

Bridging the gap between theory and practice in management accounting

Reviewing the literature to shape interventions

E. Pieter Jansen

*Faculty of Economics and Business, University of Groningen,
Groningen, The Netherlands and
Flynth (Consultants and Auditors), Arnhem, The Netherlands*

Abstract

Purpose – Although management accounting tools and techniques are developed to solve practical problems in organizations, there is a lot of criticism of management accounting research for not having an impact on practice. In interventionist research, the “shaping” of an intervention to solve a practical problem is an important step. The purpose of this paper is to explore how the findings of management accounting research can be reviewed to make them practically applicable in shaping an intervention.

Design/methodology/approach – The paper is based on the author’s experiences with an interventionist research project.

Findings – Systematic literature reviews, which are common in engineering and medicine, bring together the academic knowledge that can contribute to solutions for a specific practical problem, including a definition of the ways in which this knowledge can be applied. Inspired by the methodology for conducting such reviews, this paper proposes how interventionist management accounting researchers can use existing theoretical knowledge in shaping interventions that aim to solve a practical problem. After an intervention, the analysis of the intervention’s unforeseen effects can provide a basis for the refinement of the theory identified in the literature review.

Research limitations/implications – Such a literature review can be organized according to four approaches to taking theoretical knowledge into practice. Unforeseen effects of the intervention can guide the selection of additional theory that helps to interpret these effects and refine normative and academic theory.

Originality/value – In management accounting it is uncommon to review the literature with the aim of shaping a solution for a practical problem. This paper explores how literature reviews that focus on a specific practical problem can contribute to bridging the gap between theory and practice.

Keywords Management accounting, Interventionist research, Bridging theory and practice, Systematic literature reviews

Paper type Research paper

1. The gap between management accounting research and practice

Management accounting research is often criticized for not having an impact on practice (Guthrie and Parker, 2017, p. 8; Malmi and Granlund, 2009; Lee, 2004; Swieringa, 1998; Inanga and Schneider, 2005). Management accounting is particularly vulnerable to such criticism because it is fundamentally an applied field, focused on providing solutions for practical problems of organizations (Tucker and Lowe, 2014, p. 398; Tucker and Parker, 2014, p. 105).

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Malmi and Granlund (2009) argued that academic researchers are primarily focused on writing for other researchers and not for practitioners (i.e. the users of accounting information, such as managers, workers and society), who might benefit from management accounting research to address practical issues. Practitioners in engineering, medicine and agriculture benefit from the (also in these professions sometimes problematic) nexus with the physical and biological sciences (Van de Ven and Johnson, 2006). Equivalently, producing management accounting theory that is more useful for practitioners implies that there should be a well-functioning nexus between the contributing disciplines (the social sciences) used by academic researchers and the management accounting tools and techniques that practitioners need to deal with practical issues. Anderson *et al.* (2001) proposed a classification of applied social sciences, consisting of four types and this classification is based on the following two dimensions: theoretical and methodological rigor (which is either “high” or “low”) and practical relevance (also “high” or “low”). “Popularist science,” the first type, is low on theoretical and methodological rigor and high on practical relevance. “Pragmatic science,” the second type, is both high on theoretical and methodological rigor and on practical relevance. “Puerile science,” the third type, is neither rigorous nor practically relevant. “Pedantic science,” the fourth type, is high on rigor and low on practical relevance.

1.1 *A lack of pragmatic science in management accounting research*

Academics in management accounting who want to present practically useful recommendations have to face the challenge of contributing to pragmatic science. However, as will be argued below, most of the management accounting literature could be termed either popularist science on the one hand or pedantic science on the other. The accounting literature is diverse in its focus. At one extreme, there is the genre, which Lukka and Granlund (2002) term “prescriptive” literature, which provides tools and techniques for solving specific, practical problems. At the other extreme, there is the genre, which Lukka and Granlund (2002) call “academic” literature, which explains the use and effectiveness of these accounting tools and techniques. Fragmentation between these two genres is a popular explanation for the limited impact of academic management accounting research on the work of practitioners; these genres rely on different types of theories and there is a lack of communication between them (Lukka and Granlund, 2002; Malmi and Granlund, 2009).

The prescriptive literature relies on “normative” theories, often in the form of tools or techniques. As an illustration of a normative theory Malmi and Granlund (2009, p. 605) discussed the concept of value-based management, which suggests that to maximize shareholder value a number of managerial steps should be taken. Other examples of normative theories are activity-based costing (as described in Cooper and Kaplan, 1991, 1992) and the balanced scorecard (as described in Kaplan and Norton, 1992, 1993, 1996a, b). Professionally oriented journals such as *Accountancy*, *Harvard Business Review*, *Journal of Cost Management*, *Strategic Finance* and *Financial Management* have published many short papers about activity-based costing that are based on such normative theories. Normative theories typically provide practitioners with a structure to deal with such practical issues as the assignment of indirect costs, aligning strategy and management control and assessing shareholder value. The difficulty with these normative theories is that the argumentation is “[...] often only vaguely founded on explicit empirical [...] premises” (Lukka and Granlund, 2002, p. 172). Rather than rooting the development of accounting practices in systematic empirical research, the prescriptive literature focuses on the persuasion of practitioners to adopt a tool or technique that is directly applicable in practice. The number of arguments is typically low and these arguments rarely deal with the circumstances under which the claims of normative theories do or do not hold (Lukka and Granlund, 2002). For that reason, normative theories do not have “theory status” in the academic world (Malmi and Granlund, 2009). In other words,

much of the prescriptive management accounting literature is based on popularist science. Only the prescriptive literature, which is supported by (quantitative and/or qualitative) empirical evidence, can be classified as pragmatic science.

The academic and the prescriptive literatures have different ways of using evidence and use different kinds of theory. Academic literature is typically based on (some form of) empirical evidence. Rather than giving specific directions about how to use accounting tools in solving practical problems, the academic literature offers space for counter arguments and studies; for example, how and why accounting tools diffuse or fail. "Theories that have theory status" in the academic world typically contain four elements: factors which are part of the explanation of the analyzed phenomena; the way in which these factors are related; an explanation of how these factors are related and the conditions under which the propositions included in the theory apply (Malmi and Granlund, 2009, pp. 600-601). The theories used in academic accounting research are typically from the fields of economics, organization theory (including contingency theory), sociology and psychology (Malmi and Granlund, 2009, p. 602). These theories are not specific to management accounting and Malmi and Granlund (2009, p. 603; also see Quattrone, 2009, p. 621) have argued that the use of these theories leads to findings that are often so general and self-evident that they are of limited use for practitioners. In Anderson *et al.*'s (2001) classification, much of the academic accounting literature could be classified as pedantic science: high on rigor and low on practical usefulness.

For practitioners, the prescriptive literature has the advantage that it provides them with tools and techniques that are developed to deal with specific practical issues, but its disadvantage is that the evidence for the effectiveness of those tools and techniques is usually poor. However, the results of the academic literature are often problematic for use in solving specific practical problems. According to Tucker and Parker (2014, p. 109), there is a "translation barrier" between research and practice. For practice, it would be valuable to have management accounting literature that is based on pragmatic science. Typical of pragmatic science is that it combines the applicability of the prescriptive literature and the empirical evidence of the academic literature.

There seems to be a lack of pragmatic science in management accounting. Tranfield *et al.* (2003) argued that conducting so-called systematic literature reviews can help to generate pragmatic science. In engineering and medical sciences, the methodology of systematic literature reviews, which has developed over the last few decades, can contribute to the "restructuring" of the results of academic research in a form that makes them applicable in practice. Such a review is focused on a specific practical problem and brings together all the literature about how this problem could be solved, for example by defining "evidence-based practices" (Tranfield *et al.*, 2003). Systematic literature reviews contribute to the development of pragmatic science: drawing on pedantic science (documented in the academic literature) such reviews evaluate whether and how the recommendations of popularist science (documented in the prescriptive literature) are supported by empirical evidence. Also, it reviews the findings of the academic literature that can provide a basis for recommendations about how to solve the specific practical problem.

1.2 Approaches to taking theoretical knowledge into practice

In management accounting there are separate streams of positivist and interpretive research. Both streams provide evidence for theoretical knowledge and some of this knowledge can be taken into practice. However, theoretical knowledge originating from positivist research needs to be taken into practice in a different manner to theoretical knowledge originating from interpretive research. In their most extreme forms, the definitions of positivist and interpretive research can become strawmen which are easy to dismiss. Most empirical research will be more nuanced forms of these approaches.

However, a discussion of positivist and interpretive research will help us to understand the different approaches for taking theoretical knowledge into practice.

There is a significant and influential stream of management accounting research that is based on the positivist view (Hopper and Powell, 1985; Labro and Tuomela, 2003). The positivist view originates from the natural sciences and, in its most extreme form, focuses on the production of knowledge which is invariable in time and space, seeks law-like generalizations and formulates deterministic theories (Burrell and Morgan, 1979; Hopper and Powell, 1985; Lukka and Suomala, 2014; Lukka, 2014). It is based on the assumption that management universalities exist and that theory concerning cause and effect relationships between managerial interventions and their effects can be developed and that such theories enable the making of predictions and the regulation of human behavior.

In the social sciences, the positivist view has been challenged and alternative approaches to causality have evolved (Burrell and Morgan, 1979). In accounting, interpretive research has become an alternative to the positivist approach. Interpretive research also investigates causality, but rejects the idea of deterministic theories that can be “directly” applied to regulate human behavior. To understand human behavior, interpretive researchers emphasize the importance of investigating the “subjective experiences in the construction of social reality” of those being studied (Lukka, 2014, p. 561; Kakkuri-Knuuttila *et al.*, 2008). Whereas positivist research assumes the existence of an objective reality, interpretive research assumes that reality is socially constructed (Lukka, 2014, p. 561).

This also has implications for the emphasis on theory development. Typical for positivist researchers is that they aim at “linear cumulative knowledge accumulation” (Granlund and Lukka, 2017). They see their case studies as exploratory; enabling them to develop hypotheses which can subsequently be tested using quantitative research methods with large databases (Lukka, 2005, p. 378). In contrast, interpretive researchers see case studies as more central to their research methods. Although they are less focused on the accumulation of knowledge, they use theory to make sense of the observed phenomena. Interpretive researchers use case studies to question and challenge existing theory and to develop new or refine existing theory with the objective of understanding the observed phenomena (Keating, 1995). Interpretive researchers use a more “pragmatist, practice-based approach” that enables the use of a variety of theoretical perspectives. Interventionist management accounting research will often be based on such an interpretive approach to using theory, as it enables us to understand the everyday practices of a specific organization (Granlund and Lukka, 2017).

The distinction between the positivist and the interpretive view suggests differing approaches for taking theoretical knowledge into practice. In its most extreme form, positivist research focuses on the development of law-like theories that enable the making of predictions concerning the effects of management interventions in a certain population of, for example, organizations, managers or employees. In this extreme form, positivist research aims to define practical recommendations that take the form of specific actions with foreseeable effects in relation to well-defined practical problems. Alternatively, in interpretive research the “life-worlds” and meanings of the people being studied are considered as important elements in causal explanations (Lukka, 2014; Kakkuri-Knuuttila *et al.*, 2008). The analysis in interpretive research typically starts with empirical observations and the researcher seeks to make sense of (i.e. interpret) those observations. In so doing, existing theoretical knowledge is used and the interpretation enables the further development and refinement of that knowledge (Lukka, 2014). The empirical observations and the researcher’s interpretation of them do not exist in a theoretical vacuum and it is the refinement and development of theory that facilitates the transfer of research findings to other settings than those being investigated. Instead of providing practical recommendations with foreseeable effects, interpretive research seeks to develop and

refine theory that helps researchers to better understand and to analyze practical problems, and helps them to explore of how these problems might be solved.

In management accounting, normative theories (such as activity-based costing and the balanced scorecard) concern specific practical problems (such as an order-acceptance decision or the implementation of strategy) and provide very specific recommendations about the actions to be taken to solve these problems. However, in management accounting such normative theories are usually a form of popularist science as there often is little empirical evidence to support the recommendations in the prescriptive literature and the effects of such practical recommendations are often difficult to foresee. These effects can only be foreseen, if there is academic theory which provides ground for causal predictions concerning the effects of specific actions in relation to well-defined practical problems; only then can the theories from the normative literature be deemed to be pragmatic science.

Thus far, management accounting research has not been successful in defining academic theory which enables the making of such predictions and it does not provide much ground for defining actions which have foreseeable effects in solving specific practical problems (Zimmerman, 2001). This might also explain why the findings of (in particular, positivist) academic accounting research have been criticized for being too general and self-evident to be useful for solving practical problems (Malmi and Granlund, 2009, p. 603; Tucker and Lowe, 2014). As an alternative to theory that enables the making of predictions, much (interpretive) accounting research focuses on the development of theory that helps to explain accounting practices; for example, why and how organizations use the “tools” recommended in normative theories. More specifically, interpretive case studies can contribute to the refinement of theory which could be helpful in enabling practitioners to understand the implementation, and failures in the implementation of accounting tools. Such interpretive academic research can lead to theoretical knowledge that could enable practitioners to better understand the issues they face; thereby providing them with practical suggestions about how their problems might be addressed, but not by identifying for them specific actions that have foreseeable effects (Lukka, 2014, p. 565).

This paper discusses how reviews of the accounting literature which report the findings of the different research approaches, as well as the development of the different types of theory, can be used in designing and conducting interventionist research. In particular, it discusses how literature reviews can be used in shaping an intervention that seeks to solve a specific practical problem.

1.3 Literature reviews

Literature reviews can have differing objectives. Often, literature reviews aim to identify a gap in existing knowledge and, by doing so, motivate and locate the contribution of empirical research. Also, many literature reviews have the objective to develop theory or to develop a structure for analyzing data. In the management accounting literature, reviewing the literature to locate a research project’s contribution or to develop theory that provides structure to the analysis of the data is very common. However, literature reviews that aim to bring together the available knowledge of how to solve a specific practical problem have remained scarce in management accounting research.

To facilitate the development of pragmatic science in management accounting, more experience is needed in conducting literature reviews that focus on solving practical problems. Interventionist management accounting research is suggested as a way to bridge the gap between theory and practice (Malmi and Granlund, 2009, p. 613; Kasanen *et al.*, 1993; Mattessich, 1995). In this paper it will be argued that interventionist research can be a useful context in which to build experience in conducting literature reviews that take the results of academic research into practice. In interventionist research practitioners and academics cooperate in solving a practical problem and by doing so contribute to the

development and refinement of theory. In interventionist research theoretical knowledge should be brought together in a form that can contribute to solving a practical problem. For example, in constructive research, which is one of the forms of interventionist research, the accumulated theoretical knowledge typically takes the form of models, plans or organizations (Jönsson and Lukka, 2005, p. 11; Kasanen *et al.*, 1993, p. 245).

This paper draws on the author's own experience in conducting an interventionist research project and explores how knowledge, which is available in the prescriptive and academic literatures, could be systematically reviewed and, by doing so, shaped and synthesized into a form that is practically applicable. The ideas about how to conduct a literature review that helps to shape an intervention, which are described in this paper, were developed during this project. The approach to reviewing the literature that this paper proposes was based on the author's *ex post* reflection on his experiences in this project. As such, the project is used in this paper as an illustration of how a literature review could identify theoretical ideas to be used in solving a specific practical problem. It is important to recognize that a systematic literature review was not undertaken in this project. Nevertheless, the project can be used to illustrate how such a review could be used in interventionist management accounting research. This paper explains what a systematic literature review is and discusses how the existing methodology for conducting such reviews could be adjusted so that it can contribute to interventionist management accounting research. In particular, the paper addresses how literature reviews can be conducted in order to provide a basis for shaping an intervention that seeks to solve a practical problem. Also, it will discuss how literature reviews that focus on a specific practical problem can contribute to analyzing the effects of an intervention and to identifying the project's contribution to the development of theory.

Sections 2-4 of this paper summarize the interventionist research project in order to explain the problems that occurred in applying existing theoretical knowledge. The case description illustrates how theoretical ideas can contribute to shaping an intervention. On the basis of a reflection of how this was done in this project, the paper proposes an approach to reviewing the literature that brings together diverse theoretical ideas. An interventionist research project starts with a practical problem of an organization. The problem is the basis for defining the project's objectives. However, defining an interventionist project's objectives is a subjective and political process, depending on the views, interests and power relations of the various stakeholders in the project. Section 2 describes the objectives of the project that this paper discusses and the process of defining those objectives. After defining the project's objectives, an intervention to solve the organization's practical problem needed to be shaped. Shaping an intervention turned out to be a heuristic and political process. The selection of theoretical knowledge to be used to shape the intervention, again, depended on the views, interests and preferences of influential stakeholders in the project. As the selected theoretical knowledge was taken from both pedantic and popularist science, it was problematic to apply it in shaping the intervention. Nevertheless, this theoretical knowledge was taken into practice, but in an implicit manner as will be shown in Section 3. As a consequence of the unpredictability of social processes, interventions will often have unforeseen effects. Analyzing these unforeseen effects offers opportunities to develop new theory and to refine the theoretical knowledge that was used in shaping the intervention. Section 4 reflects on how, in this project, the analysis of unforeseen effects contributed to theory development and how interventionist research contributed to the refinement of the theoretical knowledge used in shaping the intervention. Section 5 explains the lessons learned from this project: it proposes in detail how, in interventionist management accounting research, a review of theoretical knowledge originating from pedantic and from popularist science can lead to pragmatic science and thereby provide a more explicit basis for practical interventions and for theory development, than in this project. In doing so, Section 5 further refines the approach to undertaking

literature reviews that aim to solve practical problems (as proposed by Tranfield *et al.*, 2003) in order to make it appropriate for interventionist management accounting research. Section 6 reflects on the implications for reviewing the management accounting literature.

2. Case setting, the start of the project and research objectives

The interventionist research project discussed in this paper was located in an automotive company, named Van den Udenhout (VdU). The project lasted from 2007 until 2011. At the start of the project, VdU owned four car dealerships (selling Volkswagen and Audi cars and Volkswagen Commercial Vehicles), two bodyshops, a car lease company and a finance & insurance company, employing in total 291 people. VdU was organized in profit centers, where each profit center had its own manager, its own targets (sales volume and gross profit), its own monthly profit and loss account and its own three-monthly customer satisfaction score. Each dealership was organized into two profit centers: sales (new and used cars) and after sales (service and parts). In addition, VdU had the following profit centers: bodyshops, a car lease company and a finance and insurance company.

Since 2006, and throughout the project, VdU has remained profitable (despite the crisis). Nevertheless, the MD was worried because salesmen tended to lose interest in their customers after making “the deal.” According to him, the situation was the same in VdU’s other departments: the service department was only interested in selling repairs and parts and they lose interest after the customer has paid the bill. VdU’s customer satisfaction ratings were high, but it was the MD’s view that customer satisfaction is not enough to ensure customer loyalty and that customers buy products and services at all the company’s departments. The MD’s view that customer satisfaction does often not lead to customer loyalty is also confirmed in the academic marketing literature (see, for example, Reinartz and Kumar, 2003, 2005; Tsao 2013; Vogel *et al.*, 2008).

Before the start of the project (in 2006), the manager of VdU’s bodyshops invited the author of this paper to organize a workshop for several VdU managers (the MD, the controller, the service manager, the sales manager new cars, the sales manager used cars, two managers of VdU’s car lease company and the HR manager). After an introduction, the participants in the workshop were asked to reflect on the following questions: what will determine VdU’s financial performance five years from now? and how can you (as a manager) provide a basis for such future performance in doing your daily work? The MD and the author summarized the conclusions of the workshop’s participants in an interactive manner. The conclusion was that there are two areas affecting future performance where VdU could improve considerably. First, cooperation between VdU’s several departments could be improved. For example, if the bodyshop concludes that a customer’s car is a “total loss” they could inform the sales department that the customer needs a replacement. In a similar way, the service department could inform the sales department if service jobs on an older car are becoming very expensive. The participants in the workshop agreed that improved cooperation could help to keep in touch with customers, instead of occasionally and coincidentally selling single products or services. Second, the participants agreed that VdU could benefit from more systematically recording customer information and maintaining customer relations, instead of losing interest in the customer after closing a deal.

After the workshop, the author and four VdU managers (the Managing Director, the manager of the bodyshops, a sales manager and a dealership manager) had several meetings in which they exchanged ideas about how the organization’s long-term focus could be strengthened and in which it was decided to start an interventionist research project. As a start of this project, the author interviewed 18 VdU managers. The interviews lasted between one and three hours. On the basis of these interviews, the author wrote a report which was discussed and approved by the project team, and then presented to the 18 interviewed managers.

This report led the MD to formulate a new vision about the way in which VdU's long-term focus could be improved: VdU's employees and managers should focus on systematically maintaining customer relations and cooperation with other departments to ensure that their customers continue to buy all their car-related products and services (including service, financial products and repairs) from VdU. After defining the project's practical objective (i.e. to contribute to the implementation of the MD's new vision), an intervention to solve this problem was developed and this will be discussed in the next section.

3. Developing an intervention and the combined use of academic and normative theory

In developing the intervention, two decisions had to be made. First, theoretical knowledge about how the practical problem in VdU could be solved needed to be identified, discussed and selected (see Section 3.1). Second, the intervention had to be developed. There were several approaches which could be used to apply theoretical knowledge in practice and decisions had to be made about how the selected knowledge to solve the practical problem would be put into practice (see Section 3.2).

3.1 *The selection of theoretical knowledge used in developing the intervention*

The selection of the ideas that gave direction to the intervention in VdU was made by the project team. In the project team's discussions the author used theoretical knowledge from the literature to make suggestions about how the MD's new vision could be realized. Inevitably, the preferences, knowledge, opinions and experiences of the team members guided the (to a large extent, subjective) selection of these ideas. Below, the ideas that were exchanged in the project team, the literature that the author used and the selection of the ideas for the development of the intervention will be discussed.

There is a vast literature about the use of bonuses in controlling organizations (see, for example, Leslie *et al.*, 2006; Baker *et al.*, 1988; Jensen and Murphy, 1990). One of the options that was considered was to change the compensation system for the salesmen in order to encourage them to maintain customer relations. The author wrote a proposal to revise the salesmen's compensation package. For several reasons, this compensation system was left unchanged. First, the MD was of the opinion that salesmen who did not adjust their work to systematically maintain their customer relations were not doing their job and should be fired. Second, from the academic literature we knew that in the Netherlands bonuses do not have a positive effect on financial performance and pay satisfaction (Jansen *et al.*, 2009).

Another option that was considered (and partly implemented) was to adjust the focus that is used in managing performance. In VdU, products are dominant in managing performance: unit costs and profitability are calculated per product and the organization is structured according to the products that they generate (e.g. there is a sales manager for new cars and a service manager). There are no managers who are responsible for the range of products and services provided to a specific group of customers. Literature on Activity-Based Costing and Strategic Cost Management argues that cost accounting and profitability analysis are dominated by a focus on products or transactions (see, for example, Cooper and Kaplan, 1991, 1992; Shank and Govindarajan, 1992; Smith and Dikolli, 1995). The ABC literature argues that in many circumstances focusing on customers is preferable to a focus on products. For example, selling a car at a loss may be acceptable if this sales transaction is a way to attract or to keep a loyal customer who also purchases more profitable products and services. If customer loyalty is important, then customers instead of products should be the object that the organization focuses on, for example in calculating unit costs and profitability. The idea that VdU should change its focus in measuring performance, in managing costs and in controlling operational processes from products and transactions to

customer relations aroused a lot of discussion. One approach that was discussed was to calculate and report costs and profitability per customer and per customer segment. This idea created a lot of resistance and was not implemented; this time the resistance came from the controller who argued that this change would require so much time that he would no longer be able "to do his actual work."

The adjustment of action controls (as defined by, e.g. Macintosh and Daft, 1987 and Simons, 1987) was also discussed in the project team. There was much support for introducing new action controls to implement the MD's new vision. VdU already worked with many protocols for operational processes. An example is the protocol that salesmen should follow after a potential new client has visited the showroom. That protocol prescribes when salesmen should ask for a potential customer's e-mail and phone number, when they should call back, when they should offer the customer a demonstration of the car and what should be included in VdU's offer. Another example is a protocol that prescribes how cars should be taken in and returned to the owner after a service job. Among VdU's managers there was support for the introduction of a new protocol defining how salesmen should maintain customer relations.

There also was consensus about the use of additional non-financial performance information. There was support for the view that the combination of financial and non-financial performance measures would help in the implementation of the new strategy, as recommended in the prescriptive literature (in particular, the balanced scorecard literature – see Kaplan and Norton, 1992, 1993, 1996a, b). This literature argues that an emphasis on mainly financial performance measures implies a focus on the recent past and does not stimulate managers to adopt a long-term focus. Using non-financial performance indicators concerning the organization's operational processes and its customers can, according to this literature, stimulate future financial performance. In VdU, the use of accounting information concerning the maintenance of customer relations (such as protocols and performance measures that indicate whether salesmen have actually contacted their customers as planned) can, according to the MD's vision and the interviewed managers, strengthen future financial performance.

In addition to the development of the intervention, as discussed above, the project team realized that the process of its implementation would be of great importance for its success. In particular, the participation of VdU's salesmen was essential to implement the new vision. The organization had to learn how to implement the MD's new vision. Although it is unclear which specific forms of participation are most effective and the expected outcome of participation does often not occur, it is known that participation of lower level managers and workers is necessary to implement a new senior management vision (see, e.g. Lines, 2004; Argote and Miron-Spektor, 2011; Russ, 2008; Armenakis *et al.*, 1993; Dachler and Wilpert, 1978; Locke and Schweiger, 1979; Cotton *et al.*, 1988; Woodman, 1989; Glew *et al.*, 1995).

Several ideas about how to implement the MD's vision were considered. The ideas that were supported by the management team were used as the basis for the intervention. These ideas were: there should be more emphasis on customer relations by periodically contacting customers and maintaining customer relations; a performance indicator that shows whether salesmen have actually contacted their customers as planned should be introduced and activities to facilitate the participation of lower level managers and salesmen in the implementation of the new vision should be organized.

As the previous literature on interventionist research has already indicated, shaping an intervention turned out to be a creative and, to some extent, even heuristic process in which teamwork, informal communication and the personal views of the project team members and other managers play an important role (Labro and Tuomela, 2003). In such a process, *ex ante* knowledge of relevant theory can help to develop effective interventions

(Labro and Tuomela, 2003). The selection of ideas, and searching the literature for theoretical knowledge about how to solve the practical problem, is a first step in developing interventionist research.

3.2 Taking theoretical knowledge into practice

The three ideas discussed above were used in shaping the intervention. Two of these ideas were used as an input to develop an information system to support VdU's salesmen in systematically maintaining customer relations. The third idea was used as an input for the workshops and interviews with lower managers and salesmen that were intended to facilitate their participation in the realization of the new vision. It was unclear how these ideas, which were partly derived from the literature, could be taken into practice. Although the literature provided theoretical knowledge about how to solve the practical problem, this literature was not based on "pragmatic science," i.e. science that is (theoretically and empirically) rigorous and practically relevant (as defined by Anderson *et al.*, 2001). The literature that was used was either academic (based on "pedantic science"; high on rigor, but low on practical relevance) or prescriptive (based on "populist science"; low on rigor, but high on relevance). Below, it will be described how the selected theoretical knowledge was nevertheless taken into practice.

To implement the new vision, a new information system was needed. The project team wrote a short note that described the requirements that the new information system had to meet. These requirements comprised of: the availability of a portfolio of customers per salesman; the customer information concerning individual customers that the salesmen need; a tool that generated a monthly list of customers that needed to be contacted by each salesman and management information for the direct superiors of the salesmen to control whether customers are contacted as planned. An information system (called "PCRM") was developed by a consultancy firm. This system contained a customer portfolio for each salesman (with a list of approximately 700 customers with whom a salesman has to maintain a relationship), protocols (that prescribe when salesmen have to contact individual customers in their portfolio, including a list of products and services to be discussed) and customer information sheets for each individual customer (containing information about, for example, the customers' family, car, insurance and spending in the service department and bodyshop) and a performance measure for each individual salesman that indicates whether he has contacted all his customers as prescribed in the protocol.

The project team also wrote an implementation plan that described how the project team intended to convince VdU's lower managers and salesmen of the MD's new vision which meant that they were to become responsible for the systematic maintenance of customer relations, to introduce the PCRM system and the new rules concerning contacting customers and to help lower managers and salesmen to learn how they could build up and maintain long-lasting relations with customers. The knowledge of how to maintain long-lasting customer relations was not available in the organization and salesmen needed to learn how they can do it. To develop this knowledge and ensure that it would be available to the lower managers and salesmen, their participation was essential. To facilitate this participation, the project team organized several interactive workshops with dealership managers and with salesmen, as well as individual interviews with all the dealership managers and all the salesmen.

The ideas that were the basis for implementing the new vision originated from the discussions in the project team. In these discussions, the author's knowledge of the literature also played a role, but taking this knowledge into practice in an explicit manner turned out to be complex. Difficulties for taking theoretical knowledge into practice are not unique to this project and are not unique to management accounting. Van de Ven and Johnson (2006, p. 803) argued that practitioners in fields such as medicine, human resources and

management often fail to adopt the findings of research, because “[...] the knowledge that is produced is [seldom] [...] in a form that can be readily applied in practice.”

In shaping an intervention, the question of how the practical implications of academic research and the recommendations in the prescriptive literature can be taken into practice needs to be considered. More specifically, in reviewing the literature for solutions to a practical problem the following questions can help to define how practical implications can be applied. First, what is the nature of the recommendations in the literature? Does it recommend specific actions to deal with a well-defined practical problem or does it provide possible solutions that are worth further exploration in the practical setting, and does it identify specific risks? Second, what empirical evidence does the literature provide concerning the way in which these recommendations can contribute to the solution of the practical problem? Literature reviews that combine findings from the academic and the prescriptive literature and that address these questions can contribute to the development of pragmatic science in management accounting.

In the project at VdU, theoretical knowledge from the prescriptive and the academic literature was used to shape the intervention. However, the way in which the theoretical knowledge from this literature was taken into practice was rather implicit. The reason it was done in an implicit manner is that the two questions mentioned above concerning the applicability of the theoretical knowledge that helped to shape the intervention had remained unanswered. The first question concerns of how this theoretical knowledge can be taken into practice. If the theoretical knowledge from the literature takes the form of specific actions to solve a practical problem, then the interventionist researcher can use this theoretical knowledge to make a detailed program of activities. However, if such knowledge takes the form of suggestions for possible solutions for a practical problem (instead of specific actions), then interventionist researchers need to adopt a more flexible approach to using this knowledge in shaping the intervention. The second question concerns the evidence for the theoretical knowledge about how to solve a practical problem: if the evidence for this knowledge is weak, an interventionist research team needs to be more careful in taking it into practice.

The available knowledge that was used in shaping the intervention at VdU was either in the form of pedantic science (the knowledge derived from the academic literature) or of popularist science (the knowledge from the prescriptive literature). By addressing the two questions just mentioned, interventionist researchers can contribute to explicitly defining how theoretical knowledge from the literature can be taken into practice and to generating knowledge in the form of pragmatic science. Later, in Section 5, this paper will propose, in more detail, how these questions can be dealt with in a literature review and how such a review can lead to pragmatic science. However, such a review was not conducted in the project at VdU (and has, to the best of the author’s knowledge, thus far not been used in other interventionist management accounting research projects). The proposed approach is the result of the author’s reflection on the difficulties encountered during this project. The case is used here as an illustration of how theoretical ideas could be taken into practice and as a basis to suggest how this might have been done better, rather than as evidence for the feasibility of this approach.

4. The analysis of unforeseen effects of interventions

One and a half year after the workshops and interviews that were intended to support the implementation of the change, the author interviewed a selection of VdU’s managers to evaluate the project. The results of this evaluation enabled the author to reflect on the effectiveness of the intervention and the way in which the theoretical knowledge from the prescriptive and the academic literatures that had been used in shaping the intervention had contributed to realizing the objectives of the change. In addition to

the foreseen effects, the intervention also had unforeseen effects. There are several explanations why such unforeseen effects occur. As explained earlier, selecting theoretical knowledge for use in shaping an intervention is partly a heuristic, creative and even political process (Labro and Tuomela, 2003; Lukka, 2000, 2002). Some theoretical knowledge about how to solve the identified practical problem may be unacceptable for important stakeholders in the organization. Unforeseen effects of interventions can occur because selecting theoretical knowledge that is to be used in shaping the intervention is not a completely rational process. One explanation for unforeseen consequences could be that the theoretical knowledge selected to shape the intervention is inadequate to solve the identified practical problem, due to the heuristic nature of selecting such theories. A more fundamental explanation is that the social world is so complex and uncertain that much of the theory available in the (academic and the prescriptive) management accounting literature does not provide a sound basis for predicting the effects of management interventions and, as a consequence, unforeseen effects inevitably occur. By analyzing such unforeseen effects, interventionist research can contribute to the development of academic theory. In this analysis, theoretical knowledge additional to that used in shaping the intervention may be needed, as will be demonstrated below.

After conducting the intervention at VdU (as described earlier), the project team was surprised by the differences between the four dealerships in the effects of the intervention. These differences concerned whether or not the salesmen had phoned all their customers as planned, the registration of customer information that they had gathered and the initiatives taken on the basis of this information. The project team analyzed these differences by reviewing the customer information sheets and interviewing salesmen and their direct superiors. The project team then explored how these differences could be explained and discovered that the dealerships' salesmen and sales managers differed in the way in which they participated in learning how to implement the MD's new vision and that these differences led to the different effects of the intervention. The formal forms of participation, put in place by the project team (i.e. the project team's interviews and workshops with all the salesmen and sales managers of all the dealerships) were insufficient to implement the new vision. It was only where, in addition to the formal forms of participation, more informal forms of participation spontaneously developed, that the salesmen and sales managers learned how they could contribute to the realization of the MD's new vision. This informal participation facilitated discussions among salesmen and sales managers, and these discussions helped them to learn how to contribute to the implementation of the new vision.

The project team's observation of these unexpected differences between the dealerships was the reason for the author to reconsider the academic literature on participation. Theoretical knowledge from this literature was, as explained earlier, used in shaping the intervention. There was empirical evidence that the participation of lower managers and workers is important in the implementation of a new vision, but existing knowledge concerning participation still had (and has) numerous limitations. The expected positive effects of participation are often unrealistic (see, for example, the literature reviews by Dachler and Wilpert, 1978; Locke and Schweiger, 1979; Cotton *et al.*, 1988; Woodman, 1989; Glew *et al.*, 1995). In particular, how forms of information (such as accounting and fine-grained information) can contribute to the implementation of a new vision has also largely remained unanswered (Argote and Miron-Spektor 2011, p. 1129-1130). Analyzing the unexpected differences between the dealerships in their participation in the implementation of the change and in the exchange of information provided an opportunity to refine existing academic theory about how different forms of participation can contribute to the exchange of the (accounting and more fine-grained) information that people need to learn how they can contribute to the realization of a new vision. New theoretical knowledge concerning participation was introduced into the research when the (unforeseen) effects of the

intervention were analyzed and research papers written to contribute to the development of academic theory.

In interventionist research, theoretical knowledge from both the academic and the prescriptive literature can be used to shape an intervention that is intended to solve a practical problem. After the intervention, an evaluation of its effects can provide the basis for refining the theoretical knowledge that was used in its development. Such an intervention can benefit from literature reviews that aim to bring together theoretical knowledge about how to solve a practical problem and this knowledge can then be used in shaping the intervention. The next section will explore in more detail how we could conduct such literature reviews in interventionist management accounting research. It will do so by comparing management accounting with engineering and medical sciences where a methodology for conducting “systematic literature reviews,” focused on solving practical problems, has been developed. At a very general level, engineering could be seen as applied physics or chemistry and medicine as applied biology. Equivalently, management accounting could be seen as applied social science. Typical of engineering and medicine is that they provide “tools” for practitioners and prescribe specific actions to address specific problems which have been scientifically proven to be effective. However, the methodology that has developed in engineering and medical sciences cannot be transferred to management accounting unadjusted. The next section will explore how this methodology can be adjusted and how we could conduct literature reviews in management accounting that can be used to shape an intervention that aims to solve a practical problem.

5. Literature reviews of management accounting research

As discussed in Section 1.2, there are several approaches for taking theoretical knowledge into practice, ranging from specific actions with foreseeable effects (based on the most extreme form of positivist research) to suggestions about how to explore potential solutions to practical problems (based on interpretive research that explains, for example, the failure of management accounting change). An important lesson learned from the interventionist research project at VdU stems from the recognition that in this project the question of how theoretical knowledge could be taken into practice was addressed in a rather implicit manner. To take theoretical knowledge into practice in a more explicit manner in interventionist research, we need to consider the role and nature of literature reviews (see Section 3) and also how analyzing the effects of an intervention can provide the basis for explicating the project’s contribution to existing knowledge (see Section 4). This section will propose a way to review the literature that could help interventionist management accounting researchers to adopt a more explicit approach for taking theoretical knowledge into practice. In proposing how such a review can be conducted, this section will take several steps. First, the process of conducting a literature review focused on the identification of theoretical knowledge that can be used in shaping an intervention will be discussed in Section 5.1. Second, Section 5.2 defines four specific approaches for taking the theoretical knowledge identified in the literature review into practice. Finally, Section 5.3 explores how the proposed approach for reviewing the literature can contribute to the process of knowledge creation in interventionist management accounting research.

5.1 *Reviewing the literature to shape an intervention*

Literature reviews can be conducted for several purposes: for example, to locate a gap in existing knowledge, to develop a theoretical structure for data analysis and to shape an intervention that intends to solve a specific practical problem. Typically, systematic literature reviews conducted in engineering and in the medical sciences focus on a specific and significant practical problem (Tranfield *et al.*, 2003, p. 215). The purpose of such a systematic literature review is to provide an overview of the existing knowledge about how

the practical problem can be solved (Tranfield *et al.*, 2003; also see Fink, 2014; Hart, 1998). According to Tranfield *et al.* (2003, p. 208), using such literature reviews can provide practitioners with a reliable basis for their actions. As such they can also provide the basis for shaping the intervention in an interventionist research project.

It is recommended that such systematic literature reviews are conducted by a panel of reviewers, comprising both academics and/or practitioners (Tranfield *et al.*, 2003). The practitioners should be selected on the basis of their experience in dealing with the selected problem, as this can help to judge the feasibility of possible solutions identified in the literature. In conducting the review, Tranfield *et al.* (2003) suggest a three stage process (also see Briner *et al.*, 2009 for a more detailed description). The first stage is the planning of the review which includes the definition of its purpose, the construction of a review protocol which sets out the population to be covered in the review (i.e. the domain from which studies will be selected for inclusion in the review) and the criteria for inclusion or exclusion of the studies which will form the basis of (practical) recommendations. The second stage is to select studies for inclusion in the literature review, applying the criteria previously defined. The third stage is the evaluation of the selected studies by the reviewers (or by the review panel). In this evaluation the reviewers draw conclusions about the “robustness” of the evidence available for making practical recommendations. In medical science, for example, reviewers classify the results of the available studies in a “hierarchy of evidence,” which consists of mutually exclusive categories, such as supported: by “double-blind randomized controlled trials,” by “well-conducted case-control studies,” by “peer leader opinion” or by “personal experience” (Tranfield *et al.*, 2003, p. 219). The purpose of such systematic reviews in medical science is often to define evidence-based practices based on the results of empirical research into the cause and effect relationships between interventions and their effects. In the third stage reviewers formulate recommendations in a form that can be easily applied in practice, for example in protocols or checklists. Protocols or checklists are ways in which pragmatic science (as explained in Section 1 and defined by Anderson *et al.*, 2001) can be communicated, for example to practitioners.

As all academic disciplines are different, the methodology for conducting systematic literature reviews which has developed in recent decades in engineering and medical sciences, may not be transferred unadjusted to management or management accounting disciplines (Briner *et al.*, 2009, p. 26; Denyer *et al.*, 2008). First, in management accounting defining which studies are useful as a basis for making practical recommendations will be more complex than in engineering and in medicine. In engineering and in medical sciences, it may be clearer which academic disciplines can provide knowledge that can help solving a practical problem. However, to solve practical management problems theoretical ideas from the management accounting literature with often need to be combined with theoretical ideas from other disciplines, such as marketing or strategy. As a consequence, defining criteria for including studies in the literature review undertaken in preparing an intervention will be problematic in interventionist management accounting research. Therefore, additional studies may need to be taken into consideration during the project, after the literature review has been conducted.

Second, the “hierarchy of evidence” used in engineering and medical sciences cannot be used in management accounting. The research findings which score highly in the hierarchy of evidence, mentioned above, provide a basis for predicting the effects of specific actions. As in engineering and medical sciences the making of predictions is often considered possible, it is quite appropriate to use such a hierarchy in conducting systematic literature reviews and to define evidence-based practices. However, in management and in management accounting it is problematic to identify cause and effect relationships and to make predictions about the effects of interventions due to the complexity of social processes. Consequently, in management accounting research different ways of classifying and using

theoretical knowledge will have to be found. This paper proposes four “approaches for taking theoretical knowledge into practice,” as will be explained below. It is the task of the reviewers to identify and agree on the practical implications of the selected literature and to classify these implications according to one of the four ways set out below (in Section 5.2).

Although the methodology for conducting systematic literature reviews used in engineering and the medical sciences cannot be transferred to management accounting without significant adjustments, interventionist management accounting researchers can learn from that methodology. One important lesson is that cooperating with practitioners in a review panel can help to evaluate the practical applicability of theoretical ideas. Furthermore, conducting literature reviews that explicitly focus on a specific practical problem can help in shaping an intervention to address that problem. In addition, the review needs to classify how the existing knowledge can be taken into practice, although it will be different to the classification typically used in engineering and in the medical sciences.

5.2 Organizing academic management accounting knowledge in a usable form

Reviews of management accounting literature that are useful for shaping practical interventions need to identify theoretical knowledge that is focused on a specific practical problem (rather than on a gap in existing theoretical knowledge) and they need to be clear how this knowledge can be applied in practice. Applying the systematic literature review methodology, as it has developed in engineering and medical sciences, to management accounting is not feasible. In engineering and medical sciences, the focus is on the identification of evidence-based practices, i.e. practices with foreseeable effects on the solution of a practical problem. In management accounting, the academic literature provides little evidence concerning cause and effect relationships which could provide the basis for making predictions and identifying evidence-based practices (Zimmerman, 2001). Therefore, this paper proposes that rather than identifying evidence-based practices, the purpose of systematic literature reviews in management accounting should be to classify the ways in which the practical implications derived from the academic and prescriptive literatures can be applied in a complex and uncertain world. The classification that will be introduced below comprises of four approaches for taking theoretical knowledge into practice, ranging from the first approach which includes very specific recommendations (in the form of evidence-based practices) to suggestions for which there is very little or no empirical evidence that the recommendations are effective (the fourth approach). These approaches differ in the certainty that the systematic literature review can provide concerning the effectiveness of the practical recommendations resulting from such a review. For some recommendations, the literature will provide evidence that enables interventionist researchers to foresee (to some extent) the effects of the intervention. For other recommendations, there will be much less evidence and their effects will be very difficult to foresee. With theoretical knowledge that has uncertain effects, interventionist researchers should be careful and quite flexible in taking this knowledge into practice.

The first approach for taking theoretical knowledge into practice is to identify evidence-based practices. As explained above, this is equivalent to the systematic literature reviews in engineering and medical sciences. Evidence-based practices are based on knowledge concerning cause and effect relationships between management interventions and their effects. These practices, as well as the circumstances in which they can be applied, are described in detail and are expected to have foreseeable effects. However, in empirical managerial accounting research it is, and will probably remain, problematic to accumulate a set of theories that make such predictions possible (Zimmerman, 2001, p. 413, p. 419). Nevertheless, management accounting is an applied field and practitioners are interested in management accounting theories, concepts and techniques that provide help in solving

practical problems. In view of these limitations of management accounting theory, we propose three additional approaches for taking theoretical knowledge into practice.

The second approach is to identify practices for which empirical academic research offers indications that they can be effective. Typical of this approach is that it identifies empirical evidence for the effectiveness of the suggested practices in solving the defined practical problem. However, it has also remained unclear under what circumstances the suggested practices will be effective, as knowledge concerning cause and effect relationships is incomplete and/or problematic. As a consequence, the effects of using this approach are not predictable, but there is empirical evidence that the intervention has worked in some settings. Explicating how these practices worked (in settings where they were effective) can help in shaping interventions in other settings and, by so doing help to bridge the gap between theory and practice (Lukka and Granlund, 2002; Malmi and Granlund, 2009, p. 611). The use of theoretical knowledge concerning the role of participation in the project conducted at VdU (see Section 3.1) is an example of this approach. As explained earlier, the existing literature indicated that the participation of lower managers and employees would be crucial for realizing the intended change; but that it was unclear what form such participation should take. After the intervention, an analysis of its effects led to the refinement of theory about how effective participation could be organized.

The third approach is to identify explanations of accounting practices and their effects based on academic accounting research which provides some clues about how practical problems can be solved. For example, there is a vast literature on management accounting change. As such, this literature provides numerous examples of unsuccessful management accounting change (e.g. Baines and Langfield-Smith, 2003; Burns, 2000; Burns and Scapens, 2000; Burns and Vaivio, 2001; Jansen, 2011; Jermias, 2001; Kasurinen, 2002; Malmi, 2001; Shields and Young, 1989; Sulaiman and Mitchell, 2005; Speckbacher *et al.*, 2003; Vámosi, 2000; Williams and Seaman, 2002). This literature provides explanations, supported by empirical evidence, for the lack of success. In trying to solve practical problems, these explanations of failures can be used to avoid such problems occurring again.

Finally, the fourth approach is to identify practical recommendations that are (only) supported by logical reasoning; i.e. where there is no empirical evidence for the effectiveness of these recommendations. An illustration is the way in which the early articles on activity-based costing in professional journals explained the calculation and interpretation of cost information to support managerial decision making (see, e.g. Cooper and Kaplan, 1991). Typically, such articles explained that, as a first step, the nature of the decision has to be defined; e.g. order-acceptance decisions, price setting decisions or production decisions. Subsequently, they recommended that the alternatives available to the decision-maker needed to be identified and the costs of these alternatives calculated. Then, the differences in these calculated costs were recommended as the basis for decision making. This line of reasoning is typical of much of the prescriptive management accounting literature. The logic can be very convincing and appealing to practitioners, but it is often unclear whether, how and under which circumstances the recommendations will be effective in practice. Furthermore, it is often unclear what mechanisms are needed to ensure that managers actually take the recommended decisions and, if so, whether the expected effects can actually be achieved. The theoretical idea used in the interventionist project at VdU was that performance and cost management information should focus on customer relationships (see Section 3.1), an idea that originated in the literature on activity-based costing. The way in which this idea was used in the project at VdU is an example of using a practical recommendation that is (only) supported by logical reasoning to solve a specific problem.

The four approaches proposed above have in common that they all focus on theoretical knowledge that is practically relevant. In Anderson *et al.*'s (2001), classification of applied

social sciences the first, second and third approach can be seen as forms of pragmatic science: the theoretical knowledge used in these approaches is both practically relevant and (albeit in differing ways) supported by empirical evidence. The fourth approach is a form of popularist science, as the theoretical knowledge is relevant but there is no empirical evidence of its effectiveness. The classification of theoretical knowledge in one of these four categories is not static. For example, if academic research provides empirical evidence for recommendations that were in the fourth category (and a form of popularist science), these recommendations can “move” to one of the three other categories (and, as a result, can then be seen as a form of pragmatic science).

Table I summarizes these four “approaches for taking theoretical knowledge into practice.”

An important element in interventionist research, which seeks to both solve a practical problem and contribute to academic theory, is the development of the intervention. In the academic management accounting literature, reviews of the existing literature usually have two possible objectives: to identify gaps in existing knowledge and/or to structure the data analysis. In developing a solution to a practical problem, literature reviews have a different objective; i.e. to identify the theoretical knowledge which can help to shape the intervention (Lukka, 2005, p. 390). A literature review intended to shape an intervention requires an approach which differs from the approach used to identify gaps in existing knowledge or to structure the data analysis. This section has suggested how the methodology of “systematic literature reviews,” which has developed in other disciplines, can be modified to be useful for interventionist management accounting research. Such (modified) systematic literature reviews will focus on possible solutions to a specific practical problem and indicate how the reviewed research findings can be applied in practice (drawing on the four “approaches for taking theoretical knowledge into practice”). Figure 1 summarizes how systematic literature reviews can provide direction for interventions and how, by so doing, they can contribute to knowledge production and potentially bridge the gap between theory and practice.

Table I.
Four “approaches for taking theoretical knowledge into practice”

Level	Evidence	Predictability of effects
1: Evidence-based practices	Empirical evidence for cause and effect relationships, direct evidence for applications	High
2: Indications for possible solutions	Empirical evidence for interpretations, indirect evidence for applications	Moderate
3: Explanations for practices and their effects	Empirical evidence for interpretations, no evidence for applications	Low
4: Recommendations based on logical reasoning	No evidence	Unclear, uncertain

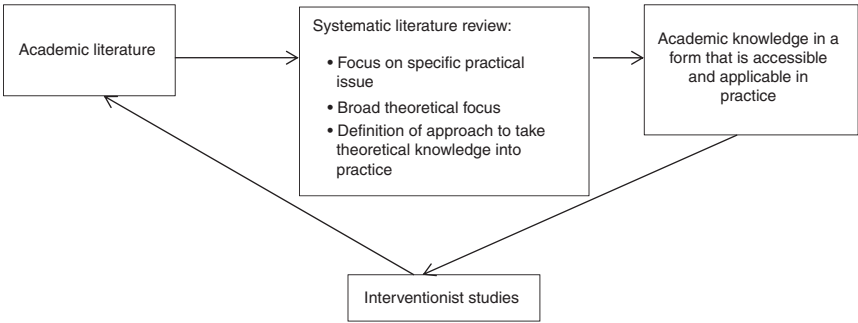


Figure 1.
The potential of literature reviews to bridge the gap between theory and practice

5.3 Knowledge creation in interventionist research and the use of theory

Interventionist research uses theoretical knowledge in two different ways. First, theoretical knowledge is used to shape the intervention (see Section 3). A literature review, which focuses on the practical problem that the intervention seeks to solve, can help to bring together the theoretical knowledge that is needed to shape this intervention. However, interventions will have unforeseen effects, as the theory used in shaping the intervention does not usually enable predictions to be made. Furthermore, the processes of defining the practical problem and of selecting theoretical knowledge to shape the intervention are heuristic and subjective. Therefore, and secondly, theoretical knowledge is needed to interpret and explain the effects of the intervention (see Section 4). The theoretical knowledge used in these different ways may be the same, overlapping or quite different. In using theoretical knowledge in these different ways interventionist research can offer opportunities for the development of pragmatic science, i.e. for bridging the gaps between theory and practice in management accounting and also between the normative and the academic literatures. To explore these opportunities for bridging these gaps, we need to think about the process of knowledge production in interventionist research.

Figure 2 summarizes how the process of knowledge creation in interventionist research can take place. In the figure, three stages are defined. First, the focus is on the practical problem of the organization: the problem needs to be defined and an intervention that aims to solve this problem needs to be shaped. The definition of the practical problem guides the literature review that aims to identify the theoretical knowledge that is necessary to shape the intervention. In the interventionist research project at VdU, the definition of this company's practical problem led to the selection of theoretical knowledge

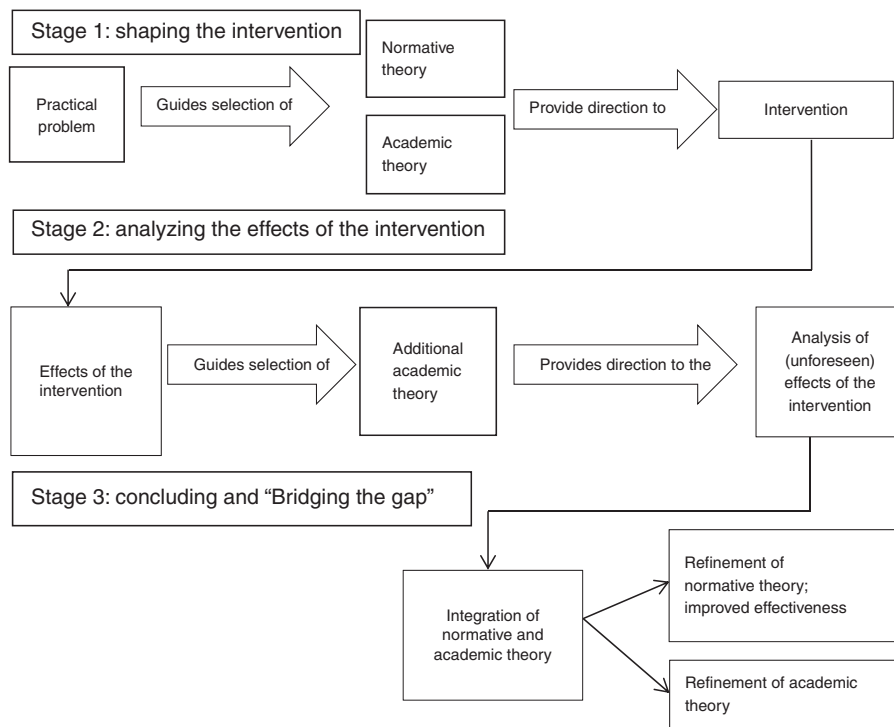


Figure 2.
Knowledge creation
in interventionist
research

concerning customer focus, non-financial performance measurement and participation. Second, the (foreseen and unforeseen) effects of the intervention need to be analyzed. To analyze these effects (and in particular the unforeseen effects) of the intervention, new theoretical knowledge that may be (in part at least) different from the theoretical knowledge used in shaping the intervention will be used. Third, on the basis of the analysis of the intervention's effects an attempt can be made to refine the theoretical knowledge used in shaping the intervention and by doing so to bridge the gap between theory and practice in management accounting.

Earlier, this paper explained the two roles of theoretical knowledge in shaping the intervention and in analyzing its effects. Extending the theoretical knowledge used to shape the intervention on the basis of the theoretical knowledge used to analyze its effects can contribute to the development of academic theory. A comparison of the two sets of theoretical knowledge could lead to the conclusion that the knowledge selected to shape the intervention is not suitable or is insufficient for solving the identified practical problem, and it could lead to an improved understanding of how this theoretical knowledge can be applied. This could result in the refinement of the theoretical knowledge that was used to shape the intervention and in an improved understanding of how the practical problem that was the basis of the study can be solved more effectively.

6. Concluding comments

Interventionist research aims both to solve a specific practical problem and to develop academic theory and, by doing so, it can potentially help to bridge the gap between theory and practice. Shaping the intervention is an important step in interventionist research, and theoretical knowledge is needed to do this. This paper has proposed a way of conducting a literature review that brings together the various forms of theoretical knowledge concerning the defined practical problem.

The purpose of conducting a literature review will influence the way in which the review is undertaken. Reviewing the literature with the aim of shaping an intervention is uncommon in management accounting and it requires an alternative approach. This paper, which is based on the author's own experiences in an interventionist research project, has explored how the literature can be used in an interventionist research project. In the author's project, theoretical knowledge from both the prescriptive and the academic literatures was used to shape the intervention. However, in the evaluation of the project it was concluded that the way in which this knowledge was used to shape the intervention was rather implicit. This paper has proposed an approach to reviewing the literature that should enable a more explicit use of theoretical knowledge in shaping interventions that aim to solve practical problems. Such literature reviews could classify solutions to practical problems according to the four approaches for taking theoretical knowledge into practice proposed in this paper. An intervention based on such a literature review will often also have unforeseen effects on the practical problem that this intervention seeks to solve. Analyzing these unforeseen effects can provide a basis for refining the theory identified in the literature review. By doing so, such reviews can help to develop pragmatic science and to bridge the gap between theory and practice in the management accounting literature.

In engineering and medical sciences papers, based on systematic literature reviews, are published in highly respected academic journals, and this helps to bridge the gap between theory and practice. In management accounting, it seems very difficult to publish literature reviews and this can hinder the development of the methodology for conducting such reviews. However, doing interventionist research can be a way for management accounting researchers to gain experience in conducting literature reviews that identify theoretical ideas of how to solve practical problems and to learn from the methodology for conducting systematic literature reviews that has developed in other disciplines. Publishing papers with

the results of interventionist studies in academic management accounting journals might be easier than publishing “stand-alone” systematic literature reviews. Conducting literature reviews for interventionist research projects, is one way of building experience in this approach to reviewing the literature in management accounting.

The difference between the prescriptive and the academic management accounting literatures is an important explanation for the so-called gap between theory and practice (Lukka and Granlund, 2002; Malmi and Granlund, 2009). The prescriptive literature is focused on providing tools and techniques for solving specific practical problems, but with little empirical evidence of the effectiveness of these tools and techniques. Therefore, much of the prescriptive literature is a form of popularist science: “low” on theoretical and methodological rigor and “high” on practical relevance. In contrast, the academic literature is focused on developing academic theory, but a criticism of this literature is that its conclusions are often not useful in solving practical problems. In view of this criticism, this literature often seems to be a form of pedantic science: “high” on theoretical and methodological rigor and “low” on practical relevance. In management accounting, there is a lack of literature based on pragmatic science: “high” on theoretical and methodological rigor and also “high” on practical relevance. Nevertheless, management accounting is an applied field that could be expected to provide tools and techniques for practitioners. In other management disciplines, pragmatic science has developed. For example, in human resources management tools to test and select personnel, based on psychological studies, have been developed. This paper has reflected on an interventionist research project to explore how the (prescriptive and academic) management accounting literature can be reviewed in a way that results in pragmatic science.

The paper has explored how interventionist management accounting research could benefit from the methodology of systematic literature reviews that has developed in other disciplines, and thereby help to take theoretical knowledge into practice. Improving the nexus between theory and practice should increase the practical relevance of management accounting research. However, conducting literature reviews focused on practical problems is not unproblematic. The lack of experience and a well-developed methodology for systematic literature reviews (specifically for management accounting research) may have a negative influence on the quality of such reviews. Nevertheless, interventionist research provides an opportunity to gain experience in conducting such reviews of the management accounting literature and to contribute to bridging the gap between theory and practice.

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Corresponding author

E. Pieter Jansen can be contacted at: e.p.jansen@rug.nl