two interrelated reasons. First, research managers' professional experiences and personal networks – built up throughout their research careers – constitute authoritative pointers to problems researchers may face in the course of their work. However, their support is not directed at changing or curbing researchers' privileged courses of action. Instead, it is aimed at helping researchers pondering alternative ways to think of, or go about their work. While researchers' personal choices, preferences, or priorities may well be discouraged or redefined in the process, according to their perceived organizational or technical viability or appropriateness, research managers view this form of assistance as motivational. As a programme coordinator argued:

> 'Research managers should have responsibility with respect to the problems that researchers face that prevent them from doing proper research. Whenever there are researchers who are under-performing, the research manager should try to bring them above the line. This can be quite motivating for researchers.'

Or, as another programme coordinator argued:

> 'I also try to broaden the scope of researchers' work by drawing their attention to underestimated or neglected aspects, for instance, urging them to establish links with closely related topics. This is yet a bottom-up approach, which draws on the individual interests.

Second, research managers possess a distinctive sensitivity to the intricacies of research work process, as they are mostly researchers themselves. This enables them to have both an experienced understanding of these processes, irrespective of the specific content side of the work, and eventually to bargain

for the organisational recognition of their subtleties. Most research managers possess a practice-based, rather than theoretically-based perception of the fine points that define the complexities of research work. Their assistance, expressed in terms of personal and professional advice, encouragement, or in other similar terms, is perceived as motivational. As a programme coordinator explained:

> 'And while I do believe that we cannot motivate researchers in the strict sense of the word, as they typically motivate themselves, I also think that I can stimulate their motivation with challenges. That is what I try to do here. While I talk to people about the topics they are working on, the drive, the flame, the energy has to come from the inside. We do not necessarily share the same excitement about a research topic. A topic that motivates me may not motivate others and vice versa. Therefore, I try to capitalise on what researchers find interesting by, for instance, raising questions. People find this stimulating.'

This suggests that research managers can enhance motivation for research work by means of an active involvement in researchers' work processes. By directly supporting the research process, respondents envisage to indirectly support the quality of the research content. In different terms, research managers' sensitive and experienced assistance with the niceties of researchers' work processes is believed to have a motivational impact, as it helps them handling the soft sides of their work.

Work assessment

Research managers called attention to the fact that researchers' work is developed against the backdrop of organizational frameworks that involve, among others, procedures, goals, budgets, and performance rules. Altogether, these aspects influence in many ways and magnitudes the ways researchers go about their work, for example, their research choices, priorities, and publication strategies. A prime source of influence here is the work assessment vis-à-vis the reward system in place. The principles and practices of such systems embody a fundamental organisational strategic decision: the distinction between warranted and unwarranted research knowledge. As the process of distinguishing involves discriminating between potentially competing, or closely related stances, this issue is clearly motivationally laden. The architecture of the assessment and reward systems is thus believed to have a motivational impact. As a programme coordinator argued:

> 'The assessment system has certainly an impact on motivation. It may well happen that researchers will conduct research in a less risky manner. With the current system, one cannot afford to work for years on a 'certain' idea. Ideas have to produce results within the period of the evaluation. Researchers know

> that it is risky to move to different research domains. However, moving to something new is quite motivating as well. Yet, as it takes time to move into a new field, one cannot afford that. Risk avoidance can be a drawback of our current system.'

Or, as another programme coordinator suggested:

> 'The current assessment and incentive system is de-motivating, for it leads to a short-term vision, which forces researchers to produce things they are neither happy with nor they associate with research quality.'

Irrespective of the rather sceptical terms in which the assessment systems are portrayed in these quotes, they still offer valuable motivational clues. They suggest that the current assessment system can be seen as conformist and stressful, and that both conservatism and rush are believed to thwart motivation. They may also indicate that respondents see the adoption of a stricter performance culture, involving targets, deadlines, etc. as affecting motivation. This does not imply that, given their potentially negative influence on researchers' motivation, respondents rejected the idea of assessment and reward systems altogether. On the contrary, research managers stressed that the architecture of such systems can stir up motivation, providing they are able to engender a sense of parsimony and trust. As a programme coordinator suggested:

> 'I think that performance assessment systems are becoming far too complex. We can make it as complex as we want, though I consider that a simple system is preferable to a complex one. Complex systems appear more valid, but they create an awful amount of quarrels, discussions, and bureaucratic work. A simple system is more efficient, is more motivating, and it costs less time and money to function.'

Or, as a research director argued:

> 'We consider the perceptions of transparency and of fairness determinant for the effectiveness of the assessment system. Providing we need a system, the type of system in place is immaterial. If people believe in it, it can work as an incentive. Researchers should not feel stimulated to work for a system they consider as poorly conceived or unfair.'

Respondents recognised also that researchers are not sensitive to money in a strict sense. However, they emphasised that extrinsic rewards can be motivating, as long as they mirror the informal recognition mechanisms of

science, or support the researchers' personal development. As a programme coordinator argued:

> 'I think that research management should also strive for trying to adjust the internal system of formal recognition with the external and informal one. In a way, we will be able to retain the good researchers as long as these two forms of recognition are somehow in balance.'

Or, as another programme coordinator explained:

> 'If people are intrinsically motivated and there are no external incentives for research, people might not publish. This should thus be a priority: to establish the right incentives likely to trigger people to do research. Researchers who are intrinsically motivated also value extrinsic motivators.'

Overall, these findings suggest that the organisational mechanisms employed to distinguish and reward the goodness of research knowledge affect researchers' inner drive. Their motivational influence can be positive, providing they are able to combine credibly administrative imperatives with the informal recognition mechanisms prevailing in science.

6.6 DISCUSSION

We would like to start this discussion by restating that research managers, for the most part, are researchers themselves. At one level, this liminal position is not trivial, given the potentially conflicting normative expectations that may result in mixed feelings and compromised behaviour associated with role ambivalence (c.f. Merton and Barber, 1976). At another level, this ambivalence may also be a condition for being aware of researchers' needs, ambitions, fears, and limitations. Their valuable experiences and practices enabled us conceptually to explore the connections between motivation and the knowledge aspects of research work from a quite privileged viewpoint.

Our data show that research managers consider intrinsic motivation to be the prime motivational source of research work creativity and quality. That the concept of intrinsic motivation rises to the surface as a prime beacon for making sense of researchers' motivation is probably unsurprising, given the popularity of that concept. The researcher's intrinsic motivation is perceived as not amenable to their direct sphere of managerial influence. Yet, managers consider other motivational sources critical for the accomplishment of research work, and seek ways to influence them actively. In so doing, they seek to promote stimulating working conditions so that researchers' intrinsic motivation pool does not dry out, compromising the creative processes. The

systematic and careful application of the principles and techniques of the grounded theory approach (Glaser and Strauss, 1967) adopted in this research, indicates that research managers' concern as regards the motivational sources for the advancement of research work coalesces around three key themes: work context, work processes, and work assessment. Next, we discuss each of these concepts.

6.6.1 Work context

Research managers believe it is motivating to have a stimulating physical, social, and intellectual work context. A stimulating context can here be seen as one that partly reproduces the cosmopolitan social dynamics that inform and shape research knowledge advancement. Promoting research seminars, fuelling discussions, or inviting guest researchers is seen to encourage positive feelings and researchers' inner drive. This aspect points to two important directions. First, it suggests that the organizational architecture of the working place inspires researchers' morale, providing it partly reflects the social fabrics of science. Second, it suggests that respondents cannot think of motivation for research as detached from the social and cultural mechanisms that render research work scientific value. The combination of these two aspects draws attention to the socially constructed character of research work. Science is an activity of human beings acting and interacting; thus it is a social activity. Its knowledge, it statements, its techniques have been created by human beings developed, nurtured and shared among groups of human beings (Mendelsohn, 1977, p. 3-4). Therefore, the local reproduction of the cosmopolitan social mechanisms of science is not only seen as necessary to further knowledge, but also – or perhaps, because of that – to encourage researchers' intrinsic motivation. This clearly resounds with the notion that motivation can be seen as 'a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behaviour, and to determine its form, direction, intensity, and duration' (Pinder, 1998, p. 11). This definition draws attention to the influence of both environmental forces (e.g. organizational reward systems, the nature of the work), and forces inherent in the person (e.g. individual needs and motives) on work-related behaviour (Ambrose and Kulik, 1999). Surprisingly enough, none of the motivation theories that appear most popular for addressing motivation issues with respect to knowledge work addressed in the first part of this paper (self-determination, two factor, goal-setting, job-characteristics, and self-efficacy), allude to the social context or work situation as a critical motivating aspect, or as an explanatory variable for emotional binding. These theories identify critical psychological states associated with work motivation. They are illuminating in that they shed light upon the crucial behavioural mechanisms that explain different degrees of emotional engagement and endurance in task

performance. However, perhaps owing to their psychological background, they seem to fail to assign a motivating role to the work context. The results of this study clearly show that this aspect cannot be sidestepped, if we are to have a thorough understanding of how does motivation relates to the knowledge aspects of work.

6.6.2 Work processes

While the creative process is seen mostly as an isolated affair, respondents suggested that it is motivating for researchers to assist them handling the soft sides of their work. This constitutes the second motivational source. Research managers' assistance with the research processes, conveyed in the form of professional or personal advice, is grounded in their professional experience and personal networks. Their advice may thus involve practical and symbolic significance, as it is, in principle, informed by the idiosyncrasies of specific research communities (e.g. norms, values, approaches, trends, etc.). The norms of communities do not exist 'out there' (incorporated in external objects, routines or systems), or 'in here' (inscribed in human brains, bodies, or communities). There are ongoing social accomplishments, constituted and reconstituted in everyday practice (Orlikowski, 2002, p. 252). Research managers are active brokers for those idiosyncrasies within research organizations. Eventually, owing to this practice-based experience and to their 'in-between' position in the organisation, they can also bargain for the recognition of subtleties associated with the research process. The combination of these two aspects may well render their assistance the trustworthiness needed to motivate researchers in the process. Supervisors' professional knowledge and expertise to help solving problems and improving performance, that is, informed assistance, is believed to affect motivation positively (e.g. Mitchell et al., 1975; Elangovan and Xie, 1999). While intrinsic motivation is seen as crucial for starting up a research project, or pursuing a novel line of research, it is also believed not to suffice for accomplishing research work successfully. As a programme coordinator said, 'there is a tremendous challenge associated with bridging the temporal gap between the excitement about an idea and the stage of writing it down'. During this trajectory, one in which the real research work gets done, researchers have to muddle through many unexpected pains and pleasures. Research managers, therefore, believe that they can help lubricating the intricacies associated with the research processes, and that their assistance is motivational. This grounded motivational source, resounds at the level of two motivation theories addressed above in this paper. Research managers' assistance with the work processes may help researchers refining their approaches, as well as their goals, according to their technical viability or organizational appropriateness (goal-setting and self-efficacy theories).

6.6.3 Work assessment

The architecture of the work assessment and associated reward systems in place is believed to have a motivational impact. The principles and practices of both systems are rooted in a fundamental organisational choice as regards which sort of research knowledge is warranted and so rewarded accordingly. Associated with that choice is the need to discriminate between alternative or competing knowledge views. These different views may involve distinctive sets of fundamental assumptions as to what constitutes reality (ontology) and how to go about making sense of it (epistemology), which inevitably infuses research choices, methods, and even professional careers. It is hardly surprising, though, that the ways organisations choose to evaluate and discourage the products of work are shrouded in an emotional and motivational fog. A prime source of tension here is the risk of divergence between perceptions of quality by management, as embedded in assessment and reward policies, and perceptions of quality among researchers. One of the most critical problems of managing scientific work is that of evaluation, involving the assessment of quality and quantity, in addition to creativity and productivity (Cole and Cole, 1967; Ahmad, 1981; Lambright and Teich, 1981). There is indeed cause for scepticism as to whether the work assessment and rewards systems, which stress quantifiable and accountable outcomes, can really capture the essence of researchers' work, while not impairing their professional creativity (Ewan and Calvert, 2000; Harvey et al., 2002). Respondents stressed though that these systems may have a positive motivational impact, as long as they are able to combine the organisational imperatives with the various research idiosyncrasies. Unlike the situation concerning the two other motivational sources – work context and work processes – research managers' assistance is here more limited and indirect. Research managers' assistance shows via attempts to negotiate special privileges or exemptions for their research groups, given the specific idiosyncrasies of their research communities. Stated differently, a compromise between cosmopolitan and local assessment and reward systems, that is, a balance between external and internal credentials is believed to inspire researchers' morale positively. This concern connects with the principles of two motivation theories addressed above, as such frameworks affect the ways research goals are specified (goal-setting theory), and the perceptions as to ones' capabilities and competences to accomplish them (self-efficacy theory).

6.7 CONCLUSION

Knowledge management (KM) researchers and practitioners show a sustained high level of interest in matters of motivation. Simultaneously, there is a growing awareness of lacking insight as to how motivation plays a role in the

knowledge arena, and how and when KM may improve or decrease motivation. An understanding of the potential effects of KM initiatives and programs on motivation, which is a critical but overlooked topic in KM research, presumes an understanding of how motivation relates to the knowledge aspects of work. In this paper, we outlined and discussed the motivation theories that appear most popular for addressing motivation issues in regard to knowledge-related aspects of work. Drawing on the principles and techniques of the grounded theory approach (Glaser and Strauss, 1967), we then explored conceptually how work motivation is perceived and promoted within the empirical context of the management of a knowledge-intensive activity, viz. the management of academic research work.

The research findings presented in this paper show that intrinsic motivation is believed to be both *the* leading motivator for accomplishing research work, and beyond research managers' sphere of influence. The sources of researchers' work motivation that are believed to be critical and amenable to their influence revolve around three key notions: work context, work processes, and work assessment. We strongly believe that the nature of our substantive theoretical findings allows us to establish a conceptually more rich connection between motivation and knowledge work and to draw two important and related general implications. First, although knowledge work largely relies on individual skills, talents, or competences, the accomplishment of knowledge-intensive work is inherently a social activity. The social interactional mechanisms are powerful for accomplishing knowledge work in that they are not only able to inform workers' selections, exclusions, approaches, and even careers, but they also craft the criteria by means of which the standing of the work produced can be recognised. Second, in order to be conceptually and empirically valuable, an understanding of the motivators for knowledge work cannot be entirely detached from the social and cultural mechanisms that render knowledge work significance. It appears plausible to argue that a perspective on knowledge is necessary for understanding how knowledge and knowledge work can be motivated. For instance, research managers who believe that research should be more applied, transdisciplinary, and socially accountable, may experience different views as to *what* motivates and *how* to go about research work, when compared to those that think of it as fundamental, disciplinary organized, and self-regulated (for a thorough discussion see Gibbons et al., 1994). This suggests that while the most popular motivation theories for addressing motivation issues with regard to knowledge work are useful to unveil the critical individual emotional mechanisms, they fail adequately and comprehensively to acknowledge the relevance of external forces (c.f. Pinder, 1998).

The motivation for knowledge work appears as an intriguing phenomenon that we are only beginning to understand. Its relevance for KM derives from

the fact that it connects the content side of knowledge work with the associated aspects of knowledge work processes and knowledge-friendly organization structures to the people side of KM with its attention for talents and competences. At one level, the way work is organized appears crucial for motivated knowledge workers. At another level, their individual talents, dispositions and intrinsic motivation will eventually decide whether the promises of a knowledge-friendly work environment are fulfilled. Furthering our understanding of what to do and what not to do in attempts to boost knowledge work motivation, requires a deepened understanding of how motivation relates to the various themes, such as creativity and knowledge sharing, that define what is commonly described as knowledge work. Only by lifting the veil of such container concepts as knowledge work and knowledge worker we may hope to unravel the motivation aspects involved.

CHAPTER 7

The constituent role of talk in the social organization of knowledge work

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7.1 INTRODUCTION

During the last decades of the twentieth century, discussions of organizational knowledge became a focus in organization studies (e.g., Grant, 1996; Davenport and Prusak, 1998; Alvesson, 2001). These discussions became increasingly critical, questioning the conceptual adequacy of how various advocates of knowledge management (further referred to as KM) develop an understanding of knowledge and associate management. The critics label much KM thinking as functionalistic, based on limited cognitive-possession thinking of knowledge (e.g., Yanow, 2000; Alvesson, 2004). As an alternative, they have elaborated on various manifestations of a social-process approach to knowing that highlights aspects of communities and practice (for critical overviews, see Schultze and Stabell, 2004; Chiva and Alegre, 2005). These critical accounts imply that in many debates on organizational knowledge, the social organization of work is inadequately addressed.

Talk is hardly an issue on the agendas of social-process approaches to organizational knowledge. Yet talking is a key mechanism through which knowing is established as a social process. Through social interaction, people get to know each other and social relationships are crafted, nurtured, modified, or abandoned. Socialization enables purposeful collective action. Knowing how to collaborate in order to get things done requires use of language. As language enables, reflects and structures relationships, language can been seen as a powerful social strategy that gets people to do things, gets people to say things, draws people's attention, and maintains social relationships (for a thorough discussion, see Guerin, 2003). Therefore, language, and most notably talk, represents the prime medium through which meaning is shared and negotiated within organizations (Musson and Cohen, 1999). Talk is not only the most pervasive form of social behaviour (Boden, 1997), but it also constitutes the primary medium through which human beings make sense of their world (Turnbull and Carpendale, 1999). Talk is essential to understanding the inscrutable nature of organizational life, even if its evanescent qualities make talk itself and its constituent effect on organizations hard to grasp. Few can dispute its power, as organizations are created, sustained, and changed through talk (Mangham, 1986). To put it differently, organizations are made to 'tick' through talk (Boden, 1997).

While most organizational actions are conveyed through different, relational, layers of talk, it seems particularly intriguing that, apart from a few notable exceptions (e.g., Alvesson and Sveningsson, 2003), its significance is completely absent in KM-related debates. This is particularly problematic when a social-process or community approach to KM is adopted, because the mechanisms shaping social communities derive their form and existence from talk. For instance, talk-in-interaction defines the very existence of

communities of practice (Lave and Wenger, 1991), communities of knowing (Boland and Tenkasi, 1995), and epistemic communities (Haas, 1992). This absence is taken as an outstanding opportunity to examine critically the role of talk in knowledge-intensive domains.

This paper contends that understanding how a social-process approach to KM evolves, presumes understanding how talk shapes the social organization of work from a knowledge perspective. Talk provides a potentially powerful concept for connecting knowledge-based understandings of work to understandings of management related to work. The knowing that defines work equally depends on talk acts as the knowing that defines management. The practices of talking may be studied in their role as facilitators for connecting the two understandings without driving a wedge between them. Which role does talk play in the coming about and implementation of management knowledge to ensure that the talk that constitutes workplace knowing is done justice? Questions such as these focus only on the talk forms related to the social organization of work, as opposed to those related to the construction of meaning in organizations, such as metaphors, myths, jokes, and stories (c.f. Musson and Cohen, 1999). The question then is whether and, if so, how a conceptual exploration of managers' conversational practices improves our understanding as regards the social mechanisms informing the organization of knowledge work. The focus of attention here are the management perceptions and practices in one particular knowledge-intensive domain, that is, the management of academic research. Broadly defined, academic research management is an activity aimed at improving the effectiveness and quality of research. Academic research is a timeless and innate type of knowledge-intensive work. When compared to knowledge-intensive activities that have typically received much attention in KM studies, such as management consultancy (e.g., Alvesson, 1995) or research and development in business environments (e.g., Farris and Cordero, 2002), academic work and its management appear as particularly interesting. Academic research involves knowledge creation in perhaps its purest sense. Therefore, management of academic research constitutes an outstanding example of the management of a knowledge-intensive activity that allows an unravelling of the fundamental intricacies involved in imposing management purposes on a potentially 'purposeless' activity (cf. Fuller, 2002).

In order to answer the question posed above, first the constituent role of talk in organizations is discussed. Next, the findings are presented of an empirical research on academic research management within the domain of business administration and management studies in the Netherlands. In this study, which relies on the principles of the grounded theory approach (Glaser and Strauss, 1967), talk emerged as a social practice informing and reflecting virtually all managerial actions. The penultimate section discusses how the

activity of research managers revolves around various forms of talk. Theoretical implications are drawn from this discussion. The last section gives conclusions.

7.2 TALK AT WORK *AS* WORK

Organizations can be seen as networks of intersubjectively shared meanings that are sustained through the development and use of a common language in everyday social interaction (Burrell and Morgan, 1979; Alvesson, 1994). Social interaction is conceived as a process through which people orient and align their conduct toward one another, and toward a common set of objectives (Blumer, 1998). Since language can infuse and structure actions within the context of perceived realities (c.f. Musson and Cohen, 1999; Turnbull and Carpendale, 1999; King, 2003; Sturdy and Fleming, 2003), it embodies the channel through which most social interaction is accomplished. Language is, after all, one of the key tools of social influence (Pondy, 1978), as it is through language that individuals seek to justify themselves, legitimise their actions and persuade others (Davis and Luthans, 1980). The most vivid point of convergence between language and social organization is to be found at the level of speech acts, making these central to the analysis of all forms of interaction (Drew and Heritage, 1992). In other words, social phenomena exist only because the capacity for speech has made complex social organization possible (Boden, 1997). Everyday talk, which is embedded in language and speech, thus becomes the primary medium through which humans make sense of and act in their world (Boden, 1994).

Few can dispute the power of talk within organizations, as it is inherent to almost every part of the organizing practice (King, 2003). Through multiple layers of everyday talk, people in organizations compete for resources, negotiate their environment, discuss agendas, discover or create shared goals and interests, uncertainties, potential coalitions, conflicts, and generally muddle their way through the maze of organizational life (Drew and Heritage, 1992; Boden, 1994; King, 2003). Because talk portrays and recreates the heterogeneity and complexity of organizational life, while ensuring that the everyday business of organizations is accomplished, talk creates action within organizations (c.f. King, 2003). Therefore, talk is central to the very essence of organizations (Boden, 1994), as it enables professionals to pursue most of their working activities and practical goals (Drew and Heritage, 1992). Therefore, it is likely to surface in and pervade across strategies, inferences, judgments, routines, promises, procedures, norms, values, frameworks, codes, choices, selections, and the like. Talk is necessary and powerful in at least two senses. First, it does things for the speaker, as it discloses his or her opinion of a certain matter to others. Second, talk gets others to do things both

mechanically and by means of influence (Gronn, 1983). Through talk, people not only reproduce the dominant and perceived institutionalised arrangements, but they also significantly create and recreate fine distinctions that make the organization come alive (Boden, 1994). For instance, it is in the social context of talk that problematic situations are defined, because talking about a problem structures its nature (Hewitt and Hall, 1973). In most organizations, people mix work tasks with social interaction and they do so largely through talk. Since the organising and structuring of organizations is primarily a talk-based process, talk and task tend to intertwine in finely tuned ways (Boden, 1994; King, 2003). By means of talk, people reconcile and align their own beliefs and actions, enabling organized action to occur (Donnellon et al., 1986).

Surprisingly enough, models of management and organizational behaviour often fail to acknowledge that managers' work is interactive by nature (Davis and Luthans, 1980). The interactive nature of management indicates that most management work is conversational. When managers are in action, they are talking and listening (Stewart, 1983; Eccles and Nohria, 1992), which draws attention to the inherently relational nature of their role. The managers' world is a verbal and oral one, as much time is spent in persuading, justifying, and legitimising past, present, and future courses of action (Davis and Luthans, 1980). Observing managers in action shows that even though they may describe their work in rational terms, they spend very little of their time explicitly engaged in planning, organizing, staffing, directing, coordinating, reporting, and budgeting (Eccles and Nohria, 1992). Most of the managers' time is spent in verbal interaction with others, for instance, in scheduled or unscheduled meetings, phone calls, personal visits, etc. (Davis and Luthans, 1980; Eccles and Nohria, 1992). As Mintzberg (1973) puts it, virtually every empirical work on management and time allocation draws the attention to the great proportion of time spent in verbal communication. Managers spend between 70 and 90 percent of their time engaged in some form of talk (e.g., Mintzberg, 1973; Gronn, 1983; Eccles and Nohria, 1992). This is not just an attribute of top managers, as middle managers were also found to spend most of their time talking and listening to other persons, exchanging information, advice, and instructions, mostly face-to-face, or informally in small groups (Horne and Lupton, 1964). These authors conclude that managers' talk is mainly about problems of organizing, regulating and unifying, that is, about how to get things done.

Consequently, the claim that managing concerns talk (e.g., Boden, 1997; King, 2003) does not really come as a surprise. 'Talk *is* the work,' as it not only 'consumes most of a manager's time and energy,' (Gronn, 1983 p. 2, emphasis in the original) but it is also a powerful instrument or tool for performing actions like influencing, persuading, or manipulating. Several studies stress

that talk infuses and informs managerial activity. For instance, Gronn (1983) shows that talk not only accomplishes administrative work but is also used to tighten and loosen administrative control. Donnellon (1996) argues that teams do their work through language and that talk is the medium through which teamwork is done. Forray & Woodilla (2002) contend that human resource managers construct and sustain notions of 'fairness' and 'consistency' through their talk. King (2003) says that talk is the 'glue' that holds together the vital liaison between doctors, nurses, ancillary staff and patients. And, Alvesson & Sveningsson (2003) draw attention to the relational nature of talk, arguing that talking and listening informally creates feelings of participation, confirmation, engagement, interest, visibility, and respect.

7.3 METHOD

The goal of this paper is to contribute to the theoretical debate about how managers' talk relates to the organization of knowledge work. More specifically, it is explored whether and, if so, how dominant conversational practices reflect and structure the organization of knowledge work. It is argued that academic research management qualifies as a striking example of a social-process approach to knowledge management, as it can be seen as a practice-based activity broadly aimed at facilitating interpersonal knowledge sharing processes via supporting social participation and cooperation. Research managers' perceptions, experiences, perspectives, and practices constitute a valuable source of theorizing.

At first sight, the established research tradition of conversation analysis (e.g., Drew and Heritage, 1992) appears to show a close connection to the topic of this paper. This method enables researchers to track down the fine subtleties of actors' conversations and to unpack the dynamics of language-in-interaction. Yet, the purpose of this paper is different as it seeks to provide a conceptual interpretation of research managers' conversational mechanisms employed as social strategies to get the work done, rather than perform an accurate analysis of their discursive or rhetorical modes. It is believed that language alone has no magic power to make things happen. Its power to do anything lies in the social and economic functioning of social relationships, rather than in linguistic practices themselves (Guerin, 2003).

The Grounded Theory Approach (GTA, Glaser and Strauss, 1967) appears particularly useful for this task, as it highlights the relevancy of the participant's experience, opinions, and actions. GTA is a highly systematic and inductive methodology used for the collection, analysis, and continuous comparison of data. As an inductive method, GTA seeks to discover theoretically relevant concepts among data, rather than among existing theories. The purpose is the generation – not the verification – of theory used

in describing and explaining basic common patterns in social life (Glaser and Strauss, 1967). The GTA method has largely been developed in studies of professional work carried out in complex organizational settings, making it particularly appropriate for researching managerial and organizational behaviour (Locke, 2001). Moreover, Locke offers several other characteristics of research situations in which adopting a GTA has proven appropriate. She maintains that the method is useful for capturing the complexity of the context in which the action unfolds. She argues that it links well to aspects of practice, enabling the participants to gain a perspective on their work situation. She also shows that it is helpful for enlivening mature theorizing, as it brings new insights to established theoretical areas.

7.3.1 Empirical research setting, interview structure and data analysis

This study examines the management of publicly funded research, that is, research not financially dependent from or commissioned by commercial sources. It was conducted in the field of business administration and management studies in the Netherlands. Within this field, research is organized by research institutes whose management structure comprises a director and programme coordinators. The former delineates the overall research strategy, whereas the latter organize the research at the group level.

Data collection took place between March 2003 and August 2004 and included institutes with research programmes explicitly organized around that research domain: the universities at Eindhoven, Enschede, Groningen, Maastricht, Nijmegen, Rotterdam, and Tilburg. The research-related documentation (e.g. description of policies, themes, and goals) was analysed in order to gain an understanding of how research is formally organized. One of the researchers conducted twenty-nine in-depth semi-structured face-to-face interviews with research managers. While the scope of the interviews was broader, this paper focuses on the answers to two general questions. First, respondents were asked how they perceive research management. Second, they were invited to reflect on how they conduct research management. The interviews took about two hours and were all tape-recorded. The respondents were sent a concise transcription of their accounts for assessment. The respondents' accounts were coded immediately and consecutively after the interviews in order to raise the theoretical sensitivity to emerging concepts that the GTA method ensures (c.f. Glaser, 1978). In addition to the codes, an analytical elaboration of the meaning and possible relationships with other codes was explored in memos.

7.4 FINDINGS

> 'What I do most is talking to people. Research management implies talking, discussing and negotiating with the board as well as talking to researchers. Research management is all about communication.'
>
> Research Director

This section elaborates on the theoretical key concepts that represent research managers' conversational practices. Talk appeared to play a role at the level of the institute, the level of research groups, and the level of individual researchers or research collaborations. The presentation of the findings is accordingly organized in three parts. These talk domains or talk forms are labelled as 'hard talk', 'big talk', and 'small talk', respectively. Next, each of these talk forms and how they were addressed in the interviews is discussed in some detail. The quotes are provided for illustrative purposes. They are not meant to offer an accurate description of research managers' perceptions, which would be at odds with the principles of the method adopted.

7.4.1 Hard talk

What is labelled here as 'hard talk' represents the structured conversational forums that define the bureaucratic mechanisms of organizational maintenance. In these forums, participants' talks focus on key strategic discussions that involve, for instance, fundamental choices and decisions about the positioning and structure of research institutes, research groups, and the sort of warranted research output these are expected to deliver. At this level, talk may involve discussions about issues such as the definition of criteria for allocating resources based on performance, the selection and specification of quality assessment exercises, or the evaluation of hiring needs. As one research programme coordinator explained:

> '(…) we have regular meetings in which we review the performance of the different subgroups. We try to assess the quality of their research, their productivity, the funding opportunities, and the like. We cannot afford to let things go their own way, looking at them from a distance, and only intervening when something is getting out of hand. We need clear directions and guidelines, which can be changed occasionally.'

Or, as a research director associate argued:

> '(…) heads of departments are, for instance, responsible for appointing researchers and conducting the annual performance appraisal. In order to ensure that there is a coherent idea as regards to where we are going, we are in

> regular contact with the research coordinators. The devolution of responsibilities to coordinators is not a one-time event, since they always revisit us with lots of questions (for example, whether we can facilitate a particular activity). It is a back-and-forth process.'

Hard talk can be understood to be aimed at defining, justifying, or inculcating a sense of direction and purpose that serves to select courses of action amongst competing alternatives. The underlying process is dynamic and relational, rather than rigid or unidirectional. The organizational framework emerges not as static, given, imposed upon, or enacted, but as rather open. This suggests that the conversational mechanisms aimed at defining the institutional normative framework in which academic research takes place are open to reinterpretations, concessions, and adjustments. It is a back-and-forth process, as highlighted in the quote above. In these forums of talk, research managers have the chance to discuss, for instance, the appropriateness, validity, or attainability of the research institute's goals and orientations vis-à-vis those of the researchers they represent. This enables research managers to put the subtleties of different research communities in the front seat of their conversational activities. As one programme manager claimed:

> '(…) we have to bargain to get time for those kinds of activities. We have been discussing this with the research institute and, although we are not as free as we would like to be, we do have some elbow room.'

Or, as a research director associate put it:

> 'The heads of department have much elbow room to deviate from the institute's guidelines. Everything depends on their personal experience with the researchers and on the negotiations between them.'

Hard talk has an important role in terms of defining the bureaucratic framework aimed at defining and guiding the sort of research behaviour that is preferred and 'rewardable'. However, the participants' extensive use of terms such as 'bargaining', 'elbow room', and 'negotiation' suggests that they are not precluded from negotiating special privileges or exemptions for their research groups, given the specific idiosyncrasies of their communities. It appears that negotiation over performance norms, targets, or deadlines is tacitly accepted as part of the game. Hard talk both reflects and refines the development of the organizational standpoint regarding what qualifies as warranted knowledge (e.g. recognition, grading, and rewarding). It also informs the conversational practices as to how to organize these processes at

the organizational and group levels. This pattern of negotiated regulation also emerged at the group level, where forms of big talk dominate.

7.4.2 Big talk

Big talk, our second sensitizing concept, is also part of the organizational maintenance apparatus. It concerns the conversational practices taking place at the group level. Big talk aims here at defining concerted approaches to cope with the organizational performance requirements. It involves, therefore, resolving, or at least fine-tuning, potentially conflicting interests between research institutes and researchers. Again, it is a back and forth process, as unbalanced expectations become subject to mutual adjustments. Big talk involves explorations, definitions, and legitimizations of possible approaches to this adjustment process, rather than directive or forcing activities. For instance, the concept of big talk may inform the discussions regarding the profile of the research group. As a research programme coordinator put it:

> 'The development of a research programme in which researchers will focus their attention in the coming years has to be performed together with the researchers. It is crucial that researchers agree with the research focus, for a lack of consensus may have a negative impact on their motivation.'

The notion of big talk is in line with the classical collegial decision-making processes, as the group discussions are aimed at identifying or constructing legitimised courses of action. The absence of consensus, or of legitimacy, involves the risk of fractionating the undertakings of the group. Big talk, therefore, can be found across the discussions about which practices are best suited for the development of the group. As one research programme coordinator argued:

> 'The department meets every 4 weeks (…). During these meetings we discuss, for instance, what sort of structural changes are needed to ensure that both quality and quantity of research output increases. The question that pervades these fevered discussions is how we can ensure that people do research and publish.'

Or, as another research programme coordinator mentioned:

> 'Internally, we discuss which conferences we should attend, what contacts we should make at the institute level, and who should go on a sabbatical and where. We have to come up with these questions. Do we want to have our knowledge there? Do we want to get something from them? How do we position ourselves

> in the global research community? This is something to manage, which is, managing in terms of ensuring that the group has the right position.'

Clearly, big talk has a supportive role. It does not only shape the mechanisms aimed at stimulating the development of an intellectually inspiring work context, but it is also expected to enhance the social climate of the research group. It is felt that content-related discussions increase social bonding. This reinforces the belief that improving research content cannot be dissociated from the social context in which research takes place. As a research programme coordinator argued:

> 'Group meetings are stimulated because they allow discussions about research products, in addition to more ordinary problems. These meetings can also enhance cooperation across researchers.'

Or, as another research programme coordinator explained:

> 'We have periodical discussions in which people talk about new research ideas or projects they might be involved in. We can then offer comments, criticisms and suggestions to the emergent ideas. Most of the rest is related to the content side of research and is divided into two major activities. First, I provide ad-hoc support to the people who, for instance, got stuck in the writing process or are digesting a rejection and seek to discuss these matters with me. Second, I participate in the discussions of PhD projects, which reflects an indirect collaboration between me and the other researchers.'

The formal discussions taking place at the group level thus involve coaching elements. This suggests that within the realm of big talk, research managers also find motives and room for ad-hoc and personalized support. We then slide into the third layer of talk. This layer concerns managers talking to researchers to help them make sense of opportunities and making the best of them, to lay out alternative courses of action, or to discuss any difficulties while motivating them at the same time. This important layer of talk is called small talk in this paper.

7.4.3 Small talk

The deeper layer of small talk pertains to the more subtle, spontaneous, informal, but by no means less useful sort of corridor talk. This type of talk is likely to inspire and frame research behaviour in different ways and magnitudes. It involves a subtle combination of professional advice, counselling, and nursing, with personal support. At this level of interaction, managers become familiar not only with researchers' characters, but also, and

perhaps more importantly, with the potentially different ways researchers in their group may conceive research work. This is significant for their task, as this may reflect researchers' affiliations with particular research communities, rather than narrow individual standpoints. This may enable research managers to come to grips with the research idiosyncrasies (e.g. topics, trends, methods, etc.) that are valued within particular communities. As one research programme coordinator argued:

> 'At the end of the day, the practice of research management boils down to communication. Communication is the most important element in managing research or managing whatever activity, anyway. It is important to listen to what people have to say, to be receptive to their ideas and to try to understand the sensitivities of the different subgroups and researchers.'

Or, as another research programme coordinator suggested:

> 'I can help researchers find a way to make better use of their knowledge, capabilities and networks. Since we have a small group, this sort of assessment, support and advice is done on an individual basis.'

At the level of small talk, research managers prefer informal, ad-hoc, and personalised contacts as opposed to the formal mechanisms of both the hard and big talk forms. This form of micro-social interaction is perceived as valuable in terms of assisting researchers with the soft sides to their work. It is at this level that trust may develop. It is also at this level that research managers may get to know researchers' genuine ambitions, interests, frustrations, or fears. As a research coordinator argued:

> 'This is why trust, transparency, open-mindedness and cooperative attitudes are so crucial. Therefore, research managers need to understand researchers' sensitivities. If they take too many things for granted, problems are bound to arise. This is perhaps the most acute challenge that research managers face. They have to look at the other side of the medal and understand researchers' problems. A research manager needs to communicate with researchers and understand their sensitivities, rather than being dogmatic about things.'

At the level of small talk, informality clearly dominates the talk agenda. Research managers' facilitating work is promoted via intimate channels, unlike what occurs at the levels of hard and big talk. Informal channels are useful to help research managers and researchers handling the more mundane aspects of the work. As a research programme coordinator argued:

> 'I try to keep the number of meetings as low as possible. I consider the informal interpersonal contact a privileged way of interaction. I always keep my door open; if something has to be done, discussed, or decided, we can easily walk into each other's rooms.'

As a result, one of the anticipated consequences of this personal, informal, and delicate form of talk is that it will have a motivational impact. This may partly circumvent the limited sphere of influence research managers showed with regard to researchers' motivation. As one research programme coordinator argued:

> 'It is much easier to start things than to finish them, and the thing in-between is the hardest. There is a tremendous challenge to bridge the temporal gap between the excitement about an idea and the stage of writing it down. It is thus motivating to ask and to remind people how are they doing and if they need some sort of help.'

Generally speaking, small talk represents the casual, sensible and supportive side of research management, which is likely to help researchers re-framing, re-assessing, and re-positioning their goals, approaches or expectations, so that a legitimate compromise is achieved with stricter guidelines defined by the hard talk and refined at the big talk level.

7.5 DISCUSSION

The systematic comparative analysis of the data, based on the grounded theory approach (Glaser and Strauss, 1967) adopted in this research, shows that talk can be understood as a multilayered, multifaceted, and multipurpose-social practice that enables specific courses of action to be defined and pursued. The data indicates that three intertwined layers of talk characterise the conversational practices of research managers. These are the levels of hard talk, big talk, and small talk. Table 1 shows a characterization of the proposed talk forms, according to three dimensions: the purpose (what is the talk aimed at?), the processes that carry them (how do the talk forms happen?), and the by-products they engender (the expected outcome of the talk actions). The talk forms are proposed as sensitizing, rather than definitive concepts (Blumer, 1998). Just like metaphors, these concepts seek to evoke an image of the various 'shapes and sizes' conversational activities may assume when conceived of as social strategies. The combination of these types of talk illustrates the process through which research managers earn their sphere of influence and get their work done, given the dynamics of evolving research communities.

	Hard Talk	Big Talk	Small Talk
Purpose	Strategy definition	Contextualisation	Sense-making
	Discrimination	Group profiling	Meaning making
	Specialization	Group maintenance	Coaching
	Evaluation	Social bonding	Belongingness
Process	Programmed	Programmed	Ad-hoc
	Formal	Formal	Casual
	Negotiation	Social	Personal
	Relational	Relational	Relational
By-product	Norms and values	Cooperation	Motivation
	Negotiation space	Awareness	Trust
	Guidance	Profiling	Development
	Regulation	Collective learning	Nursing

Table 1 Types of organizational talk in research organisations

Small talk surfaces in discussions between researchers who do research and researchers who manage research. This atypical formulation is needed, as most research managers interviewed are simultaneously administrators and researchers. This ambivalence blurs the traditional distinction between the manager and the managed. Ambivalence is taken here in its sociological, rather than in its psychological, sense. Sociological ambivalence refers to a 'conflict of interests or values' in which the interests and values incorporated in *different* statuses occupied by the same person result in mixed feelings and compromised behaviour (Merton and Barber, 1976, p. 9, emphasis in the original). Individual researchers can be members of multiple research groups and/or of several research organizations, operating locally and/or internationally. Because of this ambivalence, research managers are simultaneously members of local and global communities. This aspect makes them not only prone to ethical conflicts, but also privileged brokers of the research communities' idiosyncrasies (e.g. research norms, values, trends, approaches, etc.) within research organizations. All these communities possess their own developing practices of sense-making and knowing, which surface in those idiosyncrasies. The norms of communities do not exist 'out there' (incorporated in external objects, routines or systems), or 'in here' (inscribed in human brains, bodies, or communities). They are ongoing social accomplishments, constituted and reconstituted in everyday practice (c.f. Orlikowski, 2002). Thus, research managers' small talk is vital, as it enables them to assimilate and carry into the organizational milieu the 'sense-makings' from heterogeneous communities. In addition, research managers'

ambivalence makes them particularly aware of researchers' various needs, ambitions, fears, and limitations. This special awareness, along with their liminal position in the organisational structure, helps research managers to assist researchers with the elusive niceties of their work. Small talk appears as a key constituent of knowledge production, as it contributes to the outline of the social context where actual research is accomplished.

Big talk pervades the activities aimed at developing the profile of the research group, enacting a collectively legitimised sense of direction. At this level, the talk is aimed at encouraging the development of a community of knowing (c.f. Boland and Tenkasi, 1995). Big talk appears as a powerful connecting mechanism between the levels of small talk, where the 'real' work gets done, and hard talk, that concerns itself with the viability of the organizational setting. Big talk plays an important role in handling conflicts and overlaps associated with, for example, different norms, values, or orientations of heterogeneous research communities. These conflicts, rooted in different ontological and epistemological standpoints, have fuelled a profusion of irreconcilable research traditions, much seen as inescapable (e.g., Astley, 1985), as harmful to the development of the field of Management Studies (e.g., Pfeffer, 1993). The label of the 'international academic community' thus appears as an umbrella hiding a myriad of overlapping, conflicting, and developing academic communities, each with its own sense-making and knowing practices. Big talk enables research managers to bargain for a collectively legitimised sense-making, which may constitute the basis for coordinated and participated action. This is no easy task, as participation in communities is always based on situated negotiation and renegotiation of meaning in the world (Lave and Wenger, 1991). Becoming a competent member of a community – to develop a new identity with reference to others engaged in the same activity – is a *process* that takes place at the same time with and in relation to other processes, making each member accountable to others and to the other communities with which they interact (Gherardi and Nicolini, 2002, our emphasis). This developing reciprocity and professional engagement is cultivated over time, rather than given. Because the processes of mutual adjustment involve concessions, reconfigurations, and conciliations, communities thrive on negotiation mechanisms for coping with pressures (c.f. Cohen et al., 1999). Largely, big talk plays a key role in negotiating and mediating the conditions upon which this adjustment is to occur. In conjunction with small talk, big talk establishes the 'knowledge infrastructure', that is, a set of organizational conditions, both social and physical, and likely to inspire intellectual exchange and knowledge development.

The third talk form, the *hard talk*, is found across the formal and programmed conversational activities aimed at defining the strategic orientation of a research organization. At this level, the talk focuses on the

strategic discussions aimed at refining the fundamental choices and decisions as to what sort of knowledge is privileged (prioritization), how this is to be recognised (discrimination), and rewarded (evaluation). Hard talk is developed against the backdrop of an allegedly growing managerial agenda in public research organisations, drawing on notions like 'efficiency', 'comparability', 'selectivity', or 'value for money' (c.f. Middlehurst and Kennie, 1997; Ewan and Calvert, 2000). From an organizational standpoint, the adoption of such principles is ultimately meant to develop sorting mechanisms to distinguish 'warranted' from 'unwarranted' knowledge. Consequently, at this level, research managers have a vested interest in bargaining for the recognition of the various coexisting types of sense-making, which are identified at the level of small talk and processed in the realm of big talk. It is at the level of hard talk that knowing confronts knowledge (c.f. Blackler, 1995), and that a generative dance between them may occur (c.f. Cook and Brown, 1999). Because of their liminal position in the organizational structure, research managers act as privileged knowledge brokers of research communities' idiosyncrasies. While at the hard talk level, discussions coalesce around ways to further organizational viability and visibility within the academic knowledge landscape, and those discussions are infused by the actual and privileged experience and viewpoints of research managers as regards the intricacies of research work and of multiple research communities. In other words, it is at the level of hard talk that the relationship between knowledge strategy and knowledge infrastructure is negotiated, refined, and established. This is illuminating in the sense that it draws attention to the mutually constitutive nature of that relationship.

What emerges from this discussion is that language alone has no magic power. The power of language to do anything, that is, to make things happen, lies in and across social relationships rather than in linguistic practices (Guerin, 2003). Even if talk has no magic power in itself, it is not powerless either. Talk reflects the nature of social interactions, as much as it determines, engenders, and infuses them (Sturdy and Fleming, 2003). In its reflection, talk appears like a mirror and in its crucial role of co-constituting the things it reflects the mirror gains magic qualities. When talk is considered as the prime medium through which people continuously interact with the social world, organisations appear not as static entities, but as dynamic processes, which are constructed and reconstructed through everyday activities, practices, and a myriad of social interactions (c.f. Musson and Cohen, 1999). Through talk, people construct and negotiate the meanings of their contributions in order to accomplish coordinated sequences of actions. In other words, negotiations mediate in the relationship between talk ('words') and purposeful action ('deeds'). Therefore, it does not make sense to think of talk as a neutral, context-free, innocuous, or apolitical social practice. The archetypical talk

forms proposed indicate that research managers' talk can be seen as a powerful social strategy to accomplish research management work. This is neither a one-time event nor an individual accomplishment. Instead, it is a thorough and unfinished collectively crafted practice, pervading the three talk layers. It is meant to shape a working framework rather than to impose it. Identifying knowledge management as talk stresses the key importance of negotiation (cf. Cohen et al., 1999) and reinforces the suitability of a negotiated order theory of organizations (Strauss et al., 1963; Strauss, 1978). The negotiated nature of the research managers' task is derived from the potentially conflicting nature of multiple research idiosyncrasies (e.g. norms, values, methods, topics, etc.) associated with cosmopolitan research communities. Altogether, perceptual differences as regards, for instance, purposes, processes, and contents of scientific knowledge, are likely to determine the perceived effectiveness, meaningfulness, or validity of a knowledge infrastructure. In simple terms, the results of this study show that knowledge cannot be dissociated from its constitutive social processes. The three talk forms are crucial to helping participants make sense of, position themselves in, and muddle through organizational 'enablements' and 'constraints' (c.f. Giddens, 1990).

7.6 CONCLUSION

In the introduction of this paper, it was argued that an exploration of managers' talk could improve our understanding as regards the mechanisms informing the social organization of knowledge work. It was also stressed that the social-process or community approach to knowledge management (KM) in particular justifies paying attention to talk practices. In this research, with its focus on the management of academic research practice, the notion of academic research communities is clearly linked to the social-process approach; the social mechanisms shaping and enabling communities to derive their form and existence from the channel through which most social interaction is accomplished, that is, talk. The conceptual results of this study clearly show that talk forms can be seen as powerful brokerage mechanisms in the management of knowledge work. This finding is especially relevant to the development of KM, since the social mechanisms informing communities are a result of expressions of talk.

The grounded analysis of the data in this study made it possible to understand that it is through several instances of social interaction through talk that research managers are able to assimilate and negotiate the recognition of multiple 'sense-makings'. Talk has emerged as a social strategy that enables them not only to accomplish management work, but also as a vehicle for knowledge brokerage. This finding has three main implications. Firstly,

because talk forms are relational, organisational realities are constantly changing based on interactions. Interactions lead to changes that affect infrastructure which, in turn, will cause further interactions. Secondly, management emerged as a social activity, which cannot be dissociated from the social mechanisms surrounding its object. This suggests that management and knowledge are hard to tell apart, as management and knowledge are, perhaps more often than not, mutually constitutive. Thirdly, the interwoven talk forms enable a dialogue between the levels of small talk, where the work gets done, and the hard talk, which concerns the viability of an organisational setting.

The focus in this study was on understanding the knowledge-intensive organization as an activity system, which stresses the close link between knowledge and knowing. Organizations as knowledge-driven activity systems are more than communities, as they appear rather as quasi-objects made up of a dynamic combination of individuals, relationships, physical objects, concepts etc. (cf. Latour and Porter, 1993). Even if this view is endorsed, the social-process approach in KM remains central to understanding organizations as knowledge systems. The key to developing this approach is to search for the critical mechanisms which create and recreate communities and that link these communities to the other aspects that make up organizations. Talk appears as such a crucial mechanism. In this paper, only the role of talk in one particular knowledge-intensive domain, that of academic research, was studied. In this domain, not much more than the surface was scratched of the epistemological connotations that go hand in hand with the various forms of talk. Notwithstanding the limitations of the paper at hand, it is felt that the case stands firm for a knowledge-based view of organizations (Grant, 1996) and KM debates embracing and developing notions of talk as constituting mechanisms of organizations as knowledge-based activity systems. Referring to the received notion of "management by walking around", it is felt that there is every reason to start studying knowledge management as an activity that is to be understood as "management by talking around" if we mean to develop the notions of a social-process approach to KM.

CHAPTER 8

General discussion and reflection

8.1 INTRODUCTION

This final chapter discusses and reflects upon the main conclusions of an exploratory study on academic research management understood here as an archetypical expression of knowledge management. The study feeds into a growing scientific and societal appeal for a better understanding of the organizational mechanisms that might enhance the economic status of knowledge. Understanding the possible sphere of management influence with respect to knowledge is central to this task. How such understanding can be acquired defines the central conundrum inspiring this scientific inquiry. The exploratory, rather than the confirmatory nature of this investigation resulted in a largely unforeseen excursion into the fascinating, bewildering, and contested territory of knowledge work and knowledge management. Apart from Chapter 2, which dissects the motives and implications associated with the methodological choice informing this inquiry, the themes of the remaining chapters enlarge on conceptual ideas that have earned their theoretical value and relevance from empirical data. In Chapter 1, the central research problem has been specified and three auxiliary research questions have been derived. In order to resolve the central research problem, the auxiliary research questions will be discussed. After that, a meta-reflection will be sketched. Then, a methodological reflection will be offered. The final section signals limitations and outlines avenues for further research.

8.2 RESEARCH QUESTIONS: EXPLORATION AND CRITIQUE

Several sensible questions can be posed at the end of a dissertation. Arguably, the fundamental question that is of interest to potential readers is in what sense the approach taken has appropriately answered the central research problem, and in what sense this answer furthers the current understanding of the phenomenon. The present study should contribute to a better understanding of the tensions, connections, prospects, and limitations posed to management when knowledge becomes its object and to knowledge when it becomes subject to management attention. In the following, an attempt is made to answer concisely each auxiliary research question. Given the exploratory nature of this inquiry, these questions can best be seen as beacons used to illuminate the research trajectory, rather than as blind dictates imposed upon the researcher's path or upon the empirical subjects of inquiry. Supplying analytical answers at these guideposts is thus unrealistic, because of the conceptual and empirical ambiguity surrounding the complex notions of knowledge, management, and the intricacies associated with their potential relationship.

8.2.1 How do knowledge and management aspects surface in research management practice?

The intricacies associated with the relationship between knowledge and management were investigated from the viewpoint of research managers. It is important to note that, for the most part, these are researchers themselves (c.f. McAuley et al., 2000). Because of the privileged position research managers hold, their viewpoint is particularly valuable. On the one hand, this 'in-between' position in the organization is not trivial, given the potentially conflicting normative expectations that could result in mixed feelings and compromised behaviour associated with role ambivalence (Merton and Barber, 1976). On the other hand, this ambivalence also makes them privileged bearers of a practice-based, rather than theoretical perception of the fine points that define the complexities of research work and of the possible tensions associated with its management.

Academic research management directs its attention to a form of knowledge-intensive work that involves knowledge creation in a pure form. Academic research management can ideally be seen as a managerial activity that aims at improving the effectiveness and quality of the knowledge production processes that define what research is all about. Given its close ideological resemblance to knowledge management, it was theoretically and empirically enlightening to examine which knowledge aspects of work are seen amenable to management, and to study how these justify or inspire the practice and conceptions guiding the research management activity. The findings of this investigation show that research managers believe that their power to influence directly researchers' work agendas is limited. Their powerlessness is perceived to result as much from a researchers' ethos, as from the unpredictable nature of their work. In a way, researchers are often seen as behaving like 'hobby seekers', creating a tension between their individual orientations and goals, and those set by the research organization. Discretion, self-regulation, and academic freedom are deep-seated, legitimating concepts of academics' professional culture (c.f. Menand, 1996). In contrast, the formulation of goals and associated courses of action within unpredictable, non-linear, non-routine, and non-repetitive work forms, such as that of research work, is not trivial, since this emerges and develops while performing the work (c.f. Molleman and Timmerman, 2003). Inevitably, this very indeterminacy poses challenges to the conventional management imperatives and prerogatives of planning, organization, co-ordination, and control (Freidson, 1994; Alvesson and Kärreman, 2001).

In this research it soon became clear that it is unreasonable to think of research management as an organizational artefact of no consequence for the development of research work. Whatever the 'breadth and depth' of management influence, its legitimacy or recognition, management should not

be regarded as an innocuous practice. The data indicate that the practice of research management boils down to a subtle blend of structured and informal activities aimed at coaching, nursing, protecting, and stimulating researchers' work processes. What is more, because research management seeks to contextualise, justify, and set the general tone for working, rather than for exerting direct control over work processes, it resounds in the idea of 'shaping' rather than managing (c.f. Ferlie et al., 2002). This notion of shaping, for instance, surfaces in the finding that most research managers' work falls back on conversational practices, and that these can be seen as powerful social strategies not only to get their work done, but also as vehicles for knowledge brokerage. It is through multiple layers of talk that research managers are able to identify, assimilate and negotiate the organizational recognition of multiple 'sensemakings' (see Chapter 7).

The results of this investigation clearly show that the practice of research management plays a central, though often indirect role in influencing researchers' selections, exclusions, approaches, motivations, and eventually careers. Plausibly, the privileged conceptions held by research managers as to how research work develops can infuse their management approaches. This finding is in line with the idea that the concept of management is 'low in meaning' without a specification of the object that defines and justifies its existence. The nature of the object of management, or how the nature of this object is perceived, defines the nature of management. The practice of research management can be regarded in the way that it reflects the intricacies of research work, as well as in the way that it seeks to influence the local social conditions under which it can develop. In so doing, the practice of research management can be seen as influencing the practice of research.

8.2.2 How can research managers' administrative missions be understood in view of researchers' needs for autonomy and discretion as key constituents in the quality of their work?

This question evokes an established, yet unresolved, theoretical and empirical concern for the sociology of professions and not least for knowledge management research. This concern relates to the controversial relationship between managerial control and professional autonomy. The terms of this relationship are problematic, because the key defining themes in the professional culture (e.g. autonomy over means and ends, overspecialization, overemphasis on professional standards of evaluation, etc.) are also critical themes for managers to recognise and control (Raelin, 1985).

Autonomy is a much-praised philosophical, moral, and ethical issue, because it is perceived as fundamental to human flourishing, self-development, and self-respect (e.g. Dworkin, 1988; Hill, 1991). The concept of autonomy has attracted considerable attention in the domain of

management studies, because it is seen as a key determinant of intrinsic motivation (e.g. Deci and Ryan, 1985), creativity (e.g. Shalley et al., 2000), and eventually of the quality of work itself (e.g. Brey, 1999). From a knowledge perspective, the tension expressed in the question above resonates with the recognition that knowledge is indispensable and valuable to organizations, but at the same time it escapes full understanding and control. Knowledge, in itself, can be regarded as purposeless (Fuller, 2002), or – perhaps less debatable – not confined beforehand to an explicit set of purposes. Therefore, organisational initiatives sought to enhance or commodify the value of knowledge may well be at odds with its constitutive social production mechanisms. What is more, an increase in management attention to knowledge runs the risk of progressing at the expense of knowledge itself. Oxymoronically, 'the more management the less knowledge to 'manage', and the more 'knowledge' matters, the less space there is for management to make a difference' (Alvesson and Kärreman, 2001, p. 996).

The results of this investigation clearly show that the relationship between a research manager's mission and a researcher's autonomy is often resolved by means of a subtle mutual adjustment process. This process can be seen as characterised and infused by ambivalence. On the one hand, research managers view the new organizational requirements, such as specialization, prioritisation, evaluation, and discrimination, as having inspired a new and exigent sense of urgency and direction. Research managers all go about perceiving these exigencies differently, as some seem wittingly to concur with the dominant managerial discourse, whereas others show a more sceptical or disenchanted stance. This finding resounds in the idea that managerialism is not as complete or uncontested as it is often portrayed, as different responses to the pressures are conceivable (c.f. Gleeson and Shain, 1999; Barry et al., 2001). On the other hand, the prospects associated with credentialisation and rewarding forms, which will eventually determine a researcher's professional status and capacity to generate adequate resources, encourages research managers to help researchers seeking productive approaches to stricter organizational demands. Consequently, research managers sense the adoption of stricter performance targets and norms, which are seen to interfere with a researcher's latitude and discretion, and as being both problematic *and* challenging. This mutual adjustment process surfaces in the attempts made to define and legitimise various courses of action together with and not against the researchers. In this process, managers create a negotiation space in which they can simultaneously promote and protect a researcher's ethos. This approach, which can be seen as a strategy to cope with potentially conflicting demands – control vis-à-vis autonomy – relates to what has been defined as *resilient compliance*. This form of creative compliance shows via research managers' ambivalent stance towards the dominant pressures, productively

reconciled by means of introducing new and legitimised organizational elements into the workplace setting. The potential threats to a researcher's professional autonomy are thus used as a springboard for collective reflection and critical assessment of intransient work practices.

The data suggest that the processes of defining and accomplishing coordinated courses of action are dynamically constructed and reconstructed through everyday activities, practices, and a myriad of social interactions. These processes involve concessions, reconciliations, and reconfigurations, which are constitutive and influential of organisational life. This clearly resonates with the notion that processes of negotiation, as a means for engendering action and order, are central to the relationship between managerial control and professional autonomy (Cohen et al., 1999; Fitzgerald and Ferlie, 2000; McAuley et al., 2000). Negotiation is likely to surface in professional contexts in the presence of conflict or frustration, associated with attempts to routinize and rationalize work (Maines and Charlton, 1985), or in face of change, uncertainty and ambiguity, ideological diversity, or problematic coordination (Hall and Spencer-Hall, 1982).

The results of this investigation show that the professional proletarianisation or deskilling thesis (e.g. Oppenheimer, 1973; Boreham, 1983; Wilson, 1991), which argues that new forms of control are eroding professional autonomy, is perhaps more provocative than convincing. It is not sufficiently convincing, as it neglects the power of individual agency in changing the definition of potentially adverse situations (c.f. Cohen et al., 1999; Halford and Leonard, 1999). Given that research managers themselves are either practising or experienced researchers, they have adapted to the new and changing situation by showing an artful and subtle pragmatism that reconciles professional and managerial interests. In other words, the findings clearly indicate that compromises are being made between enablement and constraint (c.f. Giddens, 1990) and that reconfigured platforms of conciliation can flourish in professional contexts influenced by, but not determined by managerial thinking.

8.2.3 How do images of knowledge resound in the research managers' conceptions and practices guiding quality management in research organisations?

The seductive rhetoric of quality has become an undisputed theme in organizational performance and change. In the organizational field, quality has emerged as a positive, unifying, and constructive imperative (Cole et al., 1995). It has inspired, justified, and legitimised diverse initiatives, such as the redesign of organizational structures, processes, practices, and procedures. Because the imagery of quality brings people together – virtually no one is against quality – the language and practice of quality are inherently moral

(Kelemen, 2003). However, while the concept has been used in many different ways and contexts, no quality definition is completely comprehensive or accurate. Quality is best seen as a multifaceted and polysemic concept, as it means many things to many people. This characteristic defines the appeal and strength of the quality notion, rather than its weakness. In organizational terms, quality can be approached from at least two senses, managerial and critical. From a managerial standpoint, quality is seen as an inherently good, self-contained and objective phenomenon, amenable to measurement, planning, control, and management. From a critical perspective, quality is viewed as a complex and contested social, cultural, and intensely political phenomenon, which acquires meaning via processes of intersubjective communication that support certain interests and marginalize others (Kelemen, 2003).

Notwithstanding the enormous attention that quality has received in the domain of organization studies in recent years, quality resounds as a subordinate and marginal aspect in research which has been inspired by a knowledge-based view of organizations (e.g. Nonaka, 1994). Perhaps unsurprisingly, the organizational quest for knowledge almost tacitly becomes a quest for *good* knowledge. Plausibly, organizations are not just in search of more knowledge. Besides, there is now sufficiently strong theoretical and empirical evidence that suggests that too much knowledge can be as counterproductive as too little (Schultze and Stabell, 2004). Organizations are first and foremost searching for *better* knowledge, that is to say, knowledge that can act as a sustainable source of organizational innovation and change, given its virtually inexhaustible potential to engender novel action. However, to define and distinguish good from bad, positive from negative, desired from undesired, or warranted from unwarranted knowledge is no trivial or innocuous exercise. If knowledge, in its essence, is surrounded by ambiguity (Alvesson, 2001), it becomes pertinent to ask whether both better and worse knowledge of some fact is conceivable. It also leads to questioning the appropriateness and repercussions of the organizational strategies aimed at evaluating and improving its soundness.

The research question above has guided an investigation into the implications made when adopting a quality-based paradigm in order to understand a knowledge-intensive realm. It has enabled the process of looking at the intricacies that are posed to knowledge, when this becomes the object of quality and its management and to quality management when knowledge becomes its subject of attention. This inquiry has been illuminating in gaining an understanding of the tensions, connections, prospects, and limitations that define the problematical relationship between quality and knowledge work. The differences in the way quality is perceived by management and the way quality is perceived among researchers are among the prime sources of

managerial tension in research contexts. The assessment of quality and quantity, in addition to creativity and productivity, are among the most critical problems facing those managing scientific work (Cole and Cole, 1967; Ahmad, 1981; Lambright and Teich, 1981).

The findings of this investigation clearly show how mutual reciprocity defines the relationship between knowledge and quality. Images of knowledge can inspire the quality management system, as much as this is bound to affect those knowledge images. The adoption of quality standards for judging the quality of physical manifestations of knowledge represents a Cartesian, thus inherently limited understanding of knowledge. Each manifestation of knowledge the standard does not acknowledge easily escapes detection when an inventory of knowledge is made. This representational exercise clearly dissociates knowledge from the knowing subject. The image of knowledge that surfaces here is that of knowledge as an asset, which resounds in a narrow 'epistemology of possession' thinking (Cook and Brown, 1999). However, the data also show that it does not make sense to think of or treat managers as outside, passive, and functional consumers of quality notions. The ambivalence of research managers makes them privileged brokers for the research communities' quality idiosyncrasies within research organizations. This brokerage process works both ways. In one way, research managers are responsible for co-devising and enacting a quality system believed to be as much problematic as challenging. In another way, they have earned or negotiated a certain degree of leeway in deviating from what the quality system prescribes in order to allow managing for quality in a more facilitating and enabling way than in a strict judgemental sense. In seeking to draw attention to, or repair the unintended consequences of an inherently imperfect quality system, they help in refining quality perceptions. In so doing, the quality management practice becomes one of the prime constituent forces that shape the negotiation element underlying the quality notions. Rather than by management rhetoric, research quality becomes also shaped by management practice. In other words, the quality management practice affects research quality itself, and thus co-constitutes that quality.

The results of this investigation show that research quality is not an objective, cool, neutral, value-free, or apolitical phenomenon that can be instantly and remotely controlled. Instead, quality emerged as a socially situated archetype, constructed by and for people, and therefore inextricable from and shaped by discussion, concession, and negotiation (c.f. Zbaracki, 1998; Xu, 2000). From a critical standpoint, quality unfolds both within and outside research organizations in a complex, ambiguous, and unpredictable fashion, leading to both positive and negative outcomes for the various parties involved in the process (Kelemen, 2003). In sum, quality does not simply mirror the intrinsic nature and value of the artefacts it purports to represent.

The dynamics of quality, expressed via quality management rhetoric and practice, affect the lives and status of these artefacts in different ways and magnitudes.

8.3 TOWARDS A META-REFLECTION

The awareness that knowledge is indispensable and valuable to organizations has developed next to the recognition that knowledge escapes full understanding and control. This insurmountable conflict has inspired the formulation of the central research problem guiding this academic inquiry:

> How can the possible sphere of managerial influence with respect to knowledge be conceptually understood in view of a) the tensions, connections, prospects, and limitations that define this controversial relationship, and b) in view of the adoption of organizational mechanisms that are aimed at distinguishing and rewarding warranted from unwarranted knowledge?

The systematic principles and procedures of grounded theory approach (Glaser and Strauss, 1967) have been adopted to explore this problem. In the course of this dissertation, the theoretical significance of the grounded findings has been thoroughly related to and expanded via a *dialogue* with broader academic debates. This does justice to an important dictum of the method: despite the fact that a grounded theory can stand on its own, it should not necessarily stop after it has produced its own conceptual picture – the substantive theory – but, explicitly seek to contribute to the 'bigger enterprise' (Glaser, 1978, p. 139), that is, the formal theory. This meta-reflection explores the implications that the key empirical findings have on the developing and loosely-coupled theoretical field of academic research management, as well as on the domain of knowledge management.

8.3.1 Substantive reflection: Reification, resilience, and reflexivity

It can be argued that studying management conceptions and practices only from the standpoint of managers is dangerously self-limiting. However, research managers are mostly active researchers themselves (c.f. McAuley et al., 2000). This characteristic makes them privileged bearers of a practice-based, rather than theoretically-based perception of the fine points that define the complexities of research work. These managers possess an exceptional sensitivity to the knowledge aspects of the work that are to be managed, and how these call for or are amenable to particular management approaches. Consequently, their management conceptions and practices are as much influenced by their personal and professional beliefs, values, and lived

experiences while researchers, as they are by the administrative responsibilities derived from a voluntarily espoused managerial role. Conceivably, the management style of research managers results from an intricate, distinctive, ambivalent, and compromised mix of professional and managerial viewpoints. Research managers can be seen as researchers reconstructed as managers (Gleeson and Shain, 1999). Therefore, their professional identity can be seen as a hybrid pool of multiple and sometimes contradictory identities. However, the fear that role ambivalence causes professional uncertainty, indecisiveness, or role strain is disputable. Possessing multiple professional identities tends in principle to be more gratifying than stressful, as it enables individuals to have numerous benefits, such as role-privileges, overall status security, resources for status enhancement and role performance, and enrichment of the personality and ego gratification (Sieber, 1974).

The 'in-between' position of research managers makes them privileged brokers for the research communities' knowledge idiosyncrasies within research organizations. As argued above, this brokerage process works in two ways. In one way, they are administratively responsible for organizing the functioning of research groups against the backdrop of a managerial agenda. The managerial principles are visible in the activities that involve the organization of research themes (specialization), the setting of research goals and deadlines (prioritisation), the introduction of quality assessment systems (evaluation), and the allocation of research resources based on performance indicators (discrimination). In the other way, they seem to hold an artful pragmatism that reconciles professional and managerial interests by maintaining a personal and professional critical distance from senior management and managerial pressures, in order to retain, regain, or improve their credibility with their staff. This form of strategic compliance (Gleeson and Shain, 1999) can be seen in the way managers attempt to negotiate special privileges or exemptions for their research groups, on the basis of the specific idiosyncrasies of their research communities (e.g. quality standards).

These research findings clearly suggest that the very existence of research management does not represent, per se, a threat to the professional ethos of researchers, or to the quality of their work. Arguably, the presence of management is forcing a reconfiguration of specific elements belonging to that ethos. For example, researchers' discretion appears to be in jeopardy, since they are now urged to perform according to externally pre-established goals and quality standards. This can, of course, result in undesired outcomes, such as mimicry, opportunism, or conservatism. This can, too, progressively discourage nonmainstream knowledge to progress, which can pose serious risks to knowledge diversity and independence (Harley and Lee, 1997). Yet, the results of this investigation show that research managers use stricter performance requirements as a springboard for making a collective reflection

and critical assessment of intransient work practices, with potential beneficial consequences for individual, group and organizational performance. Here, the resilient compliance of research managers plays a key role in terms of crafting and legitimising particular courses of action. They maintain an ambivalent stance towards the dominant pressures, which are productively reconciled by means of introducing new organizing elements into the workplace setting. In professional and knowledge-intensive work settings, management directives or orientations, just like rules, can be supported, reinforced, modified, argued, stretched, twisted, neglected, as well as ignored or applied at convenient moments in order to get things done (c.f. Strauss et al., 1963; Knorr-Cetina, 1981).

In sum, because academic research management has emerged as a collectively crafted and negotiated effort aimed at coaching, nursing, protecting, and stimulating researchers' work processes, which simultaneously echoes and voices research and managerial idiosyncrasies and viewpoints, this activity appears now as if it has undergone an imperceptible velvet revolution. The bidirectional brokerage work of research managers ensures that aspects perceived as being critical to the development of motivated research work are now being reprocessed, reconstructed, and reintroduced into the managerial agenda in a reconfigured fashion. Resiliently, research managers seek to draw attention to, or to repair the potentially perverse consequences of the adoption of mechanical management directives, on account of the aspects that can eventually make research work distinctive and organizationally valuable. In so doing, the practice of academic research management is not necessarily at odds with the development of research work. Instead, it appears to be both co-constitutive and co-responsible for this development.

8.3.2 Theoretical reflection: Organization and knowledge production modes

There is a growing perception that the nature and modes of knowledge production are undergoing a radical, irreversible, and worldwide transformation in view of new political, technological, cultural, and economical exigencies (c.f. Ziman, 1994). In an article published in *Nature,* this particular author argues that science is experiencing a cultural revolution, which might be so different sociologically and philosophically that it will produce a different type of knowledge (Ziman, 1996). This 'radical, pervasive, and permanent structural change' (Ziman, 1994, p. i), has fuelled heated debates among scholars, as it calls into question the nature and processes of knowledge production, viz. the long-established and much cherished principle of science as a self-regulated *disinterested* practice. Disputes over the allegedly different ways of going about scientific knowledge have crystallized around the 'Mode 1' vis-à-vis 'Mode 2' model (for a thorough discussion see Gibbons

et al., 1994; Nowotny et al., 2001). 'Mode 1' refers to the traditional, fundamental, disciplinary organized mode of knowledge production, which can be seen as characterised by a polarization of discovery and application. In contrast, 'Mode 2' represents a production mode that is more applied, transdisciplinary in its orientation, socially accountable, and inherently reflexive, based on the principles of convergence and synthesis. The 'Mode 2' knowledge production is emerging alongside with and differentiating itself from 'Mode 1', not replacing it.

The 'Mode 1' vis-à-vis 'Mode 2' conceptual model, associated with different ways of conceiving the content, purpose and process of knowledge production, has been under attack from a variety of ontological and epistemological perspectives. Some authors have argued that solid empirical evidence to support the distinction between fundamental research and research in the context of application is in short supply (e.g. Cohen et al., 2001; Shinn, 2002; Gulbrandsen and Langfeldt, 2004). Others have suggested that the underlying dichotomies (e.g. 'creativity vs. innovation', 'abstraction vs. application', etc.) are artificial, as they discard the relational image of science by constructing a boundary between research and practice, which is used as rhetorical justification for funding bodies to increase business influence at the expense of academic autonomy (e.g. Hellstrom and Jacob, 2005). Still others have maintained that some of the observed changes have less to do with new interfaces, and more to do with the internal dynamics of science in a period of budgetary stagnation (e.g. Hicks and Katz, 1996; Simpson, 2004). Finally, other authors have drawn attention to the fact that the contrasts between 'Mode 1' and 'Mode 2' are not compelling in historical terms (Ziman, 1996; Etzkowitz and Leydesdorff, 2000; Fuller, 2003) and that they represent a too naturalistic and a-political picture (Pestre, 2003). Pestre contends that such a framework *naturalizes* the process of change, underestimating the extent to which these alleged transformations are the result of political and social choices.

While scholars may disagree as to the nature, novelty and intensity of the elements associated with the alleged transformation of the knowledge production processes, no serious observer of publicly-funded research would refute the dramatic changes that have occurred in research management mechanisms since the 1980s (c.f. Simpson, 2004). Audit, transparency, pay-per-performance, decentralization, alternative funding bodies, accreditation, etc. can all now be seen as recurring discursive elements placed on the agenda of policy makers and science administrators. Yet, as the management ethos traditionally is at odds with that of researchers (e.g. Ernø-Kjølhede et al., 2001), the adoption of managerial rhetoric and practices in academic research organizations, however inescapable, justifiable, or desirable has fostered fevered debates as to their intentional and unintended implications. Changes

in the institutional research context are seen as having fuelled the adoption of managerial approaches inspired by contentious principles, such as control and commodification (e.g. Willmott, 1995), competition and isomorphism (e.g. Czarniawska and Genell, 2002), standardization and bureaucratisation (e.g. Parker and Jary, 1995), or discrimination and selectivity (e.g. Harley and Lee, 1997). This should come as no surprise, as the existence of an allegedly different knowledge production context inevitably 'affects not only *what* knowledge is produced, but also *how* it is produced; the *context* in which it is pursued, the way it is *organized*, the *reward system* it utilizes and the mechanisms that control the *quality* of that which is produced' (Gibbons et al., 1994, p. vii, emphasis added).

From Gibbons and his cohorts' seminal work, Cohen et al. (2001) derive five key dimensions that these authors believe to have inspired the 'Mode 1' vis-à-vis 'Mode 2' framework: context, discipline base, social organization, accountability, and quality control (c.f. Cohen et al., 2001). These categories show an apparent close connection to the main themes of this investigation, focused on the management of research not financially dependent from, inspired by, or commissioned by commercial sources or interests, that is, 'Mode 1' knowledge production. Therefore, these dimensions constitute a useful heuristic device for sorting out the findings of this investigation from the perspective of a growing theoretical debate on the challenges posed to the organization and to the practice of academic research in view of different institutional exigencies.

Cohen et al. (2001) argue that in 'Mode 1', research problems are situated within the interests, social norms, values, and theoretical approaches of specific research communities (context and discipline base dimensions). This suggests that the sphere of management influence as regards the research content (*what* is to be researched?) is limited. This argument draws attention to the idea that the various 'disciplinary cultures' (Becher, 1981) or 'academic tribes' (Becher, 1989), share what Ylijoki (2000) defines as a 'moral order', that is, a set of common cognitive, social, and cultural characteristics such as values, norms, modes of interaction, ethical codes, etc. Moral orders are influential to the extent that they are able to filter and modulate institutional pressures. Consequently, the nature, scope, and degree of management interventions – or management-intensiveness, if you like – may well differ across different disciplinary cultures, just like the patterns of reception, accommodation, assimilation, or resistance to those interventions among researchers can vary (c.f. Albert, 2003). The findings of this investigation clearly show that even if management does have a limited role in terms of imposing research orientations, it does not have an irrelevant role. As most research managers are researchers themselves (c.f. McAuley et al., 2000), they know very well that researchers seek to connect their research topics,

approaches, priorities, trends, etc. with those of their communities. Because researchers can be members of multiple research groups and/or of several research organizations, operating locally and/or internationally, research managers become simultaneously members of local and global communities of knowing (c.f. Boland and Tenkasi, 1995). As a consequence, these managers possess a practice-based perception of the fine points that define the complexities of research work and which play a central role in how their organizing practices are defined and put into practice. Therefore, the idea seems hard to digest that because of its highly situated nature, the 'context and discipline base' associated with 'Mode 1' knowledge production is not amenable to management. What the results of this investigation show is that research managers' affiliation with communities of knowing, which in themselves can be seen as open systems that facilitate the creation of new meanings, new linguistic routines, and new knowledge (c.f. Boland and Tenkasi, 1995), affect the ways they go about co-organizing their research groups.

As regards the 'social organization' of 'Mode 1', Cohen et al. (2001) maintain that this knowledge production mode is institutionalised, organised around reasonably stable research teams, and typically discipline-based. This view portrays a rather monolithic image of research, perhaps best suited for explaining the organization of natural, biomedical sciences and engineering, but which falls short of one found in other academic domains (e.g. Albert, 2003). In the field of business administration and management studies in the Netherlands, research groups can be seen as idiosyncratic melting-pots of research interests, backgrounds, persuasions, and approaches. The relative autonomy of some academic disciplines, for instance, sociology and economics, as well as the multifarious nature of academic research, challenges the too-inclusive explanatory models such as the 'Mode 1' and 'Mode 2' (for a thorough discussion see Albert, 2003). Perhaps, management may well have more room to show its true colours in the presence of stable, discipline-based, and institutionalised research teams than when loosely-coupled, fragmented, metatheoretical, and multiparadigmatic research interests are at stake, viz. in administrative sciences (c.f. Astley, 1985; Pfeffer, 1993). What is more, the dominant institutional exigencies, often seen to undermine the meaning, identity, and professional ethos, show a variety of managerial responses and identities, which reflect different ways of filtering, processing and going about those demands (c.f. Gleeson and Shain, 1999). The results of this investigation clearly show that the social organization of research groups is resiliently resolved via processes of mutual adjustment, which rest on a complex, negotiated, and transient network of intersubjective, social processes. What is more, these findings also reveal that the 'social organization' of the disciplines is not so much a formal organizational system, as in Gibbons et al. (1994)

sense, but instead an informal system with subtle mechanisms that define how people go about making sense of the numerous tensions, dilemmas, contradictions, possibilities, impossibilities, etc. existing in and defining their work environment.

Finally, Cohen et al. (2001) indicate that in 'Mode 1' knowledge production, research and researchers are accountable to their peers by means of peer review, and that quality perceptions are assessed against the norms and values of disciplinary communities (accountability and quality control dimensions). This view of peers as sacred revered gatekeepers of scientific quality norms corresponds with the long-established institutionalized pattern of evaluation in science (Merton and Zuckerman, 1973). This image is perhaps more conservative than convincing though. Particularly through the work of such authors as Latour (1987), Knorr-Cetina (1981; 1999), and Bourdieu and Nice (2004), it has become generally acknowledged that what qualifies as scientific knowledge is not the peer or objectified assessment of 'product before person', but it is a socially-produced recognition. In the policy and management discussions of research quality, researchers typically fail to acknowledge the socially-constructed nature of what defines research quality. Therefore, the viewpoint held by Gibbons et al. (1994) on research quality should come as no surprise, as it clearly represents the dominant, but by no means sensible view among science policy scholars (c.f. Gulbrandsen and Langfeldt, 2004). This view is flawed, as it appears to introduce an artificial divide between the university requirements, the peer review method, and the drives and peculiarities of research groups and individual researchers. The results of this investigation show that quality is not understood as something that is neutral, cool, value-free, objective, independent, fixed and final, or something which means the same to everyone at the same time. Instead, research quality emerged as a socially-situated archetype, constructed by and for people, and therefore inextricable from and shaped by discussion, concession, and negotiation (c.f. Zbaracki, 1998; Xu, 2000). What the results of this inquiry also show is that research quality is as much shaped by quality rhetoric as it is by quality management practice. This indicates that theoretical understandings on research quality that fail to address the prime constituent forces that shape the negotiation element underlying the quality concept, that is, the social dynamics of quality, are bound to convey a limited and oversimplified view of quality.

Generally speaking, the findings of this research project resound in the analytical framework Cohen et al. (2001) derived from Gibbons et al. (1994) work, which clearly indicates their broad theoretical significance. However, when discussing these findings in terms of the characteristics of 'Mode 1' knowledge production, this archetype also revealed flaws in that conceptualization. This suggests that while 'Mode 1' is a conceptually useful

and intellectually inspiring idea, it fails to offer a convincing picture of the dynamics of knowledge production vis-à-vis organizing modes across all disciplines (c.f. Albert, 2003). What is more, this view fails to give credit to the different patterns of reception and assimilation found in the new institutional exigencies at the level where research is done, viz. the levels of institutes and groups, notwithstanding the importance of such organizational arrangements in establishing the form and content of research work (see Morris, 2000; Whitley, 2000; Morris, 2002).

8.3.3 Towards a meta-reflection

The combination of the substantive and theoretical reflection produced above allows for two general and impressionistic implications as regards the more fundamental relationship between management vis-à-vis knowledge. At one level, the findings of this investigation clearly suggest that it is increasingly unhelpful to regard management of knowledge-intensive work as a non-intrusive activity. Conceptions of knowledge are bound to inspire and justify the adoption of particular management approaches for managing knowledge, just like management interventions are bound to interfere with the natural development of knowledge creation processes. This relationship is mutually constitutive. Therefore, conceptions and practices in the management of knowledge-intensive work cannot be completely inextricable from their object. This 'object' relates as much as to the work carried out by professionals, as to the professional behaviour itself. Knowledge management can thus be seen as a social activity – therefore intrusive – that subtly co-constitutes its object of attention. At another level, the results of this inquiry indicate that the enactment of organizational mechanisms aimed at distinguishing and rewarding the soundness of knowledge represents the most controversial and sensitive area of management intervention in the domain of knowledge work. As the process of distinguishing involves discriminating between potentially competing, or closely related stances, this issue is inescapably motivationally laden. Quality assessment systems are intended to influence workers' selections, exclusions, approaches, and even careers.

At the end of this research trajectory, it does seem also unrealistic to think that the fascination and vulnerability associated with the knowledge management idea is bound to disappear in the near future, as many persuasions as regards its key constituents – knowledge and management – are conceivable. What is more, and as the findings indicate, it seems almost naïve to think that management rhetoric and practice does not affect knowledge production processes. The presence of management in the vicinity of knowledge, however overtly or discretely defined, affects the social organization of knowledge work in different ways and magnitudes. This move may turn out to be both problematic *and* challenging to the different parties

involved. As a result, the theoretical value of the knowledge management idea lies perhaps in supplying 'eye-openers' to possible connections, controversies, and conflicts between notions of knowledge and management. As argued many times in this dissertation, the adoption of a knowledge perspective on organizations is more fruitful for *understanding* organizations and their management in a critical sense than it is for managing them.

8.4 A METHODOLOGICAL REFLECTION

The adoption of a research method is always a contentious choice. It is contentious for at least two reasons. First, a method involves a set of key assumptions as to what constitutes reality (ontology), and how to go about making sense of it (epistemology). Different worldviews, or 'epistemological commitments' (Johnson and Duberley, 2000), make researchers see different things when they look at the same phenomenon. Anecdotally, 'give ten different researchers the task of investigating one and the same non-trivial research question and you will get ten different results' (Alvesson and Sköldberg, 2000, p. 2). Second, a method defines the principles, processes, and techniques associated with selection, collection, and analysis of data. These procedures will determine the course, the outcomes, and eventually how the theoretical and empirical strength of the investigation will be judged.

In this dissertation, the method of grounded theory approach (Glaser and Strauss, 1967) has been adopted. It is important here to question this choice, and to reflect upon its implications for this research and its findings. In order to be able to do so, the key tenets of the method are briefly outlined. This subsection concludes with a critique, which addresses both empirical and theoretical elements.

8.4.1 Key tenets of the grounded theory method

Grounded theory approach is a highly systematic inductive methodology used for the collection and analysis of any sort of data. Its purpose is the discovery – not the verification – of theory used in describing and explaining basic common patterns in social life, by continuously and openly comparing data findings and the emerging concepts (Glaser and Strauss, 1967; Glaser, 1978, 1998). Arguing against grand theories, preconceived notions, and professional interests, which distort rather than represent social reality, Glaser develops his method as a means to generate theory from minimum prior knowledge. A key concept in Glaser's portrayal of the method is that of the 'main concern of participants' – the core category – as its continual processing and resolving represents the prime mover of their behaviour (Glaser, 1998). Grounded theory thus aims at causing latent social patterns to surface via the conceptualisation of opinions, actions, etc. of the participants concerned. The

method does not aim at an accurate description of participants' voices, but at an abstraction of both their doings and their meanings. As a result, the concepts generated are abstract in regard to time, place and people (Glaser, 2001, 2003). Because grounded theory operates on an abstract and conceptual level, relating concept to concept, it can tap the latent structure that drives and organizes behaviour (Glaser, 2001).

8.4.2 Empirical and theoretical critique

Grounded theory has acquired a canonical status in the domain of Management Studies (Locke, 2001). Nonetheless, the method has its limitations, and is problematic (c.f. Alvesson and Sköldberg, 2000). Three controversial key aspects of the method are briefly reviewed, from an empirical and theoretical standpoint, viz. the roles of literature, coding, and core category.

In order to maximise researchers' sensitivity to emerging concepts and relationships, the method urges them to avoid theoretical contamination from extant theories as much and as long as possible, by collecting data in first place. The principle of ignoring literature raises fundamental questions. How can research problems, substantive fields of inquiry, research questions, interview scripts, etc. be defined? How is the scientific relevance of such a topic to be ascertained? Under which conditions does the adoption of a grounded theory approach become useful? The principle of avoiding keeping abreast of theoretical insight can be seen as a rather liberating thesis. Anyone can create their own theory as long as they start from reality, which may regrettably result in the reinvention of the wheel or trivial knowledge (Alvesson and Sköldberg, 2000). In this investigation, the literature review done at the outset was crucial in exploring the domain and in developing a critical sense of what the unresolved problems are that typify the knowledge management debate. Selecting the substantive topic preceded that of the method, and not the reverse, as this grounded theory maxim almost implies. The result of not having adhered strictly to the method may well have been of additional scientific relevance.

In grounded theory, the coding process (fracturing and grouping data incidents) rests on a particularly controversial notion, that the world is socially organized in latent patterns, which will emerge if researched properly (Glaser, 2003). The role of the researcher is thus to unveil these latent social patterns via the conceptualisation of opinions, actions, etc. This suggests that the latent patterns have a life of their own, which exist irrespectively of and unaffected by the presence of a researcher. This thesis should be impugned. In this investigation, the codes represent a personal and tentative – thus contested – purview on the phenomenon, which is shaped by the conscious and unwitting cognitive and theoretical frames of reference of the researcher. It is not the

intention that the concepts proposed, which are meant to explain the processes that define the activity of academic research management, should be interpreted as final or uncontroversial. Instead, they should be seen as a meticulously developed interpretation, rather than a representation of reality. Despite its intentions, the coding operation is incapable of representing reality in an unambiguous way. Moreover, the fracturing of the data incidents makes them detached from the context of relationships in which they occur (Alvesson and Sköldberg, 2000).

The core category is the pattern of behaviour most related to all the other categories and their properties, and that which explains how the participants socially resolve their behaviour (Glaser, 1998). The underlying assumption is that there is *always* an all-encompassing concept that accounts for what motivates different manifestations of social behaviour (e.g. 'cutting back', 'supernormalizing', 'cultivating', or 'pluralistic dialoguing'). As a consequence of abstraction, the core category should be abstract in regard to time, place, and people (Glaser, 2001, 2003). This investigation has sought to unveil several dimensions of research management work. Conceivably, research managers who are embedded in the same institutional, cultural, and professional background are bound to experience similar concerns, expectation, pains, and pleasures. Whether these can be subsumed under an overarching concept, or, perhaps fundamentally, whether this all-pervading problem exists at all, is an unanswered question. With this respect, Alvesson and Sköldberg (2000) also question this principle on the grounds that different actors may have different problems, and problems can almost always be defined in different ways. Rather than an all-pervading concept that defines the main concern of research managers, the results of this inquiry put forward a set of concerns, expectations, and actions that account for the ways they go about their work.

8.5 LIMITATIONS OF THIS STUDY AND AVENUES FOR RESEARCH

The chance to delve into an under-explored and contested field of inquiry, such as the field that looks at possible connections between management and knowledge was among the key reasons that justified this intellectual journey. Just like with any other journey, choices had to be made that enabled discovery, but also concealment. In the following section, the main limitations as regards the content of this investigation are briefly reviewed.

8.5.1 Perspective of the conceptualisation

The principles and practices of academic research management have been examined from the perspective of the managers, and not from that of researchers. To the extent that it addresses people rather than technical issues, management is a social activity that targets worker behaviour and the minds of employees (c.f. Alvesson and Kärreman, 2001). In order to be able to develop a richer picture of what academic research management is, or can all be about, it could be interesting to include the perceptions of researchers and other stakeholders in future research. As Barry et al. (2001, p. 90) argue, 'management is not simply what managers do, still less what they say they think they do – and even less again in what academics and consultants say they should do'.

8.5.2 The substantive research domain

The substantive field of inquiry chosen was that of the management of publicly funded research in research organisations operating in the Management and Business Administration in the Netherlands. Notwithstanding, the disputable claim that a correct adoption of the principles and practices of grounded theory lead to research that is abstract in regard to time, place and people (Glaser, 2001, 2003), the results of this investigation are bound to reflect partially the disciplinary, regional, and institutional context. Generalizing the findings presented here to other disciplines and settings is thus problematic. It would be interesting to contrast the theoretical concepts emerging from this investigation with those from research management approaches in other research streams, for example, in other social sciences (e.g. economics) as well as in the natural sciences, where the predicated 'Mode 2' knowledge production (Gibbons et al., 1994) may be more prominent. Inspections in different national contexts may help focus the emerging picture.

8.5.3 Performative effect

This inquiry deliberately ignored reviewing the impact of particular management approaches on research. Unlike in several other public domains (c.f. Willmott, 1995), the managers of our study are not accountable for research productivity, nor rewarded or penalized accordingly. However, it would be interesting to understand the effectiveness of research management, that is, the extent to which this practice generates the intended outcomes (e.g. better quality, more output, etc.). It would be also interesting to look at the impact of management on soft aspects, such as researcher's commitment, motivation, or psychological contract.

8.5.4 Avenues for research

The results of this investigation open up several possibilities for future research. Three themes appear to be not only theoretically and empirically relevant, but also fascinating. First, an exploration and elaboration of the grounded concepts of resilient and strategic compliance may help improve our understanding in regard to the social deconstruction, reconstruction, or destruction mechanisms of management ideas. The way social actors go about these notions determines very much the life of these notions. Second, a better understanding of the motivational role of the social and cultural mechanisms that render knowledge work significance appears crucial. As argued in Chapter 6, social interactional mechanisms are powerful in accomplishing knowledge work in that they are not only able to inform workers' selections, exclusions, approaches, and even careers, but they also craft the criteria by means of which the 'soundness' of the work produced can be recognised. The motivational role of those mechanisms in and for knowledge work has been as yet inadequately understood. Finally, the role of talk in shaping the social organization of knowledge work deserves more attention than what organizational knowledge scholars have paid up until now. As talk-in-interaction defines and shapes the very existence of communities of practice, communities of knowing, or epistemic communities, it plays a central role in how these communities evolve. Altogether, by exploring, refuting, sharpening, redressing, etc. these themes, light can be shed on the big picture as to *which* and *how* management practices and conceptions can indeed make knowledge work tick.

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SUMMARY

In the past few decades of the twentieth century, the importance of knowledge as a source of economic value has received increasing attention across several disciplines, including Economics, Sociology, and Management Studies. Given its potential to engender novel action, knowledge came to be recognised as a sustainable source of innovation and change, and as a key factor in explaining differences in performance and achievement, both at a macroeconomic and microeconomic level. This refreshing view of knowledge, as a valuable and virtually inexhaustible resource, has had a significant impact on organizational and individual lives. It has led to substantial changes in the definition of work processes and practices, particularly in fields more dependent on individual and group expertise, that is, in knowledge-intensive domains. While conceptually vague, knowledge-intensiveness is generally considered higher in professions where elements of knowledge creation, exploration, or development prevail, in comparison with those professional occupations requiring higher levels of knowledge utilization, exploitation, or application. This upsurge in attention for knowledge has also led to a reassessment of the principles and practices in the organisation of work, and to a call for changes in conventional management practices, now regarded as inadequate for addressing the knowledge dimensions of work. The tensions and complexities associated with managing jobs which are mostly based on, for instance, knowledge creation, are considered to be more severe than those involved in the management of jobs involving higher degrees of, for example, knowledge application.

The principles and practices aimed at promoting the organizational status of knowledge revolve around the notion of Knowledge Management. This highly ideational concept has proven to be so successful that it has become a hype, in which supporters can be found both in academia and the managerial world. Their overlapping suggestions have involved disclosing the value and the location of organizational knowledge, promoting its creation, its development, its sharing, and its diffusion. However, knowledge has come also to be seen as a polysemic notion, which is far too loose, ambiguous, rich, and points in far too many directions simultaneously to be neatly organized, co-ordinated, and controlled. Consequently, knowledge has emerged as a bewildering and fascinating concept, whose appeal has derived as much as from the recognition of its organizational value, as from the accredited difficulty to understand or control it fully. What is more, awareness has grown that realises that an increase in management attention to knowledge runs the risk of progressing at the expense of knowledge itself. The ambiguous, fleeting, or situated character of knowledge and knowledge work may well challenge the traditional management activities, such as planning, coordination, and control.

Within this realm, the aim of this research is to contribute to a better understanding of the tensions, connections, prospects, and limitations posed to management when knowledge becomes its object and to knowledge when it becomes subject to management attention. This objective feeds into growing scientific and societal calls for a better understanding of the mechanisms that may enhance the economic status of knowledge. This investigation focuses on the substantive field academic research management, as this constitutes an outstanding example of the management of a knowledge-intensive activity. Academic research can be seen as an inherently complex, unpredictable, and boundless type of knowledge intensive work that involves knowledge creation in perhaps its purest sense. Academic research management can thus ideally be seen as a managerial activity that aims at improving the effectiveness and quality of the knowledge production processes that define what academic research is all about. Here, the focus of attention is on exploring the possible sphere of managerial influence with respect to knowledge in view of a) the tensions, connections, prospects, and limitations that define this controversial relationship, and b) in view of the adoption of organizational mechanisms aimed at distinguishing and rewarding warranted from unwarranted knowledge. This problem defines the central conundrum which inspired this investigation.

This dissertation consists of six academic papers, preceded by a general introduction and followed by a general discussion. In Chapter 1 the research focus is contextualised and explored. The particular standpoint taken, the purpose, the research domain, the methodological approach, as well as the substantive motivations for embarking on this research is also made clear. These reasons amount to three interrelated aspects. First, it is argued that investigating the practice of academic research management should enable one to unravel the fundamental intricacies involved when imposing structure and purpose on a potentially purposeless activity. Second, it is suggested that such a study can shed light on which specific conceptions of knowledge call for which particular management approaches. Finally, it is suggested that an inspection of the key research management activities involves an understanding of the specific mechanisms research organizations use to evaluate the soundness of knowledge. These motivations resonate in the research questions posed, which are dealt with throughout the dissertation with varying degrees of emphasis. The scientific and societal relevance of this investigation is also addressed. The implications of this investigation are reviewed at two different levels, the general and the substantive. The chapter concludes briefly by outlining the structure of the dissertation.

The methodological backbone of this research is explored in Chapter 2. This chapter addresses the methodology that can be applied when researching the field of academic research management, in which the adoption of a knowledge-based view (KBV) is especially appropriate. In particular, it discusses whether the adoption of a grounded theory approach (GTA) in this type of research is justifiable, given the contested character of the KBV constituents. GTA is especially useful for investigating such a field because of three interrelated arguments. Firstly, the KBV and related debates not only provide insufficient solid theoretical guidance, but they

are also inadequate for supporting the definition of hypothesis to test in that specific domain. Secondly, considering that knowledge is inseparable from knowing individuals, it is argued that a research manager' s experience and viewpoints in regard to management, knowledge, and the relationship between these concepts form the basis of theory development and relevancy. Lastly, it is claimed that the concepts of knowledge, management, and knowledge management are sources of conceptual confusion and fascination, rendering the selection of any particular understanding to guide research an arbitrary and contentious flavour. The adoption of GTA does not completely preclude the KBV perspective from the methodological discussions. Instead, its adoption has the potential to take advantage of the conceptual richness involved in the disputes on the nature of knowledge, management and combination thereof, thus enabling a well-substantiated development of the KBV and associated notions.

The belief that has originally inspired this investigation – that the management of academic research constitutes an outstanding exemplar of knowledge management – is explored, elaborated and discussed in Chapter 3. This argument draws on in-depth, semi-structured, and face-to-face interviews with research managers. These interviews provide a practice-based account, thus both privileged and central to the prospects and constraints posed to activity of research management. Data collection and analysis followed a grounded theory approach. This method appears particularly suited for this inquiry, due to the absence of a dominant theoretical framework, the consequent need for extra theorizing, and the appeal to develop a theoretical account that relies on the most privileged sources of this knowledge, namely research managers. The data analysis shows that competing conceptualizations of knowledge and associated management models provide the playground for academic research management. What is more, this chapter empirically supports the notion that an epistemology of practice is essential for understanding issues of management vis-à-vis knowledge. The data also show that sense-making of management vis-à-vis knowledge, needs to recognize and integrate epistemology-of-possession thinking into the overall picture. Owing to the impact of cultural and behavioural aspects in the dynamics of knowledge creation, shaping collectively crafted courses of action – rather than managing them – aptly represents the essence of academic research management.

Chapter 4 moves slightly away from the knowledge debate as such, in order to focus on the intricacies surrounding the performance management responsibility devolved to research professionals working as managers. There is cause for scepticism as to whether attempts to boost the contribution of individuals to the overall organizational success, which broadly defines the performance management quest, can be fruitfully considered when applied to the domain of knowledge-intensive work. This chapter discusses how the emergence of new performance conditions and rhetorics may well conflict with the nature of research work. Drawing on in-depth interviews with research managers, the chapter explains how role ambivalence enables research managers to view stricter performance requirements as being both problematic *and* challenging. These research managers engage in alternative ways of moulding and legitimising their activity by cooperating

with the researchers, and not fighting them in the process. Coping strategies employed in order to digest the new performance demands are reviewed. The notion of resilient compliance is put forward in order to convey the research managers' ambivalent stance with regard to the prevalent pressures, which is subsequently reconciled by introducing new organizing elements into the workplace. Finally, it is argued that an individual agency's role to change the definition of potentially adverse situations has been largely underestimated.

While recognized in the broader organizational literature, the role of talk as a main constituent of social organization appears to be undervalued in the emerging community or social-process approach to organizational knowledge. This issue is the focus of attention of Chapter 5. Based on the principles of the grounded theory approach, this chapter aims to further our understanding of how talk establishes the management of a particular knowledge-intensive activity, viz. the management of academic research. An analysis of interviews with research managers shows that talk produces its effects on the social organization of knowledge work in three different, yet interwoven forms, labelled as soft talk, big talk and hard talk respectively. These archetypical talk layers are different in purpose, process and by-products. 'Soft talk', or personal talk on the work floor, which intimately links the establishment of work relationships with systems of sense-making and community confirmation, is critically different from and potentially at odds with the institutional level of 'hard talk' where research strategies and credentialisation policies are drafted. 'Big talk', which is mostly enacted at the level of research groups via negotiation and conflict resolution, appears as an indispensable intermediate level for the viability of 'small' and 'hard talk'. The chapter concludes arguing that talk can be seen as a social strategy that enables research managers not only to accomplish management work, but also as a vehicle for knowledge brokerage.

The way images of knowledge resound in the conceptions and practices guiding quality management in research organizations is examined in Chapter 6. Various developments, including calls for research accountability and massification of academic education, have led academic institutions to draft or refine their research quality management. In studies of research quality, the role of management at the institutional level has not been well-developed enough. Regrettably, studies on research quality mostly focus on the appropriateness of standards, overlooking the critical processes through which quality notions are constructed. However, management at the organizational and group level can be seen among the prime forces in the social construction of quality. Seeking inspiration in developing critical discussions of organizational knowledge, this study aims to contribute to an understanding of a management perspective on research quality management via a grounded theory approach. The accounts of research managers' perceptions show that prevailing elements in the research quality system are derived from a limited knowledge-as-asset or knowledge-as-possession perspective on both quality and research knowledge at the expense of a knowledge-as-process or knowledge-as-practice understanding. The data also show that it is inherently limited to see quality systems only as representation or rhetoric, as quality management practice partly deviates from rhetoric to play a constituting role in both the possession and practice

elements of knowledge production. The chapter concludes by arguing that the practice of quality management co-constitutes quality rhetoric and thus quality itself.

An understanding of the potential effects of KM initiatives on motivation presumes an understanding of how motivation relates to knowledge aspects of work. In Chapter 7, this contention is elaborated by means of a three-step approach. Firstly, theoretical approaches that link motivation issues to knowledge aspects of work are identified and briefly characterised. Secondly, the ways are examined via which research managers perceive motivation for research and go about managing in light of that perception. Lastly, the empirical findings are reviewed in view of the theoretical insights discussed earlier. Data show that research managers view intrinsic motivation as *the* prime motivator of creativity and quality, yet that this is not amenable to their direct sphere of influence. Research managers seek to stimulate the inner drive of researchers in such a way that their intrinsic motivation pool does not dry out. Their stimulus revolves around three key themes: work context, work processes, and work assessment. The chapter draws two important conclusions. First, although knowledge work largely relies on individual competences, its accomplishment is inherently a social activity. Second, to be conceptually and empirically valuable, an understanding of the motivators for knowledge work cannot be entirely detached from the social mechanisms that render knowledge work significance. This suggests that *a* perspective on knowledge is necessary for understanding how knowledge work can be motivated.

The main conclusions of this exploratory study are reviewed and discussed in Chapter 8. The auxiliary research questions posed at the outset of this investigation are revisited and elaborated. A meta-reflection is provided which explores the implications of the key empirical findings to the developing and loosely-coupled theoretical field of academic research management, as well as to the domain of knowledge management. A methodological reflection is performed which appraises the methodological choice, and examines its implications for this research and its findings. The chapter concludes by identifying limitations of this study and outlining avenues for further research.

SAMENVATTING

Organiseren rond Kennis
Reïficatie, Rek en Reflexiviteit in de Aansturing van Kennisproductie

De afgelopen decennia lijkt het wel of kennis meer 'in' is dan ooit tevoren Diverse disciplines, waaronder economie, sociologie en bedrijfswetenschappen, steken de loftrompet over kennis als bron van maatschappelijke, economische en organisatorische waarde. Kennis, omgeven met een aureool van creativiteit, wordt omarmd als een duurzame bron van innovatie en verandering. Kennis geldt als belangrijke variabele om zowel op macro- als micro-economisch niveau prestatieverschillen te verklaren. Deze visie op kennis als een waardevolle en vrijwel onuitputtelijke hulpbron heeft nadrukkelijk zijn sporen nagelaten in hoe organisaties functioneren en in de plek die individuen daarin innemen. Ook werkprocessen zijn er heel anders uit komen te zien, vooral bij zogeheten kennisintensief werk, dat wil zeggen werk waar deskundigheid en kennisexploratie cruciaal worden geacht. Kijken naar organisaties vanuit kennisperspectief heeft ook geleid tot een herwaardering van de principes en praktijken van arbeidsorganisatie. Het heeft de roep om een nieuwe invulling van management tot gevolg gehad. Vigerende managementconcepten werden als ontoereikend gezien voor de aansturing van kenniswerk. Vooral waar kennisontwikkeling centraal staat, inclusief de daarvoor benodigde individuele vrijheid en motivatie, wordt de mogelijkheid van zinvol management als problematisch ervaren.

Draai- en angelpunt van discussies over principes en praktijken om kennis tot volle organisatorische wasdom te laten komen is het begrip kennismanagement. Dit concept is uiterst succesvol gebleken, zo zeer zelfs dat het een hype werd. Het heeft in de werelden van organisatieadviseurs, van managers en van academische onderzoekers een fervente aanhang gekregen. Deze groepen vonden elkaar in het streven om de waarde van kennis zichtbaar te maken en kennisprocessen – zoals kennisontwikkeling, kennisdeling, en kennisverspreiding – te bevorderen. Als tegenreactie stonden critici op, die kennismanagement als iets ergens halverwege tussen een oxymoron en een contradictie afschilderden. Kennis, zo betogen deze critici, is een begrip dat zwanger is van de meest uiteenlopende, deels tegenstrijdige betekenissen, en dus weinig betekenis kan baren. Als basis voor organisatie werd het als veel te vaag, te dubbelzinnig, te veelkleurig gezien. Het bewustzijn groeide dat meer managementaandacht voor kennis ten koste van kennis kan gaan. Het ambigue, vluchtige en contextuele karakter van kennis staat op gespannen voet met managementactiviteiten als planning, coördinatie en management. De fascinatie voor kennis als iets dat organisaties definieert en dat tegelijk door organisaties

gedefinieerd wordt is door deze vaak heftige schermutselingen niet afgenomen, integendeel. Kennis moge moeilijk of zelfs onmogelijk te begrijpen zijn en al helemaal niet te managen of aan te sturen, dat doet geen afbreuk aan het feit dat het bij uitstek waardevol is voor organisaties. Geen organisatie zonder kennis!

Doel van dit onderzoek is om ons inzicht te vergroten in wat er gebeurt met management als het kennis tot voorwerp neemt en met kennis wanneer het onder de aandacht van management komt: welke spanningen, mogelijkheden, vooruitzichten en beperkingen worden dan tot leven gewekt? Het onderzoek sluit aan bij de toenemende roep in wetenschap en samenleving om meer inzicht in de mechanismen die ertoe bijdragen dat kennis in economisch en organisatorisch opzicht waardevol of waardevoller wordt. Meer in het bijzonder richt het zich op management van wetenschappelijk onderzoek als een bij uitstek kennisintensieve activiteit. Wetenschappelijk onderzoek betreft kenniscreatie in misschien wel zijn zuiverste vorm. Het geldt als een uit zijn aard complex, onvoorspelbaar en moeilijk inkaderbaar soort kenniswerk. Management van wetenschappelijk onderzoek is te zien als regelactiviteit gericht op het verbeteren van doeltreffendheid en kwaliteit van academische kennisproductie. De aandacht in deze studie wordt vooral gericht op de vraag hoever hierbij de invloedssfeer van management reikt gezien (a) de spanningen, mogelijkheden, vooruitzichten en de beperkingen die de relatie tussen kennis en management bepalen, en (b) gezien de selectie van organisatorische mechanismen die onderscheiden en belonen welke kennis wel en niet 'mag' of wel en niet 'beter' is.

Dit proefschrift beslaat zes hoofdstukken, voorafgegaan door een algemene inleiding en gevolgd door een afsluitende bespreking die de in de afzonderlijke hoofdstukken uitgeworpen lijnen bijeen brengt. Hoofdstuk 1 introduceert de thematiek van het onderzoek. Het hoofdstuk beschrijft vanuit welke uitgangspunten het onderzoek ondernomen is, en presenteert doel, domein en methodologie. Drie onderling gerelateerde aspecten vormen de motivatie voor dit onderzoek. De eerste assumptie is dat onderzoek naar de praktijk van academisch onderzoeksmanagement licht kan werpen op wat er gebeurt wanneer structuur en doel worden opgelegd aan een potentieel doelloze activiteit. Een tweede uitgangspunt van dit onderzoek is dat specifieke opvattingen over kennis tegelijk vragen om en leiden tot een specifieke benadering van management. Tot slot vertrekt het onderzoek vanuit de veronderstelling dat inspectie van de door onderzoeksmanagers ontplooide activiteiten onmisbaar inzicht kan leveren in de mechanismen waarmee organisaties kennis beoordelen op zijn waarde en adequaatheid. Op basis van deze motivatie presenteert het eerste hoofdstuk de onderzoeksvragen en belicht de wetenschappelijke en maatschappelijke relevantie van het onderzoek.

Hoofdstuk 2 presenteert de methodologische ruggengraat van het onderzoek. Het bediscussieert welke methodologie geschikt is om inzicht te verwerven in management van wetenschappelijk onderzoek opgevat vanuit organisatorisch kennisperspectief. Meer in het bijzonder stelt het de vraag of een gefundeerde theoriebenadering (grounded theory approach, of GTA) hier op zijn plaats is, gegeven het betwiste karakter van de samenstellende delen van een dergelijk

kennisperspectief (bijv. kennis en management). Het hoofdstuk voert drie onderling gerelateerde argumenten aan voor de geschiktheid van GTA. Ten eerste levert een organisatorisch kennisperspectief onvoldoende theoretisch houvast om testbare hypothesen op te leveren. Ten tweede zijn, gegeven de onscheidbaarheid van kennis en kennende subjecten, ervaring en meningen van onderzoeksmanagers inzake management, kennis en de relatie daartussen relevant als basis voor theorieontwikkeling inzake management van kennisproductie. Ten derde zijn de begrippen kennis, management en kennismanagement evenzovele bronnen van conceptuele verwarring. De keuze voor elke invulling ervan zal dus als willekeurig en controversieel gelden. Keuze voor een GTA sluit de methodische betekenis van een organisatorisch kennisperspectief niet uit. Juist de combinatie van GTA en een dergelijk perspectief biedt uitstekende mogelijkheden om de veelal sterk contemplatieve discussies over de aard van kennis, management en hun combinatie een stevige zet in de richting van een meer empirisch onderbouwde, maar niet vooraf in een bepaalde richting gestuurde uitwerking van een organisatorisch kennisperspectief mogelijk te maken.

Hoofdstuk 3 verkent op basis van met onderzoeksmanagers gevoerde gesprekken de ogenschijnlijke familiegelijkenis tussen management van academisch onderzoek en kennismanagement. De analyse laat zien dat concurrerende conceptualisaties van kennis en bijbehorende managementmodellen de speelruimte afkaderen voor managers van wetenschappelijk onderzoek. De gegevens maken duidelijk dat een adequaat begrip van onderzoeksmanagement als kennismanagement vraagt om een perspectief op 'kennis als sociale praktijk'. De gegevens laten ook zien dat beelden van 'kennis als bezit' niet weggehoond moeten worden als uiting van het verarmde wereldbeeld van een op beheersing gericht onderzoeksmanagement. Dergelijke beelden moeten als integrale elementen van een organisatorisch kennisperspectief op waarde worden geschat. Kennisontwikkeling is een dynamische activiteit die in sterke mate door cultuurgericht gedrag ingevuld wordt. Dientengevolge is management van academisch onderzoek in essentie het collectief vorm geven aan gedragslijnen – veeleer dan het managen van kennis.

Hoofdstuk 4 zet een voorzichtige stap weg van de kern van het kennisdebat. Het stelt de vraag hoe onderzoeksmanagers die tegelijk zelf onderzoekers zijn met prestatiemanagement omgaan. De zinvolle mogelijkheid van prestatiemanagement in geval van kennisintensief werk blijkt bron van fiks dispuut. Dit hoofdstuk verkent de conflicten tussen enerzijds de aard van wetenschappelijk onderzoekswerk en de intellectuele drijfveren daarachter en anderzijds de praktijk en retoriek van nieuwe prestatie-eisen - publiceren in internationale toptijdschriften met hoge impactfactoren, zich actief betonen in opstarten grootschalige internationale onderzoekssamenwerking, werven tweede en derde geldstroomonderzoek, enzovoort. Het hoofdstuk laat zien hoe onderzoeksmanagers door hun rolambivalentie – ze zijn tegelijk manager en onderzoeker - het omgaan met striktere prestatie-eisen tegelijk als een uitdaging en een probleem ervaren. Zij blijken op creatieve manieren te trachten hun managementwerk zodanig in te vullen en te rechtvaardigen dat ze als managers aan de kant van onderzoekers staan en niet tegenover hen. Uiteenlopende strategieën blijken te worden aangewend om de

nieuwe prestatie-eisen een plaats te geven in de dagelijkse onderzoekspraktijk. Sommige onderzoeksmanagers staan pal voor de nieuwe prestatie-eisen en omarmen die van harte en – zo lijkt wel – kritiekloos. De ambivalentie die andere managers kenmerkt blijkt bij hen te leiden tot een strategie waarin tegelijk opgelegde eisen worden nageleefd, maar ook de grens wordt opgezocht om de druk van die eisen te verminderen of te omzeilen door ze te herinterpreteren. Wat de literatuur grotendeels onderschat is dat de praktijk van onderzoeksmanagement er in voorkomende gevallen in bestaat dat opgelegde, maar niet klakkeloos of volledig erkende prestatie-eisen door creatieve herdefinitie worden gereconstitueerd.

Een belangrijk mechanisme van sociale organisatie blijkt praten en het voeren van gesprekken te zijn. Wat management inhoudelijk betekent en kan betekenen wordt in sterke mate ingekaderd door wat managers in gesprekken tot stand kunnen brengen. Anders dan in de rest van de organisatieliteratuur wordt de rol van praten ondergewaardeerd in de zich ontwikkelende sociaal-procesbenadering van organisatorische kennis. Hoofdstuk 5 wil dit hiaat zichtbaar maken en deels invullen door te verkennen hoe onderzoeksmanagers over de band van gesprekken vorm geven aan hun taken en doelstellingen. Een analyse van interviews met onderzoeksmanagers laat zien dat er drie vormen te onderscheiden zijn in de manier waarop praten management vorm geeft. Om elk van de drie vormen een naam te geven worden managers die zich van een bepaalde soort bedienen respectievelijk aangeduid als buikspreker, grootspreker en luidspreker. Deze drie soorten verschillen van elkaar qua doel, proces en in wat ze tot stand brengen. De buikspreker – met 'buik' als metafoor voor de plaats waar het gevoel van onderzoeksmanagement zetelt – houdt zich bezig met betekenisverlening en gemeenschapsvorming op de werkvloer door middel van persoonlijk contact. De manager in deze rol is met heel ander zaken bezig dan de luidspreker die de landelijke en internationale thema's in wetenschappelijk onderzoeksland verwoordt en bespreekt. Denk bijv. aan onderzoeksstrategieën, accreditatiebeleid, samenwerking in omvangrijke, grensoverschrijdende, maatschappelijk vooraanstaande onderzoeksprojecten. De derde rol, hier grootspraak genoemd, blijkt een onmisbare schakel tussen de buik- en de luidspreker. Grootspraak van de onderzoeksmanager, dat meestal op het niveau van onderzoeksteams plaatsvindt, komt tot stand door onderhandeling en het oplossen van conflicten tussen managementniveaus. De grootspreker verleent daardoor betekenis aan zowel de buikspreker als de luidspreker en maakt beide rollen mogelijk. Praten als sociale strategie blijkt niet alleen onontbeerlijk voor onderzoeksmanagers om te managen, maar ook om hun rol als kennismakelaar te verwezenlijken.

Hoofdstuk 6 onderzoekt hoe beelden van kennis doorklinken in het kwaliteitsbeleid in onderzoeksorganisaties. Diverse ontwikkelingen, waaronder de verantwoordingsplicht van onderzoek en de massificatie van academisch onderwijs, hebben academische instellingen ertoe gebracht om onderzoekskwaliteitssystemen op te stellen of te verfijnen. De rol van management op instituutsniveau heeft tot op heden weinig aandacht gekregen in studies van onderzoekskwaliteit. Dergelijke studies breken zich meestal het hoofd over normen en hun geschiktheid, en hebben weinig oog voor de constituerende processen die kwaliteit zijn bestaan en betekenis

geven. Management op het niveau van universiteiten, faculteiten en onderzoeksgroepen blijkt evenwel een cruciale rol te spelen in wat onderzoekskwaliteit is. In een poging scherper zicht te krijgen op hoe management een rol speelt bij discussies over onderzoekskwaliteit zoekt het hoofdstuk inspiratie bij recente kritische beschouwingen inzake organisatorische kennis. Wanneer de vraag wordt gesteld naar de kwaliteit van onderzoek wordt immers de kwaliteit van kennis onder de loep genomen en dat vraagt om kennis van kwaliteit. Kennisdiscussies zijn dus bij uitstek geschikt om onderzoekskwaliteitssystemen de maat te nemen. De gesprekken met onderzoeksmanagers laten zien dat vigerende opvattingen over onderzoekskwaliteit worden gedomineerd door de opvatting dat mensen of groepen kennis kunnen *bezitten*. De toe-eigenbare kanten van kennis staan centraal als de kwaliteit van kennis het onderzoekskwaliteitssysteem binnenkomt. Een dergelijke opvatting is inherent beperkt omdat ze over het hoofd ziet dat kennis maar zeer ten dele een bezit kan zijn dat los van de praktijk ontstaat en bestaat. De gesprekken laten ook zien dat het onjuist is om kwaliteitssystemen alleen te zien als representatie van kennis of als niets dan retoriek van en voor bestuurders en politici. De praktijk van kwaliteitsmanagement wijkt deels af van de retoriek ervan. Die prakrijk blijkt op zijn minst zo belangrijk in de constitutie van wat wel en niet als hoge onderzoekskwaliteit geldt. Onderzoeksmanagement is geen passieve consument van onderzoekskwaliteit maar een vooraanstaande speler in de totstandkoming van wat als kwaliteit geldt en wat kwaliteit is – mede omdat de meeste onderzoeksmanagers zelf kwalitatief hoogstaande onderzoekers zijn. Praktijk en retoriek in kwaliteitsmanagement beïnvloeden elkaar, en bepalen in onderlinge samenhang mede wat onderzoekskwaliteit is.

Inzicht in de mogelijke gevolgen van kennismanagement voor motivatie vraagt om inzicht in hoe motivatie en kennisaspecten van werk aan elkaar gerelateerd zijn. Hoofdstuk 7 verkent deze relatie in drie stappen. Ten eerste wordt geschetst hoe motivatietheorieën hun weg in de kennisliteratuur hebben weten te vinden. Ten tweede laat het hoofdstuk zien hoe onderzoeksmanagers de motivatie van onderzoekers ervaren en hoe die opvattingen hun managementpraktijk richten. Ten derde worden deze empirische bevindingen beoordeeld in het licht van de literatuurverkenning. De gegevens laten zien dat onderzoeksmanagers intrinsieke motivatie als de belangrijkste motivator van creativiteit en kwaliteit ervaren, maar die tegelijk beleven als iets dat buiten hun directe invloedssfeer ligt. Onderzoeksmanagers willen de innerlijke drijfveren van onderzoekers stimuleren zodat hun intrinsieke motivatie niet uitdroogt. Ze richten daarbij hun pijlen niet rechtstreeks op aspecten van motivatie maar op voorwaarden ervoor in werkomgeving, werkprocessen en beoordeling. Het hoofdstuk trekt twee belangrijke conclusies. Ten eerste is onderzoek als kenniswerk, hoewel grotendeels gebaseerd op individuele bekwaamheden, in zijn verwezenlijking in hoge mate een sociale activiteit. Ten tweede dient inzicht in motivatoren voor onderzoek, wil dit inzicht conceptueel en empirisch waardevol zijn, een heldere plaats te geven aan de sociale mechanismen die bepalen wat wel en niet significant onderzoek is. Daarom is zonder een voldoende rijk begrip van kennis een bevredigend begrip van motivatie voor onderzoek als kenniswerk ondenkbaar. Indirect vraagt derhalve ook

onderzoeksmanagement, wil het recht doen aan en aansluiten bij de drijfveren van onderzoekers, om een uitgewerkt beeld van wat individuele en organisatorische kennis is.

Hoofdstuk 8 knoopt een lint om de voorgaande hoofdstukken. Het zet de belangrijkste conclusies van dit proefschrift op een rij en plaatst ze in perspectief. Het hoofdstuk bespreekt hoe met de resultaten van de voorgaande hoofdstukken de onderzoeksvragen beantwoord zijn en bediscussieert de implicaties van de empirische onderzoeksresultaten voor begripsvorming inzake management van wetenschappelijk onderzoek en kennismanagement.

RESUMO

Organizar para o conhecimento:
Reificação, resiliência e reflexividade na gestão do conhecimento

Nas últimas décadas do século XX o conhecimento tem vindo a ocupar um lugar central no discurso científico, tecnológico, social e político, granjeando por isso uma atenção crescente por parte de disciplinas sociais como a Economia, Sociologia e Gestão. O conhecimento é actualmente visto como um recurso, virtualmente inesgotável, e potencialmente gerador de riqueza social, económica e organizacional, bem como um factor sustentável de inovação e mudança, capaz de explicar desempenhos diferenciados ao nível macro e microeconómico. Esta perspectiva funcionalista sobre o conhecimento tem tido um impacto significativo na vida das organizações e dos indivíduos. Essencialmente, tem conduzido à reavaliação dos princípios e práticas tradicionais de gestão e organização do trabalho (e.g. planeamento, coordenação e controlo), progressivamente vistas como inadequadas para lidar com os aspectos de trabalho relacionados com o conhecimento. Este desajuste é particularmente sentido em domínios fortemente dependentes de conhecimentos individuais e de equipas, ou seja, em áreas de conhecimento-intensivo. A 'intensidade' do conhecimento é um conceito ambíguo. Qualquer ocupação profissional requer conhecimentos para ser executada, excepto se desempenhada por uma máquina. No entanto, é comummente aceite que as profissões associadas à criação, exploração, ou desenvolvimento de conhecimentos sejam 'mais intensivas' que aquelas onde a utilização ou aplicação de conhecimentos predominam. Assim, as exigências associadas à gestão de profissões orientadas para a *criação* de conhecimentos, são consideradas normalmente mais complexas que aquelas associadas à gestão de profissões vocacionadas para a *aplicação* de conhecimentos.

Os princípios e práticas concebidas para desenvolver o papel do conhecimento nas organizações cristalizaram em torno do conceito de Gestão do Conhecimento. Este conceito idealista tem despertado a atenção de académicos, consultores e profissionais oriundos das mais diversas áreas. As suas aspirações centram-se frequentemente na tentativa de apurar o valor, a natureza e a localização do conhecimento nas organizações, de forma a poder estimular o seu desenvolvimento, partilha e difusão. Esta ambição seria notável se não fosse problemática. O interesse pelo conhecimento veio no entanto a revelá-lo não só como algo valioso e fascinante, mas também como algo polissémico, demasiado livre, ambíguo, transitório e contextualizado para ser facilmente organizado, coordenado e controlado. Ironicamente, o reconhecimento do valor do conhecimento para as

organizações desenvolveu-se a par do reconhecimento da dificuldade em compreendê-lo ou controlá-lo na sua totalidade. Paradoxalmente, torna-se cada vez mais manifesto que quanto mais Gestão menos (ou pior) conhecimento e quanto mais conhecimento, menos espaço de manobra terá a Gestão.

Neste âmbito, o objectivo deste trabalho de investigação foi o de contribuir para uma melhor compreensão dos desafios que se colocam à Gestão quando o conhecimento se torna o foco da sua atenção, mas também dos desafios que se colocam ao conhecimento quando este fica sob a alçada da Gestão. Este objectivo insere-se num crescente apelo científico e social para uma melhor percepção dos mecanismos que permitam desenvolver o estatuto do conhecimento. Este estudo concentrou-se no domínio específico da gestão da investigação académica, já que esta constitui um exemplo paradigmático da gestão de uma actividade profissional baseada em conhecimentos. A investigação académica pode ser vista como uma ocupação altamente complexa, imprevisível e fisicamente não circunscrita ao contexto de trabalho, e que envolve a criação de conhecimento no sentido mais puro do termo. Desta forma, a gestão da investigação académica procura aumentar a eficiência e a qualidade dos processos associados à produção de conhecimento. O principal foco de atenção neste estudo refere-se à possível esfera de influência da Gestão no conhecimento, à luz de (a) tensões, conexões, possibilidade e limitações que se colocam à problemática relação entre ambos e (b) da crescente adopção de mecanismos organizacionais destinados a distinguir e premiar conhecimento *desejável* do *indesejável*.

Esta dissertação é composta por uma introdução geral, seguida de seis artigos e concluída com uma discussão geral. A introdução geral define e contextualiza o problema, o domínio e a metodologia, bem assim como os três grandes objectivos deste estudo. Primeiro, um estudo centrado nas práticas da gestão da investigação permitirá identificar as particularidades associadas à imposição de uma estrutura e de objectivos quantitativos e qualitativos numa actividade profissional tradicionalmente desenvolvida à margem de ambos. Segundo, este trabalho de investigação deverá permitir compreender que concepções específicas sobre o conhecimento exigem ou legitimam determinados actos ou estilos de gestão. Por fim, este estudo procura compreender as implicações associadas à adopção de mecanismos de avaliação da qualidade do conhecimento. No capítulo 1 discute-se ainda a relevância científica e social deste estudo.

O suporte metodológico desta investigação é explorado no Capítulo 2. Nesse capítulo são debatidas as características que uma metodologia deverá possuir para suportar um estudo sobre a gestão da investigação académica. Em particular, questiona-se se a adopção de um método essencialmente indutivo como a 'teoria fundamentada' (Grounded Theory Appraoch, GTA) se justifica, face ao carácter controverso dos aspectos que definem uma perspectiva das organizações baseada no conhecimento. Os motivos que estão na base da adopção de uma GTA numa investigação neste domínio são discutidos. Primeiro, uma perspectiva das organizações baseada no conhecimento não apresenta um corpo teórico suficientemente robusto para suportar a definição de hipóteses para testar. Segundo, admitindo que o conhecimento não existe independentemente das pessoas,

argumenta-se que as perspectivas e experiências dos gestores de investigação sobre as relações entre gestão e conhecimento é fundamental para um desenvolvimento teórico relevante. Por último, defende-se que os conceitos de conhecimento, gestão, e gestão do conhecimento são fontes de fascínio e confusão conceptuais, pelo que a adopção *ex-ante* de uma qualquer perspectiva específica seria arbitrária, controversa, ou mesmo redutora. A adopção de uma metodologia como a GTA encerra o potencial de retirar o máximo proveito das disputas conceptuais sobre a natureza dos conceitos envolvidos.

O Capítulo 3 elabora a pressuposto central deste estudo: a gestão da investigação académica constitui um exemplo paradigmático de gestão do conhecimento. Esta assunção foi consubstanciada por via de entrevistas extensas, semi-abertas e presenciais a gestores de investigação. As entrevistas proporcionaram uma perspectiva privilegiada sobre muitas das possibilidades e desafios que se colocam a esta actividade. Os resultados evidenciam que concepções distintas sobre o conhecimento influenciam diferentes modelos de gestão. Esta ilação reforça a noção de que uma perspectiva do 'conhecimento enquanto prática social' é essencial para compreender as ligações entre a gestão e o conhecimento. Os resultados também põem em evidência que uma perspectiva do 'conhecimento enquanto património' é necessária para compreender a esfera de actuação da Gestão. Argumenta-se ainda que face à influência de aspectos culturais e comportamentais nas dinâmicas de criação de conhecimento, a gestão da investigação não faz mais que tentar moldar cursos de acção colectivamente definidos, em vez de geri-los.

O Capítulo 4 explora as particularidades associadas à gestão de desempenho realizada por investigadores que exercem simultaneamente funções de gestores. Este capítulo analisa de que forma a emergência de novas retóricas e práticas organizacionais voltadas para a melhoria dos desempenhos individuais pode colidir com a natureza do trabalho de investigadores. Os resultados do trabalho empírico mostram que os gestores de investigação vêem a adopção de critérios de desempenho mais rigorosos como simultaneamente problemáticos e estimulantes. A ambivalência profissional em que aqueles se encontram estimula-os a desenvolver formas alternativas de definir, ajustar e legitimar a sua actuação conjuntamente com os investigadores. O conceito de resiliência é proposto para explicar que a ambivalência vivida por estes gestores, que se traduz numa identidade profissional partilhada, ao invés de paralisante, é reconstituída de uma forma criativa e posta em prática ao serviço de ambas as identidades. O sistema de gestão do desempenho satisfaz assim os interesses tradicionalmente contraditórios em jogo (e.g. autonomia *versus* controlo). O que estes resultados indicam é que a capacidade humana para alterar a definição de situações potencialmente adversas para o etos profissional tem sido largamente subestimada.

As práticas conversacionais têm um papel crucial nas dinâmicas de organização social. Aquilo que a retórica e prática de gestão significam depende largamente da forma como ambas são (re)interpretadas em interacção. Este aspecto tem sido largamente subestimado nas perspectivas que enfatizam o valor das práticas sociais na organização do conhecimento. Esta temática é discutida no Capítulo 5. Os dados empíricos mostram que trabalho dos gestores de investigação, como aliás de

quaisquer outros gestores, é essencialmente conversacional. As suas práticas conversacionais influem na organização social do trabalho a três níveis, 'informal', 'formal' e 'solene'. Estas práticas apresentam objectivos, processos e efeitos secundários distintos. O 'informal' define o nível no qual as relações profissionais se misturam com as cumplicidades dos relacionamentos inter-pessoais. O 'formal' refere-se ao desenvolvimento de mecanismos de auto-regulação e legitimação intra-organizacional. Por fim, o nível 'solene' representa o espaço no qual as políticas e linhas estratégicas de acção são definidas. O capítulo conclui argumentando que as práticas conversacionais constituem uma estratégia que permite aos gestores de investigação não só realizarem o seu trabalho, mas também moderar e mediar o desenvolvimento do conhecimento.

A forma como diferentes concepções sobre o conhecimento ecoam nos princípios e práticas de gestão da qualidade é analisada no Capítulo 6. Pressões de vária ordem têm levado as organizações vocacionadas para a investigação a adoptarem ou redefinirem práticas no âmbito da gestão da qualidade. Não obstante os sistemas organizacionais estarem entre as principais forças que intervêm na construção social dos conceitos de qualidade, estes têm sido largamente marginalizados pelos estudos sobre a qualidade do conhecimento. Os dados deste estudo mostram que os sistemas de qualidade da investigação são dominados por uma perspectiva limitada do 'conhecimento enquanto património', ao invés de uma concepção do 'conhecimento enquanto prática social'. Os resultados também indicam que é errado ver os sistemas de qualidade apenas como 'representação do real'. A prática da gestão da qualidade desvia-se parcialmente da sua retórica, para ter um papel constitutivo na definição das várias perspectivas de produção de conhecimento. No capítulo 6 conclui-se que a prática da gestão da qualidade co-constitui a retórica da qualidade e, desta forma, a qualidade em si mesma.

Perceber os efeitos da gestão do conhecimento na motivação para o trabalho presume compreender de que forma a motivação está relacionada com os aspectos conhecimento-intensivo do trabalho. O Capítulo 7 sistematiza e caracteriza teorias motivacionais relacionadas com trabalho baseado em conhecimento, antes de analisar a percepção que os gestores têm da motivação para a investigação e de que forma esta percepção influi nos seus estilos de gestão. Os resultados mostram que os gestores de investigação vêem a motivação intrínseca dos investigadores como garante central de criatividade e qualidade do seu trabalho, embora situada fora da sua esfera de influência. A sua acção procura assim assegurar que o capital de motivação intrínseca não desapareça. O capítulo apresenta duas conclusões chave: (a) embora o conhecimento resida largamente nos indivíduos, o seu exercício é fundamentalmente uma actividade social; (b) uma compreensão dos motivadores para o trabalho baseado em conhecimento não pode dissociar-se dos mecanismos sociais que legitimam a sua relevância.

As conclusões principais desta dissertação são analiticamente discutidas no Capítulo 8. A metodologia utilizada é reflexivamente revista. As implicações dos resultados para o desenvolvimento teórico da gestão da investigação e gestão do conhecimento são delineadas. O capítulo conclui identificando algumas limitações deste estudo e propondo futuras linhas de investigação.

ABOUT THE AUTHOR

Célio Alberto Alves de Sousa was born on the 21st November 1970 in Porto, Portugal. In 1993 he completed his licentiate degree in *International Economical and Political Relations* at Minho University, Braga, Portugal. Between 1994 and 2000 he worked as human resource manager at an industrial company in northern Portugal. While working full-time, he did follow a two-year advanced program in *Business Administration*, specialization in Human Resources Management at the Instituto Superior de Tecnologia Empresarial, Porto, between 1996 and 1998. The research thesis that completed this program, examined the emerging fields of 'Knowledge Management' and 'Intellectual Capital'. A local publisher in the field of 'Organizational Behaviour and Human Resource Management' published it in 2000. He was hired as a junior researcher to carry out a PhD project at the department of Strategic Personnel Management, Nijmegen School of Management, Radboud University Nijmegen, the Netherlands in 2001. This dissertation is the outcome of that research project.