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Control and traceability of research impact on practice:  
reframing the 'relevance gap' debate in management  
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# Control and traceability of research impact on practice: reframing the ‘relevance gap’ debate in management

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## Abstract

This paper aims at reframing the relevance gap debate in management science by repositioning scholar-practitioner collaboration and knowledge coproduction practices regarding knowledge relevance and impact. Based on a reflection about the nature of management knowledge, we argue that the so-called relevance gap should be more aptly reframed as a ‘traceability’ or a ‘controllability’ gap. Although management knowledge may be deemed relevant by a wide range of practitioners, the ways these practitioners use management knowledge are hardly visible, let alone controllable. Scholar-practitioner collaboration can be seen as a way for management scholars to regain some control over the utilization process, rather than a way to ensure knowledge relevance as such. Instrumental knowledge, which is paramount in the popular design-science perspective, certainly accounts for a share of management knowledge. Besides this, the design-science perspective offers a promising way to put scholar-practitioner collaboration into practice. It enhances the visibility of research products and the traceability of knowledge transfer. Yet instrumental knowledge should not be seen as the only type of relevant and used knowledge. Conceptual and critical knowledge are vital for management science. Instrumental relevance should be complemented by conceptual relevance, although the latter seriously tempers scholars’ quest for traceability and control over knowledge utilization. In the debate about the relevance and impact of management knowledge, the fundamental question of ‘knowledge for whom?’ should remain at the center of the debate.

**Keywords:** relevance; research impact, scholar-practitioner collaboration; instrumental knowledge; conceptual knowledge; design science.

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## INTRODUCTION

Scholar-practitioner collaboration is seen as a crucial way, if not the only one, to remedy the 'relevance gap' in management research (Avenier & Bartunek, 2010; Hodgkinson & Rousseau, 2009; Rynes & McNatt, 2001; Shani, Mohrman, Pasmore, Stymme & Adler, 2008). Management and organization scholars are urged to collaborate more frequently and more closely with practitioners inside organizations in order to ensure that the knowledge issued from scholarly research will not only be reliable, but also be found relevant by practitioners, and that it will actually be used by some of them. Beyond a mere issue of knowledge transfer (Rynes, Bartunek, & Daft, 2001) or of 'boundary-spanning' (Gulati, 2007), it has been argued that scholar-practitioner collaboration needs to be developed 'before translation' (Shapiro, Kirkman, & Courtney, 2007), that is, during the research process itself and the knowledge production phase (van Aken, 2005; Van de Ven & Johnson, 2006).

What exactly is meant by scholar-practitioner collaboration in management research, however, is not always clear. In the wake of Mode 2's (Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1994; Nowotny, Scott, & Gibbons, 2001) popularity and calls for social accountability, the idea of knowledge coproduction by management scholars and practitioners is a seducing ploy. Coproduction implies that the relevance and process of 'moving knowledge into action' (Graham, et al., 2006) are built into the very process of knowledge production. Yet the concrete process whereby scholars and practitioners might coproduce both rigorous and relevant knowledge seems to be fraught with difficulties. In this regard, the design-science perspective, which has gained in popularity in the last ten years, has attracted a lot of attention with its promise to somehow bridge the relevance gap.

Based on a reflection about the nature of management knowledge, we will argue that the so-called 'relevance gap' should be more aptly reframed as a 'visibility' or 'controllability' gap. Management knowledge produced by scholarly research may well be deemed relevant by a large range of practitioners but the ways these practitioners use management knowledge are hardly visible, let alone controllable. From this point of view, scholar-practitioner collaboration is appealing as a way for management scholars to regain some control over the utilization process, more than a way to ensure knowledge relevance as such.

The paper is divided into four sections. In the first one, we take a close look at scholar-practitioner collaboration during the knowledge production process. Access to financial resources, access to data or 'fields', and access to practitioners' knowledge are three main objectives that motivate scholars to collaborate with practitioners during the research process. Unless the process becomes one of mutual learning through practitioners' involvement in the research design and interpretation of results, collaboration during the research process does not equate to coproduction.

The second section focuses on the design-science perspective, which is increasingly seen as a promising way for management scholars and practitioners to coproduce relevant knowledge. When taken too literally, however, the design-science perspective may lead to two problematic assertions: first, it tends to imply that if we wish to solve the relevance gap, we should strive to produce instrumental knowledge; second, it suggests that virtually any type of knowledge produced by management research can be translated into design-rules that practitioners will find relevant. Part of the popularity of the design-science perspective, in our view, lies in the fact that, in this perspective, research impact and knowledge use are visible and largely controllable by management scholars.

In the third section of the paper, we draw upon the literature about the use and abuse of social science knowledge in order to qualify management scholars' quest for visibility and control of the knowledge utilization process. We also call into question the idea that valuable or relevant knowledge is mainly instrumental. Other types of knowledge produced by scholarly research – factual, conceptual or critical – are 'used', but these uses are seldom traceable, let alone controllable. Management scholars need to come to terms with the fact that they cannot trace, measure, or control the impact of the knowledge they produce and that 'relevance' should not be restricted to instrumental knowledge with a visible, short-term, and manageable impact on management practitioners.

What needs to be at the forefront of the 'relevance gap' debate, therefore, is the concept of relevance itself, as well as the fundamental interrogation about 'knowledge for whom?'

## **PRACTITIONER-SCHOLAR COLLABORATION IN THE RESEARCH PROCESS**

Collaboration with practitioners during the research process is a widely endorsed solution for reducing the relevance gap in management and organization research (Rynes & McNatt, 2001). Scholar-practitioner collaboration is presumed to increase 'the likelihood that the research that emerges will be both relevant and useful to practicing managers, and generalizable to real organization settings' (Rynes & McNatt, 2001: 5). But what exactly is the nature of practitioner-scholar collaboration during the production of management knowledge? Depending on the status given to management practitioners, collaboration refers to very different practices. As stakeholders, practitioners collaborate in the research process by giving scholars financial resources and access to data. As 'objects of study', practitioners' knowledge can be an important input in order to produce rich and valid knowledge. As practical theorists and competent practitioners, they can coproduce knowledge with scholars.

### **Collaborating to have access to data and to financial resources**

A minimal form of collaboration is necessary in order to convince practitioners to give us access to their organizations and to the empirical data upon which a good deal of our research is based. Research consent increasingly depends upon researchers' ability to demonstrate that the anticipated research results are of value to the managers and organizations involved in the research (Barnes, 1979; Bryman, 1988; Mesny, 2009). Notwithstanding the limitations to research approved by managers, this approval, especially given the new rules of research ethics, has become inescapable and is closely related to the quality of our data (Starbuck, 2006: 140).

Scholar-practitioner collaboration thus often refers to the more-or-less arduous process of aligning the objectives of the research in order to satisfy both researchers and practitioners. This often implies a need for negotiations which can be 'lengthy, even tortuous, [but] the results can be higher quality data bearing more directly on significant issues' (Starbuck, 2006: 139). As 'subjects' in general, and managers inside organizations in particular, increasingly tend to impose conditions before agreeing to be studied (Buchanan, Boddy & McCalman 1988), this minimal form of collaboration between management scholars and practitioners has become mandatory.

This collaboration takes place in a new context in which practitioners have now to be considered as major stakeholders in management and organization research (Hodgkinson, Herriot, & Anderson, 2001). The new configuration of innovation systems and the roles assigned to universities within these systems create a strong incentive for scholars to develop research partnerships with practitioners. The well-known 'triple-helix model' (Etzkowitz, 2003) or 'Mode 2' of knowledge production (Gibbons, et al., 1994; Nowotny, Scott, & Gibbons, 2001) point to universities' entrepreneurial role in the race for innovation. In management research, institutional innovations aimed at promoting closer relations between university and industry and, more particularly, new industry/ university research partnerships have multiplied in the last twenty years, although with mixed results (Hagedoorn, Link, & Vonortas, 2000; Mesny & Mailhot, 2007).

The issue of access, thus, is increasingly enmeshed with the more general issue of research funding and governance. In the field of management, as in most other scientific fields, research is increasingly funded by private rather than public sources. The organizations we study are also increasingly our research sponsors and we need to collaborate with practitioners in order to secure their financial support. This by no means implies, however, a process of knowledge coproduction between management scholars and practitioners.

### **Collaborating to extract practitioners' knowledge**

Another aspect of collaboration between management scholars and practitioners refers to the latter's epistemic status as 'knowledgeable subjects'. Management practitioners are our 'objects of study'. In

contrast to some non-human objects, management practitioners, as 'insiders' to the settings under study, have knowledge, representations or interpretations of the phenomena under study that management scholars, as 'outsiders', need to grasp (Bartunek & Louis, 1996). From an epistemic point of view, collaboration in order to grasp our subjects' knowledge is necessary for producing rich and valid knowledge, since 'the study of society can only be as stable as the self-interpretations of the individuals studied' (Flyvberg, 2001: 33).

The nature and intensity of scholar-practitioner collaboration heavily depends upon the value that scholars ascribe to practitioners' knowledge. Whether this knowledge is considered as mere 'data' to be processed by scholars or, rather, as knowledge per se, that is, knowledge which can compete, so to speak, with scholars' knowledge, makes a significant difference regarding collaboration (Bartunek & Louis, 1996). In the first case, collaboration is a sham: management scholars 'collaborate' with practitioners inasmuch as the physicist 'collaborates' with the particles he is studying. The second case, in contrast, is an important epistemological basis for a number of collaborative practices in management (Israel, Schurman, & Hugentobler, 1992; Shani, et al., 2008). These collaborative practices amount to coproduction only if practitioners are involved throughout the various stages of a research project (Bartunek & Louis 1996: 21).

### **Coproducing management knowledge**

Management practitioners can be seen as 'lay theorists' or 'practical theorists' about organizational phenomena (Bartunek & Louis, 1996: 5; Calori, 2000; Semin & Gergen, 1990; Shani, et al., 2008; Starkey & Madan, 2001, p. S12). Practitioners' theories can be made explicit and compared with scholars' theories (Furnham, 1988). This enables us, for example, to identify 'gaps' between lay and scientific theories and sometimes to try to 'correct' lay theories accordingly (Priem & Rosenstein; 2000). Calori (2000), for example, compares practitioners' knowledge and scientific theories about the dynamics of international competition. He points to a number of deviations of non-scientists' knowledge from orthodox theories. In contrast to Priem and Rosenstein (2000), however, Calori's conclusion is not that practitioners' knowledge should be necessarily corrected. Rather, Calori suggests that we 'listen to practitioners and recognize them as co-authors, tap their practical knowledge and transform it into scientific knowledge' (Calori, 2000: 1031).

If taken seriously, the idea of coproduction of knowledge between scholars and practitioners can only be based on an epistemological position that asserts the complementarity of scholars' and practitioners' knowledge (Calori, 2000; Mesny, 2009). In coproduction, scholars' efforts at getting acquainted with practitioners' knowledge (and vice versa) aim at a true sharing and confrontation of two different sets of theories, views, and interpretations, for the sake of science itself (and not just to be 'relevant'). Collaboration practices, in this context, go well beyond practitioners' participation in the framing of research agendas and research questions. Practitioners might contribute to the design of

data collection instruments and methods and, most importantly, in the interpretation of the results (Amabile, et al., 2001; Mohrman, Gibson, and Mohrman, 2001: 357).

In Bartunek and Louis' (1996) model of 'Insider/Outsider Research', scholars ('outsiders') and practitioners ('insiders') work together as co-researchers, which means that 'insider members of the research team contribute beyond serving merely as sources of data – they work jointly with the outside researcher in designing the research, collection, and analysis of data; interpreting results, and crafting the story presented about the setting' (1996: 20). Some forms of action research follow an I/O research format, which implies that researchers engage in education and training with organization practitioners 'regarding the collection, analysis, interpretation, and dissemination of research findings, and the translation of research results into action strategies' (Israel, et al., 1992: 84).

Such intense collaborative efforts between management scholars and practitioners are, however, more the exception than the rule. This collaborative mode is seen as suitable in some cases, and unsuitable or unnecessary in others (Shani, et al., 2008). Scholars involved in collaborative research (or any of its numerous variations) acknowledge the rather laborious and time-consuming characters of this type of research (Israel, et al., 1992: 95). It seems very unlikely that the bulk of management research could be conducted along this intense collaborative process (Shani, et al., 2008).

In the past ten years, however, another conception of coproduction and of scholar/practitioner collaboration has gained increased popularity in the management field. It consists in claiming that management and organization science is, or should operate as, a design science. The next section turns to this perspective of 'design science' and examines its promise to reduce, and even solve, the 'relevance gap' in our field.

## **MANAGEMENT SCIENCE AS DESIGN SCIENCE**

The design-science perspective draws upon Simon's (1969) notion of a 'science of the artificial' and his idea that science develops knowledge about what already is, whereas design uses knowledge to create what should be, things that do not yet exist (Romme, 2003: 562). An orientation towards design distinguished the professions, such as engineering, architecture, education, law and medicine, from the sciences (Romme, 2003: 558). As such, it seems to fit the fields of management and organization studies (Argyris, 1996; Avenier, 2010; Bevan, Robert, Bate, Maher, & Wells, 2007; Denyer, Tranfield & van Aken, 2008; Jelinek, Romme & Boland, 2008; Trullen & Bartunek, 2007; van Aken, 2005;), since, like engineering or architecture, the focus of management research 'is not a natural phenomenon but something human-made' (Hodgkinson & Rousseau, 2009: 536).

In the context of design sciences, management research aims at producing instrumental and prescriptive knowledge which is put into action in collaboration with practitioners in order to solve one of their problems (Denyer, et al., 2008: 395). Although the design-science perspective in

management comprises several distinct approaches, a core element in these approaches is the conviction that, in management, 'more room for the development of solution-oriented or prescriptive knowledge would increase its relevance' (Denyer, et al., 2008: 393). Design rules could be the way to bridge the relevance gap in management research (Romme, 2003: 567).

Such instrumental and prescriptive knowledge can already be found in research aimed, for example, at 'the development of a system to identify and manage the risks of new product development projects, a method for the redesign of shop floor organization in industrial SMEs, or a method for the valuation of a company's intangible assets' (van Aken, 2005: 28). Other illustrations are 'an instrument for the assessment of personality in the workplace' or 'a psychometric study of end users' representations of risks pertaining to information security in the workplace' (Hodgkinson & Rousseau, 2009: 538).

### **Instrumental and prescriptive knowledge: design propositions or rules**

Drawing on the idea that management and organization science has reached a certain level of maturity and should now venture 'out from its adolescence' (Romme & Endenburg, 2006: 287), the design-science perspective promotes a pragmatic view of knowledge which consists in designing systems 'that do not yet exist – that is, change existing organizational systems and situations into desired ones' (Romme, 2003: 559). Since managing means 'creating intended consequences' (Argyris, 1996: 402), management research should produce designs, understood as 'specifications of actions to be taken to achieve the intended consequences' (Argyris, 1996: 396).

Proponents of the design-science approach to management have used a variety of terms for referring to the type of instrumental and prescriptive knowledge it produces: designs, design propositions, design rules, design solutions, technological rules, and so on. Design rules refer to 'any coherent set of detailed guidelines for designing and developing organizations' (Romme & Damen, 2007: 110). Likewise, 'technological rules' refer to 'knowledge that can be used by professionals in the field [...] to design solutions to their field problems' (van Aken, 2005: 22).

A key point about these technological rules or design propositions is that they never are the complete solution for a particular problem; rather, they are 'an input to the designing of the specific solution' (Denyer, et al., 2008: 396). The specific solution itself demands 'professional knowledge and expertise [...] along with the evidence from fieldtesting and intimate knowledge of the local situation and business domain in question' (Denyer, et al., 2008).

While agreeing on the end result – design propositions – proponents of the design-science approach significantly differ as to the ways to produce these design propositions. More specifically, what varies from one approach to the other is the degree to which design propositions, and management research in general, are coproduced by scholars and practitioners.



### **Re-legitimizing instrumental and prescriptive knowledge**

A first approach, within the design-science paradigm, has consisted in pointing out that a significant part of existing research results already qualify as design rules and that the design perspective, especially in the sub-field of organizational development, is not new (Mohrman, 2007: 17). The concept of 'design rules' is a new 'label' for referring to a type of management knowledge that has always existed and for conferring it a new legitimacy since prescriptive knowledge was generally regarded as 'un-academic' (van Aken, 2005: 21). For example, Hodgkinson and Rousseau stress that management research has produced a 'growing spate of applications, from the design of high reliability organizations and organizational forms more generally, to the design of tools and processes for intervening in the strategic management process' (2009: 537). To some extent, this means that bridging the rigor-relevance gap 'is already happening' in management research (Hodgkinson & Rousseau, 2009).

In a related vein, Romme (2003) refers to 'three generations of design methodologies': the first one culminated in the early 1900s in the work of Taylor and his 'scientific management' perspective and the second one 'focused on regulatory approaches such as sociotechnical systems, functionalist systems theory, and human relations'. The third generation is the one that started about 15 years ago and has gained in popularity in the management and organization field. Collaboration with practitioners, let alone knowledge coproduction as defined above, is not a prerequisite in this first conception of design-oriented research. In addition, Mohrman (2007: 45) mentions Schön's work on reflective practice, Argyris's work on actionable knowledge, Galbraith's model about organizational design, as well as the literature on organizational capacities. All these research-based notions and frameworks, though primarily concerned with explanation and description, also intend to build design capabilities (Mohrman, 2007: 46).

### **Design propositions extracted from research synthesis**

A second conception of design science stresses that research results produced by descriptive research can often be translated into design propositions and rules (van Aken, 2005: 29). Rather than embarking on new empirical studies with the explicit aim of producing design rules about a particular field problem, a lot of progress in management and organization science can be made by revisiting existing research results and evidence and extracting the design propositions that are implicitly contained in them (Hodgkinson & Healey, 2008: 451). This perspective is akin to the evidence-based approach in management which seeks to 'distil actionable principles from systematic reviews of prior studies' (Hodgkinson & Healey, 2008: 437).

Denyer, Tranfield & van Aken, for example, argue that 'the development of design propositions can result from synthesizing previously published research' (2008: 393) and illustrate this position with research about high-reliability organizations. Design propositions follow what they call the 'CIMO-logic': a problematic context (C), calls for a design proposition that suggests an intervention type (I) based on generative

mechanisms (M), in order to reach an intended outcome (O) (Denyer, et al., 2008: 393).

They give the following example of a design proposition following the CIMO logic : 'If you have a project assignment for a geographically distributed team (class of contexts), use a face-to-face kick-off meeting (intervention type) to create an effective team (intended outcome) through the creation of collective task insight and commitment (generative mechanisms)' (Denyer, et al., 2008: 396). A design proposition they derive from their synthesis of the literature about high-reliability organizations runs as follows: 'In contexts characterized by social and political pressure, interactive complexity and high hazard, in order to avoid high-impact failure and reduce error rates, continuously communicate rich, real-time information about the health of the system and any anomalies or incidents (Denyer, et al., 2008: 406).

In this perspective, the design mode serves to 'translate empirical findings into design propositions' (Romme, 2003: 569) and thus occurs after some empirical findings have been produced by researchers through a traditional – not necessarily collaborative - research process. Hodgkinson and Healey (2008) suggest that this process of translation can occur with research in other fields in order to produce design rules about management or organization problems. This strategy can be effective when only limited evidence or research results about a particular problem are available in the management field. For example, arguing that research results and evidence about scenario planning are lacking for design purposes, Hodgkinson and Healey (2008) draw upon three theories from social psychology to extract design propositions that could inform the design scenario planning about team composition and the facilitation process.

An example of such design propositions extracted from basic research is as follows: 'To increase the likelihood of attaining requisite forms of group information processing with informationally diverse scenario teams, wherever possible select participants with greater intrapersonal functional diversity' (Hodgkinson & Healey, 2008: 442).

Of course, in this approach to design science, extracting design propositions from existing research is a first step that needs to be followed by one consisting in subjecting them to field-testing, 'in order to ascertain what works and what does not work' (Hodgkinson & Healey, 2008: 451).

### **Coproduction of design rules by scholars and practitioners**

Finally, a third approach in design science consists in the coproduction of design rules by scholars and practitioners. This process of coproduction implies intense forms of collaboration between researchers and practitioners. Principles of design science involve a particular way of conducting research and producing knowledge that goes beyond 'old' research paradigms – such as action research. Collaboration with practitioners is based on the idea that the use of design rules is a natural activity which is routinely performed by management practitioners, albeit implicitly (Plsek, Bibby, & Whitby, 2007: 154).

This perspective in design science has been developed chiefly in the

sub-field of organization development (OD) (Mohrman, 2007) with the aim of facilitating 'empowerment and participation in decision making at all levels' (Romme & Damen, 2007: 115). With respect to this 'core OD value' (van Aken, 2007: 81), the design-science approach enables us to give 'the direct stakeholders an active role in the change process' (van Aken, 2007: 81).

In OD, Endenburg's 'circular design approach' is one of the first concrete applications of the design perspective. In order to explore new ways of facilitating employee participation, Endenburg 'started to develop the circular OD approach in which feedback rather than power was to become the basic organizing principle' (Romme & Damen, 2007: 111). This approach to organization design is 'very similar to the research and development cycle connecting the natural sciences, engineering, and technology' (Romme & Endenburg, 2006: 295) and 'draws on a research cycle involving organization science, construction principles, design rules, organization design, and implementation and experimentation' (Romme & Damen, 2007: 287).

Construction principles and design rules are seen as 'boundary objects' which 'can serve as a conceptual framework for productive interaction and collaboration between practitioners, consultants, and academics' (Romme & Endenburg, 2006: 295). Examples of construction principles (the antecedents of design rules) for any organization that wishes to 'build capacity for the circular flow of power and information' include such principles as 'make mistakes', 'continually explore and set boundaries but recognize that deviating too much from your course is risky', or 'set and agree on acceptable limits in the case of collaboration' (Romme & Damen, 2007: 111-112; Romme & Endenburg, 2006). Corresponding design rules anchored in such principles are, for example, 'each circle makes decisions on policy issues by informed consent' and 'every member of the organization belongs to at least one circle' (Romme & Endenburg, 2006). Construction principles are used as 'tools to create a specific set of design rules, acknowledging that there is an infinite number of possibilities and combinations' (Romme & Damen, 2007: 112).

Romme & Damen (2007: 110) provide another illustration of the relationship between construction principles and design rules: an example of the former would be 'to increase innovative capabilities, the firm needs to develop absorptive capacity—the ability to recognize the value of new, external information, assimilate it, and apply it to commercial ends', while the corresponding design rules grounded in such principles would provide 'guidelines regarding when and how to invest in R&D, engage in cooperative R&D ventures, and so forth' (Romme & Damen, 2007: 110).

Since its inception in the 70s, circular design 'has been applied in about 65 OD projects in the Netherlands, the United States, Canada, and Brazil' (Romme & Damen, 2007: 115). Romme and Endenburg report several attempts from a diversity of companies at using the circular design approach. In one of these cases, the attempt failed 'as a result of the "hit and run" strategy adopted by the CEO as well as his strong need to be in control' (Romme & Endenburg, 2006: 292). In another case, the

approach resulted in substantial improvements for the company and showed that 'participative decision-making processes generated and bounded by the circular structure can be effective in a crisis situation' (Romme & Edenburg, 2006: 292).

A different yet complementary view about scholar-practitioner collaboration in design science is the one developed by Plsek, et al. (2007). In their perspective a crucial stage of design-oriented research consists in trying to extract explicit design rules that are enmeshed in the experience of practitioners. Any form of organizational action and any effort at organizational change have 'embedded design rules' (Plsek, et al., 2007: 154). Management scholars, in collaboration with practitioners, can convert practitioners' tacit knowledge into explicit design rules that are statements in the form 'If you want to achieve outcome Y in situation S, something like X might help' (Plsek, et al., 2007: 153).

Bate and Robert (2007) have pushed this approach further by focusing on a different type of 'practitioners'. Denouncing the strong management orientation of OD, they plead for a more 'user-centric' OD, 'one that seeks to mobilize and privilege change on behalf of the consumers or users of an organization's product or service, involving them at every stage of the design process, from problem diagnosis to solution generation and implementation' (Bate & Robert, 2007: 41). They have applied the approach of experience-based design in a cancer clinic with the aim of 'improving the care and treatment experience of head and neck cancer patients and their carers' (Bate & Robert, 2007: 42).

In this process of codesign, the patients worked with staff, senior managers and physicians. They used one of the methods described by Plsek, et al., (2007) for extracting design rules, namely stories and narratives. For example, one of the design rules that emerged from patients and staff' stories about the fact that patients do not always know what the next stage in their treatment is was 'Never do anything that might take away from the resilience of the patient', a rule that is markedly different from the more immediate response of 'Let's tell them everything' (Bate & Robert, 2007: 58).

This last example is particularly interesting since it demonstrates both the potential and the limits of design rules for dealing with human processes. In the authors' own words: 'The two possible alternative rules in this case of "tell them everything" (based on the logic that we should never deceive patients, surprise them, or keep them in the dark about their own illness) and "preserve maximum patient resilience" are tramlines, boundaries, or polarities that need to be managed and within which difficult judgments and decisions will always need to be made' (Bate & Robert, 2007: 58). In their view, it shows the fundamental difference between designing physical objects and designing human processes (2007: 58).

van Burg, Romme, Reymen, and Gilsing (2008) have developed a 'science-based design approach' which combines the second approach explored above – extracting design propositions from research synthesis – with the idea of extracting design rules from practitioners' knowledge-in-action. They aim more specifically to connect pragmatic knowledge about how to create university spin-offs to scholarly work

explaining why certain practices in this field work and others do not (van Burg, et al., 2008: 116). They produced a synthesis between practice-based principles and research-based principles about the performance of a particular spin-off.

First, following Plsek, et al.'s path, practice-based principles were developed by 'converting the largely tacit knowledge of key agents in university spin-off creation into explicit principles' (van Burg, et al., 2008: 118). One of these practice-based principles was, for example: 'Make potential entrepreneurs (e.g., students, Ph.D. students, staff members) aware of opportunities to start a venture based on a research finding (van Burg, et al., 2008: 121).

Second, research-based principles were derived from the scholarly literature about university spin-offs. One example of a research-based principle was: 'Screen technologies and ideas for new ventures, and subsequently provide start-ups with advice and coaching from skilled people' (van Burg, et al., 2008: 121).

Finally, the authors set out to synthesize the two sets of principles in a new set of 'design principles', defined as 'principles that are tested in practice as well as grounded in the existing body of research' (van Burg, et al., 2008: 121). One of these design principles runs as follows: 'Create university-wide awareness of entrepreneurship opportunities, stimulate the development of entrepreneurial ideas, and subsequently screen entrepreneurs and ideas by programs targeted at students and academic staff' (van Burg, et al., 2008: 123).

### **Can design science bridge the relevance gap?**

Although design science and the various design-oriented approaches outlined above have opened a promising path towards bridging the relevance gap, a few mitigating points should be raised. First, contrary to the assumption that technology-products can easily be deemed relevant and have a direct impact on practice (Hodgkinson & Rousseau, 2009: 541), a glance at other fields that are considered as exemplars of design science shows that issues of 'relevance' are very much at stake there too. In medicine, for example, 'the transfer of research findings into practice is often a slow and haphazard process. For example, 'patients are denied treatment of proven benefit because the time it takes for research to become incorporated into practice is unacceptably long' (Graham, et al., 2006: 13).

With every illustration that the impact of hard evidence and design rules on practice is direct and pervasive – for example, evidence about the effects of feedback on performance has been translated into 'contemporary guidance regarding how to give employees performance feedback' (Hodgkinson & Rousseau, 2009: 540) – there are dozens that probably show the opposite.

Another issue with the design-science perspective has to do with the stage of extracting the implicit design rules embedded in practice. Acknowledging that practitioners routinely develop local theories (Bartunek & Louis, 1996: 5) and design rules which are embedded in their actions is essential. Attempting to capture this practical knowledge and to extract the design rules through scholar-practitioner collaboration is,

however, an arduous and uncertain process.

Research findings about 'good practice' such as Schön's (1983) notion of 'reflective practice' indicate neither that good practice implies making the tacit explicit nor that all tacit knowledge can be made explicit. On the contrary, Schön quite convincingly showed that 'when the professional practitioner tries, on rare occasions, to say what he knows – when he tries to put his knowing into the form of knowledge – his formulations of principles, theories, maxims, and rules of thumb are often incongruent with the understanding and know-how implicit in his pattern of practice' (Flyvbjerg, 2001: 20). The process of codifying tacit knowledge needs to be understood as a knowledge creation process rather than a mere process of 'conversion' of tacit knowledge into explicit knowledge claims (Cohendet & Meyer-Krahmer, 2001: 1564). Having tested four methods 'for extracting tacit knowledge design rules' from experienced practitioners, Plsek, et al. conclude that there are many complexities associated with doing this and that it entails an intense process of interactive collaboration on the part of scholars and practitioners (Plsek, et al., 2007: 168); what Bartunek and Louis had already shown regarding outsider/insider research (1996: 18). We thus end up with the same kind of limit that we outlined earlier, namely that given the high 'costs' of such practitioner/scholar collaboration, it is rather unlikely that it should proliferate in the near future, which casts doubt on the ability of the design-science approach to 'bridge' the relevance gap.

The most important issue raised by the popularity of the design-science approach in management is the risk of taking it too literally rather than as a metaphor or analogy (van Aken, 2004: 239). This very literal conception of management 'engineers' is patent, for example, in the following extract from Hodgkinson and Healey's work presented above. They reach the following conclusion about the usefulness of their design propositions on team composition and the facilitation process: 'Facilitators will be better equipped to engineer the requisite forms of group cognitive processes that yield changes in decision makers' mental models and enhance the flexibility of their thinking about the future, by introducing various techniques as and when appropriate' (Hodgkinson & Healey, 2008: 449).

As many of its proponents have stressed, the comparison between designing objects and designing human processes can only go so far (van Aken, 2007: 72). In management, which is more 'context-bound' than disciplines such as medicine or engineering (van Aken, 2004: 239), 'using' or 'applying' a design rule always involves a 'comprehensive learning process rather than the straightforward execution of a single rule' (Denyer, et al., 2008: 396).

Proponents of the design-science approach are generally careful to avoid a mechanistic view and thus end up producing very general design rules such as 'look for external initiatives that might provide a stimulus for change' and 'spot and deal with resistance' (Plsek, et al., 2007: 163) that have little efficacy if practitioners do not have an intimate knowledge of the context, since 'each situation is unique' (Romme, 2003: 559), and a certain level of expertise, since design

rules about human processes can never be simply 'executed' (Denyer, et al., 2008: 396).

Finally, the limit of the design-science metaphor also lies in the types of knowledge that management scholars produce. Although focusing on instrumental and prescriptive knowledge is certainly useful, we should not lose sight of the fact that other types of knowledge do have a role to play in scholarship and in the management field especially.

## **CONCEPTUAL KNOWLEDGE AND 'ENLIGHTENMENT'**

Drawing upon Nord & Connell's (2011) recent attempt to reexamine what counts as knowledge in organization studies, but also upon a renewed conception of social science such as Flyvbjerg's (2001) notion of phronesis, we focus in this section on types of management knowledge that are more conceptual than instrumental.

Management and organization scholars produce descriptive, conceptual, or critical knowledge – 'social facts', 'descriptions', 'concepts', 'representations', 'understandings' – that does not seem to fit easily into the category of design propositions or rules (Beyer, 1997: 17; Hodgkinson & Rousseau, 2009: 539). Rather than assuming that such knowledge cannot be 'relevant' unless translated or synthesized into design rules, this section explores the uses of conceptual and critical knowledge and the idea that such knowledge can indeed be 'relevant', albeit in a very different manner than instrumental knowledge (Nicolai & Seidl, 2010).

### **Utilization of conceptual knowledge: invisibility and untraceability**

The diffusion and utilization of knowledge produced by scholarly research follow complex patterns. When this is not monitored by an intense and purposeful process of collaboration with particular practitioners, it is largely a diffuse, continuous and large-scale process that permeates society through and through and is fundamentally uncontrollable (Beck, Giddens, & Lash, 1994). The use of conceptual knowledge tends to follow an 'enlightenment model' which is markedly different from the 'engineering model' of knowledge use (Weiss, 1986).

One aspect of this process lies in the fact that management practitioners, and 'lay people' more generally, can make sense of a large part of social science knowledge, in particular sociological evidence and social 'facts', directly, without significant training and without the aid of 'translators' or 'boundary-spanners'. Lay people and practitioners 'talk back' to scholars more than ever, because they are more educated, have easier access to our research than before, and so on (Giddens, 1993; Mesny, 2009).

The diffusion of social science knowledge outside academic circles and its uses in society are essentially uncontrollable. It is extremely difficult to trace the process whereby certain facts, concepts or ideas produced by research are appropriated by a number of people who are 'enlightened' by that knowledge. Direct traces of knowledge impact are

scarce. The lack of direct traces, however, does not imply the lack of utilization: 'As long as we look for direct traces of our research in managerial actions, we will not only be doomed to disappointment – we will have failed to understand the nature of research utilization (Beyer, 1997: 18).

The utilization of social-science knowledge, including management knowledge, also refers to institutional reflexivity (Giddens, 1993), and to the incorporation of research knowledge into common sense or social representations (Giddens, 1990; Mesny, 2009). Once incorporated into common sense, knowledge emerging from scholarly research has generally lost the very attribute that 'marked' it as scientific knowledge; Merton termed this 'obliteration by incorporation' (Beyer, 1997: 22). About sociology, for example, Abrams notes: "insights, concepts, language which began life as sociology filter into the world of taken-for-granted common-sense and common discourse and to the extent that they are indeed used in that world are no longer perceived as sociology [...] [W]hat is seen as sociology is likely to be that which has not yet been found useful" (Abrams, 1985: 202).

It is thus extremely difficult to trace the knowledge produced by social or management research as it is disseminated, transformed, appropriated, and incorporated into people's knowledge, be they policy-makers, managers or 'lay people'. Researchers are not in control of such a process, which is a very unsettling characteristic, especially at times when scholars have to demonstrate social accountability.

A number of efforts, however, have been deployed in order to better understand this process and to improve the traceability of social science knowledge as it is disseminated and used within society. A few scholars have tried to address this empirical challenge. Wrong, for example, set out to 'identify broadly concepts and notions originating in academic sociology that have entered the awareness, or at least the vocabulary, of Americans' (Wrong, 1990: 19). Merton and Wolfe examined 'the degree to which sociological concepts have been incorporated into the vernacular of society' (Merton & Wolfe, 1995: 15). Because the vocabulary of psychoanalysis seems easier to trace, a few social scientists have tried to assess the incorporation of social psychoanalytic knowledge into common sense (Berger, 1965; Moscovici, 1961; Farr, 1993).

### **Mass dissemination, uncontrollability and abuse**

Academic channels play only a marginal role in the dissemination process of social-science knowledge. Even policy-makers do not have access to social-science knowledge primarily through research reports or academic publications (Heller, 1986). Rather, a large part of the knowledge produced by social scientists and by management scholars is disseminated through the mass media (Alvarez, 1998; Mazza & Alvarez, 2000). The uncontrollable, paradoxical and sometimes counter-productive aspects of mass dissemination of social-science knowledge are well documented (Best, 2004; Brady, 2004; Stacey, 2004; Weiss & Singer, 1988). The vast majority of social research goes unreported, and the research that does is overwhelmingly quantitative in nature



(Stacey, 2004: 132; Weiss & Singer, 1988). The process of mass dissemination tends to reinforce a positivist epistemology and to 'strip' reported knowledge of complexity, nuance, ambiguity or uncertainty (Stacey, 2004). When reported in the media, social scientists are portrayed as advocates for a particular set of prescriptions, becoming 'just another interest group in competition with the legions of interest groups already out there' (Tittle, 2004: 3).

When particular groups or communities explicitly use social-science knowledge to foster a particular social cause or to achieve certain objectives, this 'use' can indeed be traced but the process is still barely controllable. The lack of control that social scientists experiment regarding the uses of the knowledge they produce is a pervasive theme among scholars who are preoccupied with relevance. Cases abound that illustrate this loss of control. Stacey (2004) bitterly notes that her work about lesbian parenthood has contributed, much to her dismay, to pro-marriage ideology. Tittle (2004) offers a somber account of the way his and others' work and testimony about death penalty was ignored or misinterpreted by legislators. Tumin (1970) was even more disenchanted when he had to acknowledge the fact that his research, prompted by fundamentally anti-racist beliefs, was being seriously attacked by Black people as a racist document. These are only a few examples of a general trend that sometimes leads social scientists to be more preoccupied by the 'abuse' rather than the 'underuse' or the 'non-use' of social science knowledge (Heller, 1986).

Mass diffusion and utilization are processes of knowledge transformation rather than knowledge transfer. A large number of scholars are very uncomfortable with what they see as a form of 'abuse' of the knowledge they produced. For many, the use of scholarly produced knowledge outside academia equals popularization, and popularization equals deformation and pollution and does not belong to the realm of science (Kieser & Leiner, 2009; Shinn & Whitley, 1985).

### **Values, interests and power**

Management scholars' reluctance to acknowledge that the uses of the knowledge they produce as scholars are largely uncontrollable has also to do with their more general discomfort with values, interests and power (Connell & Nord, 1996; Flyvbjerg, 2001). In management, as in any other field, we have to regularly address the issue of 'knowledge for whom?' Who are the 'users' who should benefit from the knowledge produced by management research?

What is so troubling with the idea that scholars have little control over knowledge utilization is the fact that effective use of knowledge always aims at fostering the interest of particular people or groups of people. As the illustrations above have shown, the idea of science as 'disinterested scholarly inquiry' is difficult to handle in the face of the multiple and uncontrollable cases of scientific knowledge being used to foster particular interests. Besides this, when the use of research results 'is seen as beneficial to some and potentially harmful to others, their use is bound to provoke some degree of resistance' (Beyer, 1997: 18).

In virtually all scientific fields, knowledge is commonly used as 'ammunition', that is, 'to attain specific power or profit goals' (Graham, et al., 2006: 21). The symbolic use of research findings, that is, the use of research findings only to legitimate and sustain predetermined positions, is a common phenomenon in the management field (Beyer, 1997: 17). In management, a crucial issue is whether knowledge is directed only towards 'people in power', such as policy-makers and top managers, or whether targeted users should include employees and other people who 'endure' management more than they 'practice' it. These 'broader issues of human relevance' (Huff and Huff, 2001: S49) are rarely addressed in those terms by management scholars. Notable exceptions are Grey's (2001) and Huff and Huff's (2001) reply to Starkey and Madan's (2001) conception of the relevance gap. In the field of organizational development, Bate and Robert, as already mentioned above, have questioned the 'management- or leader-centric' outlook of OD, which is hardly surprising 'given that it is senior management that normally pays any consulting fees and is also the group that is seen to hold the key to significant and successful change within the organization' (Bate & Robert, 2007: 41).

Grey convincingly formulates the questions that should preoccupy organization and management scholars: 'By what fiat are the users of management research held to be the corporations and the managers? What about the managed, who also pay taxes to support publicly-funded institutions? Do they not count as stakeholders? Why should the institutions they pay for speak only to sectoral interests? (...) Even if it is the case that democratically elected governments currently value research that contributes to economic competitiveness, who is to say that research that undermines such value will not subsequently be seen as desirable?' (Grey, 2001: S30).

With technology-like knowledge, targeted users are clear, and the value of knowledge lies in its capacity to be integrated as smoothly and rapidly as possible into practice. With conceptual or critical knowledge, potential users are unclear and relevance may lie in the rupture, discomfort, resistance, or dismissal that such knowledge will first generate among practitioners.

As Grey illustrates with the theme of downsizing, 'it is only by allowing a critical distance from relevance to industry that academics can legitimately engage in the identification of such practices as destructive at the time when they are in vogue in, and therefore relevant, to industry!' (Grey, 2001: S30). Knowledge production, thus, is jeopardized 'if the only projects pursued are those that some sponsoring agency or organization currently finds important' (Huff & Huff, 2001: S51).

Choosing to serve particular interests or, on the contrary, maintain a critical distance – but with no warranty that knowledge will not be used all the same to foster particular interests – is a predicament that management scholars have in common with many others. In place of Mode 1.5 production of knowledge that they had initially advocated (Huff, 2000), Huff and Huff later suggested that what is required is a Mode 3 knowledge production whose trigger is the 'appreciation and critique of the human condition as it has been, is, and might become' (Huff & Huff,

2001: S53), and whose aim is 'to assure survival and promote the common good, at various levels of social aggregation' (Huff & Huff, 2001: S53). In other words the debate about the relevance gap in management is not about a 'lack of relevance'. It is, rather, about a truncated and impoverished conception of relevance that management scholars have tended to adopt.

## **REFRAMING THE RELEVANCE GAP DEBATE IN MANAGEMENT**

Management research products or results are of at least two general types: technological, design-like, instrumental, procedural knowledge, on one hand, and factual, conceptual, critical, declarative knowledge on the other (Hodgkinson & Rousseau, 2009: 539). Factual, conceptual or critical knowledge can be both relevant and actually 'used'. This type of relevance, however, is very difficult to trace, let alone control.

Artefacts such as 'psychometric tests, scenario planning tools, and management sciences algorithms' (Hodgkinson & Rousseau, 2009: 539) have a tangible and material character which makes knowledge transfer more traceable than in the case of more elusive types of knowledge. Instrumental knowledge, such as design propositions in the design-science approach, is visible and traceable and its 'transfer' or 'transformation' in practice is, to some extent, controllable when management scholars embark in in-depth collaboration with practitioners. With conceptual and critical knowledge produced by management research, its incorporation into managerial practice is largely untraceable and uncontrollable.

Management scholars have been tempted to argue that only those parts of the process that are visible and controllable are the process. Hence the 'relevance gap' debate, since those visible and controllable manifestations do not seem to measure up with the profusion of knowledge claims and research data and results produced by management scholars. To a significant extent, the relevance gap debate may be more aptly viewed as a 'visibility gap': 'I suspect that the effect of our research on managers is indirect, subtle and often unconscious. With regard to the latter characteristics, this implies that managers, like the rest of us, often cannot trace the origins of the questions they ask. Attempts to obtain clear-cut proof of the direct utility of our research, based on the self reports of likely users, probably are doomed to fail or, at a minimum, to yield to suspect findings' (Brief, 2000: 340).

This 'visibility gap' is common to a large number of scientific fields, especially the social sciences. As suggested above about social scientists' empirical attempts to trace the incorporation of social-science knowledge into society, the empirical investigation of the ways conceptual knowledge becomes embedded in practice, although tricky, is not impossible. In our view, this empirical effort is one way to respond to the relevance gap debate in management. Management scholars should devote more efforts to investigate the complex circulation of management ideas, concepts, 'recipes' and facts throughout society and trace

the appropriation, by management practitioners, of conceptual knowledge they have produced.

Doing this, however, involves acknowledging that management scholars appropriate practitioners' knowledge as much as, and maybe more than, practitioners appropriate management scholars' knowledge. As Bartunek and Louis have stressed, 'managers' local theories may have more impact on academics' theories than vice versa' (Bartunek & Louis, 1996: 6). Management scholars pick up most of their ideas from practice. In a way, the coproduction of management knowledge is everywhere, but this blending process between practitioners and scholars' knowledge is often ignored. As argued in the first section of the paper, management scholars are often reluctant to view practitioners as legitimate knowledge producers, and not only as knowledge users or consumers (Bartunek, 2007: 1328; Callon, 1999; David & Hatchuel, 2008; Hatchuel, 2001; Mazza & Alvarez, 2000). Celebrating that we, as management scholars, have much to learn from insiders and management practitioners also implies an anti-dogmatic epistemological position that acknowledges the fundamental 'uncertainty' that characterizes our quest for knowledge (Nord & Connell, 2011: xxi).

As Nord and Connell (2011) have recently reaffirmed, the principle of uncertainty should extend to the idea of 'universal, correct human values'. In other words, debate and explicit reference to values, interest and power should infuse the relevance gap debate. Above, we suggested that the design-science perspective has tended to expunge this debate from fundamental questioning about 'knowledge for what?' and 'knowledge for whom?' In our view, these fundamental questions should remain at the center of discussion about the relevance gap and about scholar-practitioner collaboration, if only because management scholars, as researchers more generally, 'do what serves them personally in preference to what promotes the creation of reliable knowledge' (Starbuck, 2006: 74).

We cannot merely strive for relevance and design rules and ignore the fact that relevant knowledge and rules are always relevant and useful for something and for someone. Though questions about values are explicit for a few proponents of the design-science approach (for example Mohrman, 2007: 17) there is a risk that a narrow view of design science will tend to evacuate the debate about values or, worse, pretend that the values that should guide management research are clear and not a matter of debate (Nord & Connell, 2011). Romme, for example, quickly settles the issue about values by saying that design research can 'guide human beings in the process of shaping and developing their organizations toward more humane, participative, and productive futures' (Romme, 2003: 570).

In his well-known historical analysis of the role of industrial social scientists in the first half of the 20th century, Baritz showed that 'industrial social science had become one of the most pregnant of the many devices available to America's managers in their struggle with costs and labor' (Baritz, 1960: 191-192). By concentrating almost exclusively on 'narrow problems of productivity and industrial loyalty' (Baritz, 1960: 195), these management scholars clearly were 'servants of power'.

These scholars that are praised today exemplifying the 'first generation' of the design-science perspective (Romme, 2003: 564) served the interests of the higher-level members of organizations in a very instrumental fashion and assuming that serving organizational elites was necessarily serving 'the public good'. Mayo, for example, 'asserted that social science research, by providing management with the means of discovering the causes of labor disorder and unrest, would make these problems relatively easily controlled' (Brief, 2000: 344).

We should wonder if management scholars today are any different from the scholars Baritz studied. There is little evidence in the management community today that management scholars are particularly eager to 'put the public interest in setting their research agendas' (Brief, 2000: 346). If we agree that, as management scholars, we are 'obligated ethically to society at large (e.g. to advance science, to better the human condition, to increase understanding)' (Brief, 2000: 346) then surely our role extends beyond providing management executives 'design rules' to solve 'their' problems. Discussion of values, interests and the field's 'managerial bias' should not be left to the sole care of 'critical theorists' (Brief, 2000: 347).

In the relevance gap debate, we cannot escape long-standing questions of whose interests we are trying to serve. Interrogations about impact and relevance 'necessarily mean that we must consider what kinds of impact may occur and who is likely to benefit' (Newton, 2010: 1385). Beyond trying to offer solutions to practitioners' immediate concerns, 'relevance' also consists in 'lighting up new ways of seeing' (Zundel & Kokkalis, 2010: 1211).

Mirroring Flyvbjerg's conception of phronetic social science, we suggest that a key role of management and organization science 'is to clarify and deliberate about the [managerial and organizational] problems and risks we face and to outline how things may be done differently, in full knowledge that we cannot find ultimate answers to these questions or even a single version of what the questions are' (Flyvbjerg, 2001: 140). Such a role might not fit easily in the field's current quest for immediate and visible 'relevance'. Nor does it suit the current call for more scholar-practitioner collaboration. Engaged scholarship (Van de Ven, 2007) does not imply immediate relevance and relevance does not necessarily imply academic-practitioner collaboration during the research process itself (Bartunek, 2007).

## CONCLUSION

As Nicolai and Seidl recently noted, the notion of 'relevance' 'is hardly ever defined and may have different, even contradictory, meanings in different contexts' (Nicolai & Seidl, 2010: 1257). Based on a textual analysis of the relevance literature in management and organization studies, they distinguish between different research constructs which refer to three forms of relevance, namely instrumental, conceptual and legitimative. Instrumental relevance is based on schemes, technological rules, recipes and forecasts. Conceptual relevance is based on linguistic constructs (new concepts and metaphors), uncovering contin-

gencies and uncovering causal relationships (Nicolai & Seidl, 2010: 1266).

Drawing on this distinction between instrumental and conceptual relevance, four main points sum up the argument made in this paper:

- Conceptual relevance is a crucial form of relevance in management and should be explored and appreciated along with instrumental relevance;
- By focusing chiefly on instrumental relevance and maybe relying too much on the design-science approach, we run the risk of evacuating crucial interrogations about relevance, namely 'relevant for what?' and 'relevant from whom?';
- Instrumental relevance is appealing in part because this type of impact is traceable and, to some extent, controllable. In contrast, conceptual relevance is often untraceable and largely uncontrollable;
- The coproduction of knowledge by management scholars and practitioners, for example through design-oriented research, is certainly an important way towards 'visible and traceable relevance'. Scholar-practitioner collaboration, however, should not exclusively focus on the production of design rules; it also consists in sharing conceptual knowledge, concepts, metaphors, understandings, and critical and radical ideas.

Research-based management knowledge may have an impact, but if we accept the argument made in this paper, this impact is largely impossible to 'prove' or 'trace' until long after it happens (if at all). Impact includes the appropriation of knowledge by practitioners, and appropriation does not necessarily lead to any short-term visible action (Avenier, 2010: 1245). When actions do result from knowledge appropriation, the awareness of the triggering role of particular knowledge claims or frameworks is often lost.

There was perhaps a time when academic researchers could have justified their very existence by saying something like 'our impact is invisible but please trust us, we do make a difference and the knowledge we produce is, somehow, useful.' Such a way out barely seems possible today. The idea that the impact of management and organization research is, for a significant part, untraceable and controllable should therefore be a new starting point for reframing the debate about relevance, and not a way to close, in a rather dismissive way, the 'relevance gap debate'.

This new starting point implies a few next steps. One of them is to focus our attention on the ways management models, ideas and concepts 'travel' and become incorporated in practice outside formal projects of collaborative research with particular practitioners. This process of knowledge institutionalization has so far been studied almost exclusively from the perspective of management fads and the popularization or trivialization of knowledge. A promising option is to follow the path of other fields in the social sciences which have found ways to document the dissemination of social innovations and make conceptual

relevance more traceable, for example by using Callon's (1999) coproduction of knowledge model, which enables us to follow the collective action of production and dissemination of scientific knowledge.

Another path brings us back to the design perspective we discussed earlier. If we mean to take the 'design attitude' (Boland & Collopy, 2004) seriously, then we need to acknowledge that what practitioners might need from us is conceptual knowledge, challenging ideas and disturbing concepts to infuse new design rules that practitioners are perfectly able to construct for themselves. In projects involving co-design between scholars and practitioners, the focus should be more on the collaborative work which comes before the extraction of design rules than on the design rules themselves. If we intend to foster a design attitude that 'views each project as an opportunity for invention that includes a questioning of basic assumptions and a resolve to leave the world a better place than we found it' (Boland & Collopy, 2004: 9), then critical and conceptual research-based management knowledge is certainly needed, and unquestionably 'relevant'.

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