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Battlefield around interventions: A reflective analysis of conducting interventionist research in management accounting

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ABSTRACT

This paper sheds light on the relatively unexplored question of how interventionist research (IVR) is actually conducted in management accounting and what kind of tensions it involves. The central starting point of the paper is viewing good IVR as producing contributions that are not only practically relevant but also theoretically significant, implying that an interventionist researcher has to be effective in both the emic and etic domains. The paper has two layers: the underlying interventionist case study of one of the authors and the reflective analysis based on that, to which the research question and the paper's purpose relate. The underlying study was a longitudinal IVR project including extremely close collaboration with the case firm. It contributed to the cost accounting literature on component commonality, advancing it to the earlier uncharted engineering-to-order production context. Based on this underlying study, the reflective analysis focuses on the various ways in which a researcher's intervention functions as the central driver of an interventionist study. Specifically, it elaborates on the view that the process around interventions is a 'battlefield' of various competing agendas and interests, which an interventionist researcher should balance in order to start, proceed and eventually successfully complete the research project. The balancing acts form a dialogical series of negotiations, relating to both the theoretical and empirical domains. Theoretical contributions of IVR projects tend to emerge in these dynamic processes, in which the researcher feels high pressure to show competence in both domains. However, the battlefield around interventions, though challenging for all parties, is also a rich and inspiring field of opportunities for exchanging knowledge between researchers and practitioners. Hence, IVR projects offer a potential avenue for producing new knowledge, with the two parties collaborating in the spirit of engaged scholarship.

1. Introduction

An increasing understanding in the management accounting academe is that research can be conducted in both non-interventionist and interventionist modes (e.g. Lukka, 2005; Jönsson and Lukka, 2007). However, while there is abundant scholarly guidance and debate on how to conduct a large variety of non-interventionist research,

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our knowledge of the interventionist alternative, a relatively novel approach, is still in its adolescence.[1] Hence, we may ask how interventionist research (IVR) in management accounting manages to fulfil the demanding expectations linked to it. While part of the IVR literature stresses the aim to produce theoretically grounded solutions for practical problems (e.g. Kasanen et al., 1993; Mattessich, 1995), recent studies underline the more scholarly purpose of such research, that is, the need to make theoretical contributions, too (e.g. Kuula, 1999; Lukka, 2000, 2003; Labro and Tuomela, 2003; Jönsson and Lukka, 2007). This more broadly ambitious idea of IVR is consistent with the notion of engaged scholarship, which stresses the generation of new knowledge in collaborative processes between researchers and practitioners, and has recently drawn notable attention in management research (Van de Ven and Johnson, 2006; Van de Ven, 2007). However, there is an obvious need to know more about *how* all this happens in the process of conducting IVR in management accounting; it is still largely a black box needing careful opening. This investigation also responds to Jarzabkowski et al.'s (2010) well-grounded call to state more explicitly what kind of knowledge is developed and how in studies applying research designs in collaboration between researchers and practitioners.

On the basis of the opportunity offered by the longitudinal and comprehensive IVR project of one of the authors (Lyly-Yrjänäinen, 2008) – here named *the underlying study* – this paper delves into the inherent dynamics of IVR. It thus continues the reflective mode of analysis started by Labro and Tuomela (2003), which thoroughly examined the process of one form of IVR, the constructive research approach. Our paper specifically focuses on the roles played by the core of all IVR, the very *interventions* conducted by the researcher in the course of the research process, an issue which has received only scant attention in the prior literature on IVR in management accounting.

IVR is a longitudinal case study approach (with several variations[2]), in which active participant observation is used deliberately as a research asset. The approach is not unobtrusive, since the researcher intentionally seeks to make an impact on the world in order to gain knowledge (e.g. Lewin, 1946/1948; Argyris et al., 1985; Schein, 1987; Lukka, 2003; Van Aken, 2004; Jönsson and Lukka, 2007). In IVR, the distinction between the emic and the etic (Pike, 1954, 1967) is significant. The emic viewpoint refers to studying human behaviour from inside the system, while the etic perspective means examining it from the outside. Since the interventionist researcher is an active participant in the real-time course of events in the field, he or she is bound to adopt the emic perspective based on the issues at hand. This means that the community in which the researcher does the fieldwork accepts him or her as a competent and trustworthy member, an 'insider'. This acceptance is crucial not only to understand the meanings and actions of the actors in the field, but also to enable the researcher to communicate and act together with them (Jönsson and Lukka, 2007). While the adoption of the emic viewpoint is a key characteristic of IVR, it constitutes only one aspect of an IVR study. The researcher also has to assume the etic position, i.e. link his or her findings to a theoretical frame and contribute to it. While the etic perspective is arguably needed in all types of academic studies, it is sometimes underplayed in IVR projects, where efforts often focus on narratives about findings at the emic level only. We argue that a balanced use of the emic and etic perspectives is essential to justify the use of this research approach (cf. Jönsson and Lukka, 2007).

The distinctive feature of IVR, not much reflected yet on an empirical basis, is the very intervention itself. Kasanen et al. (1993) already paid attention to the strong form[3] of intervention typical of the constructive research approach. Labro and Tuomela (2003) elaborated this, shedding light on the process of collaboration between the researcher and the target organisation. Jönsson and Lukka (2007) again distinguished amongst various kinds of roles the researcher might play in that collaboration (expert, team member or comrade) in IVR overall, and corresponding roles (and hectic debates around them) can be found from the literature on action research (a notable variant of IVR).[4] One of the main arguments for conducting IVR was presented by the founding father of action research, Kurt Lewin; the best way to learn about the world is to set it into change (cf. Argyris et al., 1985, p. XII). Its underlying reasoning is that change processes force issues to surface; in such contexts, people involved tend to need to explicate their interests and agendas, as well as mobilise their resources. Additionally, change situations tend to lead to the need to not only talk but also act (Brunsson, 1985, 1989). Being involved with ongoing change processes in the emic mode as 'one of us' – i.e. conducting interventions in one way or another–leads ideally to a situation where the researcher obtains research materials of the highest quality for further analysis, driven by the research question explored.

Despite this prior knowledge and understanding, much remains to be learned from the most critical issue of IVR – the intervention. What exactly does the interventionist researcher do in the field; after initiating the research process, how can he or she sustain it and extract interesting findings? This paper elaborates on the observation that the processes around intervention constitute a battlefield of numerous and often conflicting agendas and interests of the case organisation, the researcher and the academe,

[1] Recent notable examples of IVR publications in management accounting research are Wouters and Wilderom (2008), Wouters and Roijmans (2011) and Suomala and Lyly-Yrjänäinen (2012). The special issue "Interventionist research – the puberty years" in Qualitative Research in Accounting & Management (2010) reflects the increasing enthusiasm in this area. More seasoned explorations of IVR include Kasanen et al. (1993) and Jönsson (1996).

[2] These alternatives of IVR include action research, clinical research, action science, design science and the constructive research approach (see Jönsson and Lukka, 2007). Our paper will analyse a series of fairly strong empirical research interventions typical of the constructive variation of IVR.

[3] It has become common wisdom in IVR literature to view the strength of intervention as a continuum that ranges from modest (e.g. researcher's presence in a meeting) to strong (e.g. long-term and heavy involvement in the implementation of managerial tools or techniques); see e.g. Labro and Tuomela (2003) and Suomala and Lyly-Yrjänäinen (2012).

[4] For a comprehensive account and analysis of these, see Kuula (1999).

apt to render the researcher's task a true challenge. The interplay between emic and etic domains is influenced by the parties involved, and we argue that managing to navigate in such a battlefield is crucial in producing scientific contributions to IVR. The major *purpose* of this paper is to develop a rich account of these tensions, which an interventionist researcher has to resolve, and discuss the balancing acts required to cope with the tensions. Our analysis underlines the view that a good piece of IVR is robust in both the emic and etic domains and that most of the tensions originate from the difficulty of achieving such in one and the same research process. The IVR approach becomes viewed as a dialogue and a series of negotiations across these two domains of knowledge and action, where the researcher's interventions play a central role. We suggest that the theoretical contributions of IVR projects tend to emerge in dynamic processes, in which the researcher feels high pressure to show competence in both domains.[5]

In IVR, the researcher needs to cross the border between the outsider and the insider perspectives, move back and forth from the etic to the emic domain. These dynamic shifts between these two domains with different logical approaches provide opportunities for new insights, since the researcher wants to achieve solutions that work in the field and return with findings and conclusions of theoretical significance (Jönsson and Lukka, 2007). Here IVR can be viewed as one method of applying *engaged scholarship*, which pursues the generation of new knowledge through collaboration between researchers and practitioners (Van de Ven and Johnson, 2006; Van de Ven, 2007). Hence, our battlefield metaphor should not be construed in an overly combative manner. The battlefield around interventions, though challenging for all parties, is also a rich and inspiring field of opportunities for knowledge exchange between researchers and practitioners and the potential conflicts between the collaborating parties can offer significant seeds for generating innovative knowledge. In that vein, we believe that over time, an interventionist researcher will probably learn how to act wisely in the battlefield and turn the potential battles, through his or her balancing acts, into constructive knowledge generation in the mode of generally peaceful collaboration.

As an empirical basis, this paper employs a longitudinal, five-year (2004–2008) interventionist case study in a company, which produces hydraulic power units. The underlying study is the PhD thesis of one of the authors, published at the Tampere University of Technology (Lyly-Yrjänäinen, 2008). It contributes to the cost accounting literature on component commonality, expanding it to the earlier uncharted engineering-to-order (ETO) production context. The study includes not only interventions in management accounting, but also those targeting product development, all of them representing relatively strong forms of intervention. The researcher acquired and developed access to the collaborating firm in the emic mode, with a mutual understanding with the case company management that the researcher's interventions are part of the co-operation. These features not only made it possible for the field researcher to develop the primary research project in a fruitful manner, but also gave us, as members of the research team, an opportunity to reflect on the study from various internal perspectives.

As previously mentioned, this paper is developed based on the main idea of a two-layered structure. The next section briefly describes the theory, fieldwork, interventions and contributions of the underlying study. Although the PhD thesis (the underlying study) is published as a monograph, we find it necessary to share its core contents in some detail with the reader in order to explain them in a meaningful manner in the paper's reflective part, around which its aims are built. However, the underlying study is presented here around the tensions faced and the balancing acts made by the field researcher rather than its substance-related details. Based on the underlying study, the discussion section analytically distinguishes three kinds of tensions inherent in IVR: within the emic domain, within the etic domain, and between the two domains. Regarding the balancing acts required to resolve the tensions, we argue that in particular, prudently applied flexibility, compromises, iterations and triangulation are needed – but not at the expense of losing the theoretical direction and focus of the research. Finally, concluding comments complete the paper.

2. Theoretical contribution through research interventions

2.1. Focus and theoretical contribution of the underlying study

The underlying study (Lyly-Yrjänäinen, 2008) aimed at contributing to the literature on the cost management of component commonality. Component commonality can be defined as the use of the same version of a component across multiple products (Labro, 2004), and it is often considered as a means to combine product variety with cost efficiency. However, most studies focusing on potential cost implications of component commonality are non-empirical (see e.g. Perera et al., 1999; Hillier, 2002; Zhou and Gruppström, 2004); those few based on empirical data (e.g. Thyssen et al., 2006) do not explicitly consider the process changes and related cost implications of increased commonality but are based on hypothesised changes in the product structure. Moreover, the empirical studies published have focused on make-to-stock (MTS) and assembly-to-order (ATO) production contexts (see, e.g. Thomas, 1992; Perera et al., 1999; Fong et al., 2004), and the contingent nature of component commonality within different production contexts has not received particular attention.

The underlying study focused on using component commonality as a means to manage the costs of manufacturing hydraulic power units (see Fig. 1 for a schematic illustration). Hydraulic power units provide the power for various hydraulic applications, for example, in factory automation. Such applications are usually engineered to order, and since the functional requirements of each application

[5] Since we focus on the interventions in the field study phase, exploring the possible challenges in publishing IVR lies outside the scope of our paper.

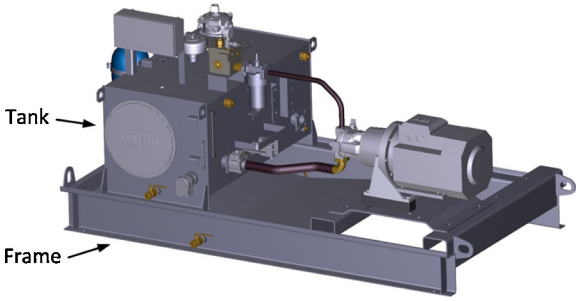

Fig. 1. Schematic illustration of a hydraulic power unit.

define the components needed for the hydraulic power unit, the power units are also engineered to order. Based on the components selected for the power unit, its appropriate tank and frame would then be designed and manufactured. Although the tanks and frames as the physical platforms for the power units are designed last, they are needed in the assembly first. This situation makes the mechanical engineering of these components a bottleneck for the delivery process.

Eliminating this bottleneck with common tanks and frames provided an uncharted setting to study component commonality and its cost implications, with the theoretical contribution divisible into four parts (Lyly-Yrjänäinen, 2008). First, the literature on component commonality introduces various commonality indices, showing the relationship between the product variety offered and the amount of components needed. These indices assume all components to be equal in terms of their cost reduction potential. However, increased component commonality, especially in the ETO context, calls for critical scrutiny of product architecture; in that process, some bottleneck components may not have significant impact on measured commonality index values, but may strongly affect processes and related costs.

Second, under some circumstances, bottleneck components can be replaced with common ones with lower production costs. This finding supplements the extant discussion emphasising the cost of over-specification as one of the main drawbacks of component commonality by arguing that the possibilities to increase manufacturing batch size may compensate for the possible unit-level cost increase caused by commonality.

Third, the extant literature on component commonality focuses on costs related to inventory levels and other materials management activities. Lyly-Yrjänäinen's study (2008) adopted a broader scope on financial implications and argued that commonality eliminating the bottleneck components has a potential to transform the business from ETO closer to ATO logic, thus resulting in cost savings in project engineering and sales.

Finally, published cost models favour the use of transaction drivers, such as number of components, production runs or purchase lines. The underlying study showed that the cost implications outside manufacturing processes are difficult to capture using such transaction drivers. However, because of increased commonality, some of the existing activities can be completed faster, which could be reflected by favouring duration or intensity drivers in cost accounting (cf. time-driven, activity-based costing in Kaplan and Anderson, 2004).

After this outline of the theoretical contributions of the underlying study, the next subsections address the IVR process leading to these findings and the role that interventions played in it. The analysis portrays the research process as a dialogue amongst the different participants, with the challenge of balancing occasional conflicting interests and agendas.

2.2. Scouting the battlefield and facing the first tensions

A field researcher's practical expertise can be a valuable resource in IVR. In our case, it constituted a key trigger for empirical access. The field researcher has a background in innovations, enabling mass customisation in the conveyor industry (patent numbers 116130 and 117935), and the case company's managing director was interested in finding similar solutions for hydraulic power units. According to him:[6]

> '*Hydraulic power units have been manufactured like this for over 30 years. There has to be some other means to make them, with significantly lower costs. We just have to find the clue*!'

The managing director's idea was to take advantage of the researcher's perceived expertise to investigate the use of mass customisation as a means to manage costs in the power unit business and in exchange, allow the researcher access to the empirical case at hand. However, the sales director leading the development team initially viewed the researcher's role differently; in the first meeting with the researcher present, he said:

> "*Since we now have this external resource here, he could write the memo, couldn't he*!"

Even though this was not the interventionist role he had in mind, the researcher agreed to write the discussion memos related to the mass customisation development project. This compromise indicated the researcher's willingness to share part of the workload with the project team; at the same time, it positioned the practical, interventionist work in the area of the research interest. Such concession supplements the view on the determinants of collaborative success presented in Amabile et al. (2001) by recognising the value of compromises in the researcher's role and the continuous negotiations on the role and responsibility expectations, despite the lack of full initial clarity.

The first task undertaken was to study the product architecture to find out what customer features and hence, modules and components, should be included in the mass-customised, power unit family. This task proved to be challenging. First, there was no specified product architecture to study; ETO business, by definition, means that products are designed and manufactured for individual customer orders without explicitly defined product architecture. Second, since all products were designed on a

[6] The discussions in the field were not systematically recorded, but they were carefully documented in memos and field notes.

case-by-case basis, the development team also lacked experience in systematic analysis of product architecture and component use in different power units; hence, they were unwilling to allocate engineering resources to it, as expressed by the design manager:

'*I do not understand why we should analyse component use in power units not yet sold to anyone?*'

Changing the mind-set called for the change facilitator role; the researcher had to roll up his sleeves and start studying the component use himself. This incident also serves as a reminder of the risks related to the process; as McSweeney (2004) pointed out, a field researcher not only has to free oneself from all kinds of a priori prejudices but also resist external pressures to accept without critique any one-sided information, leads or values. In our case, the analyses of component use (guided by the researcher's expertise) proved helpful in showing how different customer features impacted the power unit design, eventually revealing the 'emergent' product architecture that evolved through the power units manufactured over the years. With the first results, the company management realised these analyses' relevance to the project, resulting in more in-depth studies on the topic, now also involving the company's engineering resources. Consequently, the field researcher was no longer considered just a marginal extra resource to write the memos, but rather a specialist in analysing product architecture in a context that lacked one.

At the outset of the project, the field researcher's intention was to contribute theoretically to cost management in the context of mass customisation. Thus, interventionist involvement in the development work was needed to gain empirical data on what cost management through mass customisation could mean in practice. However, a paper presented in an academic conference in which the field researcher participated affected the theoretical focus and positioning during the early phases of the fieldwork. In her paper, Labro (2003) investigated the existing component commonality literature through the management accounting lens; instead of the operations research approaches dominating the literature, the activity-based costing framework was applied. Motivated by this recognised gap in the literature and the call for further empirical studies on component commonality, the researcher decided that the case study be positioned as an empirical theory-testing study on component commonality, applying the activity-based costing framework, too. Thus, the interplay between the theoretical and empirical interests and possibilities led to flexibility in research question formulation. While this kind of flexibility is known to apply to all forms of case-based fieldwork (see e.g. Berg and Lune, 2012, pp. 22–26), the importance of acknowledging this in IVR is fortified by the frequently occurring pressures and the rush driven by the target organisation's practical agenda, which can easily lead to a dead end for the researcher's project.

2.3. The possibility of a common tank and frame emerges

To understand the power unit as a cost object, the field researcher spent a week in the production department of the case firm. In addition to the hands-on experience on the product and its assembly process, the time in production also provided opportunities for informal discussions with the workers on the shop floor. On the second day, the assembly workers started to talk openly about the management culture and its perceived challenges. Thus, working together made it possible to gain the workers' trust and hence overcome the barrier between blue-collar workers and managers, in which a cost management researcher may be labelled as one-sidedly the latter, leading to political tensions capable of jeopardising the progress of empirical process, as McSweeney (2004) discussed. This co-operative relationship also turned out to be a valuable asset later; in contrast to the employees in other departments, the production people showed no organisational inertia towards the ideas introduced during the project. It seemed as if the blue-collar workers appreciated the researcher's effort to gain hands-on experience, resulting in a certain emic role amongst them as well.

After the week in production, all the white-collar employees associated with the power unit manufacturing were interviewed. Interestingly, every interviewee brought up the same issue:

'*The holes in a tank are more expensive than the tank itself*!'

This statement sounded curious and was therefore further investigated; while the supplier company indeed had a very competitive price on the tank, it charged extra for cutting the holes on the tank, which doubled the price. However, the analysis revealed justified reasons for it. First, because every power unit had a unique bill of material (BOM), and the BOM defined the holes to cut, from the supplier's point of view, each tank was a unique, low-volume item. Second, since the holes in the tank were defined case by case, the documentation was quite unsystematic, causing unnecessary confusion in the supplier's assembly process. Finally, whenever some 'last-minute changes' were made in the BOMs, the tank configuration had to be revised too, resulting in re-work in the tank assembly. At the same time, the production and purchase people were claiming that the tanks and frames were the main cause of delays in the power unit manufacturing, significantly burdening the white-collar people. Overall, this process of understanding the tank as an object of analysis is a reminder of the importance of empirical triangulation in IVR – striving towards challenging and eventually combining different viewpoints on the same issue. This step is done not only to collect rich data, but also – as phrased by Van de Ven and Johnson (2006, p. 813) – to ponder whether sufficient 'candour and penetration' has been achieved for building valid interpretations on the empirics.

To resolve the challenge with the tanks, the possibility of common tanks and frames had to be scrutinised. These common tanks and frames should enable a large variety of customised BOMs to be built on top of them without any need for engineering or customisation. Evidently, since all the interviewees had pointed out the problems related to tanks, organisational commitment could be ensured. However, the sales people did not consider the objective realistic at all:

'*Come on... If it was possible to use standardised [common] tanks in hydraulic power units, it would have been done already long ago.*'

It can be considered a risky investment from the researcher's point of view to start developing something that the industry specialists deemed impossible. At the same time, its success was vital for two reasons. First, without at least one solution for improved component commonality, this study had not differed much from, and thus not contributed to, existing non-empirical studies. Second, success in the development work facilitated managers' engagement in the process of reflection and analysis of the cost implications. As the managing director put it:

'*We are interested in understanding cost implications of issues that we see applicable. In business, profits [that] come with risks and uncertainties are hence accepted, but in the end, we cannot commit ourselves to projects that are only theoretically interesting – a research project, in the end, is a project for us with a certain expected payback...*'

As indicated by the preceding quote, there is an evident risk in IVR research that managers do not maintain their efforts in empirical processes showing only little value from their pragmatic perspective. In this sense, success in achieving practical aims may be vital for securing the theoretical interests of the field researcher.

However, fulfilling theoretical interests calls for more than fluent empirical processes with interested managers; it is crucial to recognise the limits of existing theoretical understanding related to the phenomena. In our case, while first attempts had been made to analyse the cost implications of component commonality using commonality indices and transaction drivers (Lahikainen et al., 2003; Lyly-Yrjänäinen et al., 2004), such efforts seemed unable to capture the cost behaviour modelled during the field study and were not in line with the analyses presented in prior literature (cf. Labro, 2004). This result suggested that there would be room for theoretical advances.

2.4. Technical breakthrough and its financial validation

After two years of fieldwork involving many trials and errors, the time invested in studying the product architecture paid off in a pragmatic sense; a solution for configuring customised power units on top of completely standardised, common tanks and frames was invented. Consequently, empirical theory testing was now one step closer. As soon as the new solution was introduced, the management was willing to commit the time needed, and weekly brainstorming sessions were held to solve whatever technical or organisational issues were encountered. As a result, the process seemed to be advancing well, until the actions taken in the development process were questioned by a fellow cost management researcher. He postulated that when attempting to manage costs, one should focus on the larger cost elements; in large cost elements, relatively small improvements will result in substantial overall cost reduction, yet tanks and frames were relatively cheap parts. Although the questioning by a close academic colleague in the middle of such an intense development process seemed somewhat unfair, it forced the field researcher to step out of the emic world to find analytical and theoretical arguments supporting the selected direction. Thus, the dialogue initiated by a fellow researcher's opinion ensured the fieldwork's well-argued link to theory development, preventing it from eroding into a product development project only.

With the first concrete 3-D models emerging – indicating the proximity of the market launch – the management became extremely committed to quantifying the cost reduction potential of the new, mass-customised power unit with common tanks and frames. As a result, when the development team prepared the *ex ante* cost analysis on the new power unit concept, the four elements of the theory contribution (presented in the beginning of this section) surfaced through the discussions between the managers and the field researcher.

The progress in the development of the technical solution hence facilitated the discussions on the potential cost implications; eventually the project team reached a consensus on the new solution's feasibility, as well as the expected cost implications. Thus, after three years of fieldwork, the company had now implemented a new product concept with increased component commonality, whose cost implications were now available for analysis with real customer cases. Moreover, through the help of the updated costing system during the process, the *ex ante* cost analyses were soon also validated with grounded *ex post* cost data. With the customer orders flowing in, the company management wanted to take over the implementation process, diminishing the researcher's role in it. Consequently, during the last phases of the process, the field researcher was able to increasingly emphasise the etic stance and elaborate on the theoretical contribution.

2.5. Clarifying the theoretical contribution

Soon after the internal introduction of the new, mass-customised power unit concept, discussions with academic peers ensued. The new product concept, the related *ex ante* cost analysis, as well as the problems in using commonality indices and transaction drivers in it, were discussed openly. During one such meeting, a colleague offered an interesting idea:

'*Maybe it is the ETO context that explains some of these things. Maybe that is the new thing here...*'

This perspective was an important breakthrough in the project, again showing the importance of external academic peers capable of pulling the researcher out from the emic world. It made the field researcher realise why it had proven so difficult to eventually design his study as a theory-testing exercise. As soon as the ETO context's role as a potential factor explaining the empirical findings that contradicted existing literature was discovered, the extant literature was re-analysed to confirm the lack of explicit discussion of the production context, as well as the latter's role in explaining the characteristics of component commonality and its potential cost implications. This aspect of the research process was actually quite similar to what could take place in traditional, unobtrusive qualitative research.

To conclude, the underlying case study aimed at contributing to the cost accounting literature on component commonality, and interventions were used as a means to gain deep, emic-level access to the company to gather valid empirical data. It represented the various tensions not only within the company but also amongst fellow academics, forming yet another battlefield for the interventionist researcher. Securing and maintaining access to interesting empirics, however, required overcoming these tensions, and the researcher was accepted as 'one of us' by the project team members, as expressed by the managing director:

> '*The challenge is always how to make oneself an accepted team member. It will not happen without being present, rolling up the sleeves and getting involved with the tasks at hand. If the researcher had not been engaged in designing the product solutions but instead, had just been bossing around waiting for our engineers to produce the drawings, the situation would have become totally different.*'

In the next section, the tensions and challenges present in interventionist fieldwork are reflected upon and connected with the lessons related to the possible balancing acts available for an interventionist field researcher, based on our underlying study.

3. Discussion: balancing acts to cope with emerging tensions

Purposefully intervening in the flow of events of a real-life organisation constitutes a true challenge for any researcher. Finding a suitable match between the target organisation's interests and the researcher's theoretical pursuits is a continuous challenge and source of tensions present throughout an interventionist field study. To secure the benefits of all the IVR project stakeholders, balancing acts are necessary not only within the emic and etic domains, but also between them, as the choices made within one inherently affect the other.

3.1. Within the emic domain

Our evidence drawn from a series of strong interventions supports the view that consensus amongst the key persons within an organisation cannot be assumed, for instance, regarding the researcher's role in the empirical setting. As discussed by Amabile et al. (2001), this issue can easily create an obstacle to proceeding with the venture. It has to be resolved through active negotiations driven by the researcher, as well as agreeing on shifting some emphases with respect to the researcher's role during the course of the field study, if needed. In practice, this process might affect the field researcher's schedule quite notably, occasionally requiring investment of time in tasks somewhat secondary to the venture's scientific aims. However subordinate such efforts may seem (for instance, conducting technical analyses and writing memos), they can facilitate the project's continuation and build trust between the researcher and the organisation's members, thus also benefiting the theoretical aims.

Therefore, we encourage IVR researchers to put effort into building the elements of collaborative success (cf. Amabile et al., 2001) by accepting temporary compromises in the researcher's role, as well as being alert that the compromises do not turn into sole benefits for the target organisation. In this regard, it is important to address and negotiate continuously on the role and responsibility expectations, particularly when there is a lack of full initial consensus on the matter. We suggest that during this negotiation process, researchers put forward their perceived expertise in a substantive area such as accounting or engineering – although sometimes recoiled from in action research (cf. Kuula, 1999) – this can actually serve as a valuable asset to enable empirical access and legitimise the researchers' presence in interesting events and situations in the field.

In our case, the field researcher's expert role, although acknowledged by some company representatives, did not mean that his proposed ideas and analyses were easily and instantly accepted by the organisation. To proceed with analyses important for the research, the field researcher had to be willing to take risks by allocating time in in-depth studies of some issues related to the development ideas, prior to receiving full support from other members of the organisation. This field researcher's contributions to time-consuming practical issues at the early stages of fieldwork made it possible for him to focus on theoretical elaboration at the later stages, as the practical change process was ongoing. As previously noted, this approach confirms Lewin's original claim that setting up some changes in the world is a great way to learn from it (cf. Argyris et al., 1985, p. XII).

For a successful emic-level dialogue in IVR, we stress the importance of conscious, ongoing evaluation of the depth or maturity of access (cf. Ahrens, 2004). By versatile engagement in the field (in our case, building relationships not only towards the development of project management, but also in production, sales and engineering), an interventionist researcher can mobilise a kind of local empirical triangulation, which serves to assess the maturity of access. As argued by Van de Ven and Johnson (2006), such triangulation is useful in determining whether sufficient visibility has been achieved in building valid interpretations on the empirics and considering intervention initiatives, at times even relatively courageous ones, such as those made in the underlying study's case.

3.2. Within the etic domain

It is not a unique characteristic of IVR that there are typically several alternative avenues of theoretical development that can be considered in case-based empirical work. In unobtrusive case research, basically, scholarly knowledgeability and judgement can be used to select the most promising avenue that directs the formulation of the scope and focus of empirical work. While this method generally also applies to IVR, the process of identifying the theoretical aims is fundamentally critical in IVR, since the target organisation's expectations are also at stake. It means that whatever is the choice from the theoretical

point of view, it affects the possibilities of responding to the pragmatic expectations of the target organisation.

In the case of our underlying study, a number of potential ideas or leads could have served as a basis for developing the theoretical contribution. While it is clearly important to have a theoretical idea in mind when entering the field, an interventionist researcher should maintain certain flexibility in the research question formulation to optimise the potential of the field study. While this strategy is well-known as applicable to all forms of case-based fieldwork (see e.g. Berg and Lune, 2012, pp. 22–26), we emphasise the significance of acknowledging it in IVR, since the pressures (frequently even the rush) driven by the target organisation's practical agenda can otherwise easily lead the researcher to a dead end with the project. Notably, this flexibility should not be understood as the acceptance of arbitrary drifting based on personal preferences, but it should be carefully evaluated by an ongoing probe of topical research literature. In this regard, the support and sparring from peers can be crucial, as was the case in our underlying study.

3.3. Between the emic and etic domains

In our underlying study, some of the balancing acts between the emic and etic domains were initiated by stimuli external to the actual field research process. Particularly, the ideas and suggestions from fellow researchers emerging at various stages of the project required conscious actions in order to be accommodated. As irritating as these external stimuli may at times seem in the middle of a hectic research process, they actually provide the field researcher with a valuable test bench, helping develop and explain argumentation, not only in the last reporting phases, but also much earlier. On this basis, we strongly recommend that researchers actively seek opportunities for disclosing their findings and assumptions quite early, rather than maintaining a narrow, inward-looking orientation and postponing the distribution of findings, for fear that they are not yet well-developed. Not only do we support Jönsson and Lukka's (2007) view claiming that IVR is essentially about 'going there and back again', but also (through the analysis of our underlying case) add to this understanding by emphasising the *iterative* nature of such movement between 'the emic' and 'the etic'. It is particularly gratifying for a researcher perceived as an expert in the field to keep this idea in mind; he or she can gain instant rewards (for example, earned respect) when investing her time in practical issues, in contrast to the promise of uncertain, delayed rewards when investing time in theoretical elaboration and writing academic papers.

From the emic point of view, in the underlying study, it was quite clear from the beginning that the project could be best understood as a mass customisation development venture. Given this prevalent vocabulary amongst company members, this mass customisation mind-set also strongly affected the initial positioning of the theoretical exercises. However, the study later demonstrated its best potential related to the cost of component commonality literature. This judgement on the project's value from the etic perspective was rooted in exposure to a paper written by a management accounting research peer (Labro, 2003) and reflection on the initial lessons learned from empirics against the call for further work presented in the paper. Successful interventions and a constructive attitude from the field researcher were needed to bridge the initial position in the emic domain and the theoretical knowledge brought from the etic domain; it was crucial to prove in practice that mass customisation can be realised profitably by using just one key common component – the over-specified tank.

Furthermore, the success of theoretical development depends not only on the positioning, but also on the continuous interplay between the two domains during the fieldwork, enabling further refinements. In our case, after the theoretical positioning in the commonality literature, it was expected for the project to produce new empirical material necessary for the theory testing called for in prior literature (Labro, 2003). However, by attempting to test the findings of the extant commonality literature through interventions (cf. Malmi and Granlund, 2009), it soon appeared that the theory did not provide much help in capturing what seemed to be happening in the case; prior theory and the case did not fit well enough for a theory test. Eventually, this situation led to the realisation that the study should be viewed more as contributing to theory refinement and extension rather than to theory testing.

3.4. Dynamic processes of developing theory contribution

Our analysis has depicted the collaborative process between researcher and organisation in IVR as a valuable approach to accessing better and more nuanced data, compared to unobtrusive alternatives (Jönsson and Lukka, 2007; Wouters and Roijmans, 2011; Suomala and Lyly-Yrjänäinen, 2012). Moreover, it is a two-way road, which alleviates the access issues and facilitates engagement between practitioners and researchers to develop innovative knowledge in collaboration (Van de Ven and Johnson, 2006; Van de Ven, 2007). By increasing our understanding of the inherent tensions in the collaborative process and how they can be tackled constructively, our study further informs how engaged scholarship can happen through IVR and responds to Jarzabkowski et al.'s (2010) call to state more explicitly what kind of knowledge to seek in research projects designed in the spirit of engaged scholarship.

We finally reflect on the processes pursued to achieve the theoretical contributions of our underlying study. We do not aim to discuss these commonality-related contributions to the cost accounting literature per se, but to focus on the specific *role of interventions* in achieving them.

The IVR process of the underlying study as a whole, which utilised extant theories to make sense of the empirical environment (and push them forward), implied the issue of component commonality and indices surfacing in the first place. Simultaneous empirical fieldwork and exploration of prior literature for insightful theoretical underpinnings led the field researcher from mass customisation to component commonality and commonality indices as a success measure. Thus, the empirical work with the case, which put the theoretical ideas under continuous empirical scrutiny (as suggested by Malmi and Granlund,

2009, for example), together with an active search for relevant theoretical underpinnings, facilitated the meaningful positioning of the research.

Regarding the cost of over-specification, taken for granted as being high by the case company managers, the key was not the empirical finding that (indeed) production volumes are low in the ETO business. Rather, the trigger was the realisation that the process-related benefits of over-specification may well exceed the negative effects on the direct material costs. To arrive at such a conclusion, it was necessary to *show* at the product level what profitable over-specification could actually technically require. Recall that at the outset of the project, the managers' mind-set did not support the idea of building customised products using standardised tanks in the first place. Thus, in the empirical setting, no concept existed on what over-specification would physically mean, since it had never been considered even a possibility within that industry.

The contribution of the underlying study, supporting the use of duration or intensity drivers in cost modelling (see Kaplan and Atkinson, 1998), directly owes its success to interventions made during the course of the study. Initially, there was a managerial interest towards simple cost drivers, which could be used in modelling cost behaviour, but the *ex ante* calculations made after the technical development (facilitated by interventions) indicated that time-based drivers would be more valid in reflecting the cost behaviour. By stressing the importance of the interplay between literature-based and managerial inputs, our finding complements Labro and Tuomela's (2003, p. 433) view, suggesting that identifying potential research questions in IVR benefits from merging the extant research literature with the target organisation's practical interests and suggestions, without compromising either one.

4. Conclusions

Our paper has made an attempt to increase the knowledge on interventionist research, based on the opportunity offered by the longitudinal case study project of one of the authors. By drawing from that empirical process characterised by the researcher's strong interventions to fuel change, the paper has revealed IVR's dynamic nature. It stems from the series of actions/reactions typically present in such a research process, to the extent of justifying the use of the battlefield metaphor to describe the IVR flow, particularly in the case of making strong interventions. Our paper has focused on the researcher's interventions in the course of the empirical research and on the diverse tensions likely to be encountered when dealing with the multitude of initial and later interests and agendas of stakeholders. Connected with the tensions, potentially emerging within the emic or the etic domain or across the two, we have also addressed the balancing acts needed by interventionist researchers to navigate successfully through the field study. Through these balancing acts, the potential battlefield of IVR can be transformed into engaged scholarship. Based on our analysis and reflection, we have sought to draw out observations and lessons that make a useful reference point for researchers planning or already conducting management accounting research in the interventionist mode. Although our paper has analysed a series of fairly strong empirical research interventions typical of the constructive variation of IVR, we believe it likely that that many of the challenges and balancing acts discussed here are relevant in other types of IVR, too.

Regarding the core mechanism of IVR, our reflective analysis has illuminated the possible dual role of actual interventions. On the one hand, they can serve a more indirect function as means to locate the most interesting questions and data in the field, by revealing items that are otherwise not visible to researchers or even the managers involved. On the other hand, interventions may be directly used to examine theoretically motivated ideas, for instance, to explore the boundaries of extant theories. In the latter role, interventions serve as means to perform real-life experiments, whose legitimacy and possible ethical hazards (related to, for instance, the real-life outcomes and influences of research interventions) should be carefully considered before and during the action. Particularly, researchers' independence and neutrality are important attributes. Through it all, their expertise can be deemed a useful asset for enabling access and complementing the knowledge resources within the company, making possible such change processes that would not be realistic without joining forces.

Whereas there might be a common interest to solve the various problems faced during the IVR process and to sustain the project's operations, the problems recognised by researchers and managers do not have to be identical. One of the key implications of our reflective analysis is that a common ground and consensus on the targets of analysis and action, as well as on priorities, have to be discovered or built before or during the field study to make the venture successful. The fact that successful IVR requires issues that are perceived relevant for both parties demands an active stance from researchers, who should be ready and able to *construct* a common ground and interesting questions, rather than being content to just attempting to *find* one.

It is worth noting that IVR is typically a two-way road. Solving practical problems through researchers' interventions (as in our underlying case) can be a prerequisite for theoretical contribution, but theoretical development can also open avenues for advancing practice during the field study phase. Researchers' interventions often initiate the Lewinian field experiment, making issues and relationships surface, thereby also tending to mobilise many kinds of tensions and resistances, as they may shake the institutionalised status quo.

There are numerous sources of tensions in the battlefield of IVR, ranging from different theoretical or practical interests or agendas and varying cognitive understandings (e.g. about technical feasibilities) to emotional resistance. It is vital for interventionist researchers to realise that an IVR project is not only a technical exercise, but tends to notably touch the human aspect as well. Researchers are thus required to invest in building trust by listening to, and collaborating with, not only the organisation's managers, but often also the different employee groups. This approach will likely alleviate possible fears and prejudices towards the IVR project within the organisation as well as improve

the quality and comprehensiveness of data and eventually the value of contributions.

As researchers typically need to recursively straddle the outsider (etic) and the insider (emic) perspectives, the tensions faced can be located within emic, within etic and between emic and etic domains. The presence of these two domains with different logical approaches serves as a source of tensions related to the researchers' role in the field and maturity of access (within the emic), theoretical positioning, flexibility and alignment (within the etic) and the field researchers' expert role (between the emic and the etic); it also provides opportunities for new insights. The battlefield around interventions, though challenging for all parties, is also a rich and motivating field of opportunities for exchanging knowledge between researchers and practitioners in an engaged fashion. Particularly, interventionist researchers' skilful balancing acts can transform the mere battlefield of IVR into a process of engaged scholarship.

We stress that over-emphasising either theoretical or practical interest is likely to challenge the progress of the research process – the former risking the interest of the case organisation and jeopardising access, the latter blurring the research agenda and thus the project's fundamental purpose. It may also create tension for researchers that some of their individual acts during the field research may not directly lead (or seem not to lead) to scientifically important outputs. Researchers may feel pressure, since many of their individual interventions (such as technical analyses) may be expected to contain intrinsic practical value for the organisation, whereas their scholarly value will only be assessed over a longer term. These types of tensions between emic and etic domains can be best balanced through active communication and discussions between parties. Versatile and sometimes even conflicting interests should not be dismissed and neglected but openly negotiated from the planning stage to execution.

Within the emic domain, some practical (e.g. engineering) challenges in the change process may pose a risk to the progress of the research and its theoretical contribution. For this reason, it is important to prepare for different scenarios during the field study and be willing to develop alternative roadmaps to proceed with the research. Researchers should plan not only for the most ideal route, but also for several alternatives, considering their theoretical interests and required data. Within the etic domain, researchers should not isolate themselves during the field research, but actively seek out existing research and engage in discussions with academic peers and different interest groups at multiple levels within the case organisation. They should also allow deliberate flexibility regarding their research questions when it becomes evident that the progress of the empirical process brings out interesting new issues other than those originally identified in the planning phase. In sum, the active and goal-oriented intermediary role of field researchers, which results in an awareness of both the theoretical and practical potential of collaboration, is the key trigger for an IVR project to fulfil the ideals and requirements of engaged scholarship and redeem the potential of IVR as scholarly inquiry.

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