



# A conceptual development of Simons' Levers of Control framework

Sophie Tessier<sup>a,\*</sup>, David Otley<sup>b</sup>

<sup>a</sup> HEC Montreal, Department of Accounting Studies, 3000 chemin de la Côte-Sainte-Catherine, Montréal, Québec, H3T 2A7, Canada

<sup>b</sup> Distinguished Professor of Accounting and Management, Department of Accounting and Finance, Lancaster University Management School, Bailrigg, Lancaster, LA1 4YX, UK

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## ABSTRACT

The management control literature has been criticised for having concepts that are ill-defined. This causes mixed empirical results and makes it difficult to build a coherent body of knowledge. The paper addresses this issue by developing an important framework, that of Simons' Levers of Control, which has been criticised in the past for its vague and ambiguous definitions. Using methods of concept analysis, the paper analyses prior literature to identify ambiguities with the different levers of control and uses examples from prior field studies to illustrate these ambiguities. The paper also analyses the positive and negative dimensions of controls, which, although part of Simons' framework, have remained unexplored. For each ambiguity identified, the paper proposes a solution to improve concept definitions or to clarify the relationship between concepts. The result is a revised framework that explicitly separates managerial intentions for controls and employee perceptions of controls. Managerial intentions are comprised of three levels: 1) types of controls (social and technical) 2) which are organised as four control systems (strategic performance, operational performance, strategic boundaries and operational boundaries) and 3) which can be used diagnostically or interactively, have an enabling or constraining role and can lead to either reward or punishment. Finally, after defining the framework's concepts and explaining how they interact, the paper concludes by offering avenues for future research.

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## 1. Introduction

In recent years, the management control systems (MCS) literature has been criticised for being too compartmentalised (Covalesski et al., 2003) and for having problems with the definition of its concepts (Chenhall, 2003; Otley, 1980). For example, concepts with the same label are often defined differently by different people (Bisbe et al., 2007; Malmi and Brown, 2008; Van der Stede, 2001). These problems lead to mixed empirical results (Bisbe et al., 2007; Otley and Fakiolas, 2000) which makes it difficult to compare studies (Malmi and Brown, 2008) and to build a cumulative and

organised body of knowledge (Hartmann, 2000; Malmi and Brown, 2008).

In response to these criticisms, some attempts have been made to improve conceptual specifications (for example, see Bisbe et al., 2007; Van der Stede, 2001). However, these attempts still follow a compartmentalised approach in the sense that they each try to improve one specific concept, such as interactive controls (Bisbe et al., 2007) or tight controls (Van der Stede, 2001) rather than comparing different concepts that address similar issues (Morse et al., 1996a,b) or improving a framework as a whole (Malmi and Brown, 2008). To address these issues, this paper examines an important framework, the Levers of Control (LOC) framework (Simons, 1995), and takes a holistic approach which consists of analysing the internal consistency of the framework's components and also comparing them with other similar concepts in the literature.

\* Corresponding author. Tel.: +1 514 340 6568; fax: +1 514 340 5633.  
E-mail addresses: [sophie.tessier@hec.ca](mailto:sophie.tessier@hec.ca) (S. Tessier),  
[d.otley@lancaster.ac.uk](mailto:d.otley@lancaster.ac.uk) (D. Otley).

Simons' framework has been used frequently in the literature over the years with almost 790 citations (Google Scholar, 2011). It has many strengths such as including different types of controls and providing a broad perspective (Ferreira and Otley, 2009). However, its main weakness is the definitions of its concepts which are too vague and sometimes ambiguous (Ahrens and Chapman, 2004; Bisbe et al., 2007; Ferreira and Otley, 2009). While there have been some attempts at refining the definitions of diagnostic and interactive control systems (Bisbe et al., 2007; Ferreira and Otley, 2009), belief and boundary control systems have received less attention. As a result, there have been calls for these levers of control to be investigated in more depth (Collier, 2005; Nixon and Burns, 2005) and more recent papers now include all four levers (Granlund and Taipaleenmäki, 2005; Marginson, 2002; Mundy, 2010; Tuomela, 2005; Widener, 2006). However, no specific attempts have been made to improve their definition. Moreover, there have been very few attempts at improving the framework as a whole. Ferreira and Otley (2009) have proposed a new framework based in part on the LOC framework, but the end result does not include belief and boundary control systems, an exclusion that has been previously criticised (Collier, 2005). Finally, the idea of positive and negative controls, which is present in Simons' framework, has received very little attention and no attempts have yet been made to improve the definition of this important concept.

This paper develops a revised version of the LOC framework which improves on existing concept definitions to give it greater internal coherence, while retaining the useful elements of the original framework. While there are four major methodological approaches to concept analysis (Wilson-derived methods, qualitative methods, critical analysis of the literature and quantitative methods) (Morse et al., 1996a), this paper is mainly based on a critical analysis of the literature. In addition, qualitative methods are also used, especially for the positive and negative concepts since, except for Simons' use of these concepts there is no prior literature available. Our qualitative approach uses some examples from three case studies to illustrate problems with concept definitions.<sup>1</sup> These are from two companies in the chemical industry and one service-based company.<sup>2</sup> However, this is not an empirical paper and examples from the cases are added only to illustrate and support the development of the framework. It has to be noted that quantitative methods are not used because these methods are appropriate only when concepts have reached a certain level of maturity (Bisbe et al., 2007; Morse et al., 1996a), which is not the case for belief and boundary control systems.

The remainder of the paper is structured as follows. First, a summary of Simons' framework is presented. Then, ambiguities in the literature are analysed to identify what

the revised framework needs to clarify. This incorporates support from the literature, examples from the field to illustrate the ambiguities and suggested improvements. Based on the analysis, an improved version of the LOC framework is proposed and explained. The result is a framework in which components are better defined and more tightly integrated, and therefore more useful for holistic empirical research on control packages. Finally, the paper concludes with the implications for future research.

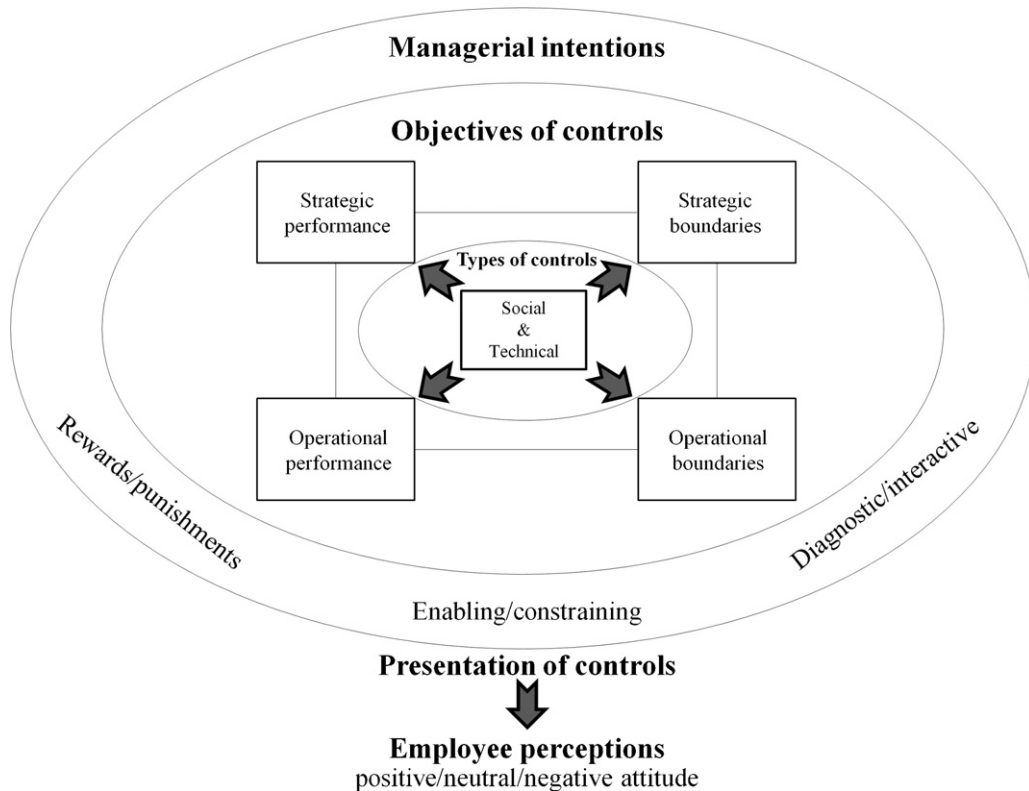
## 2. Simons' LOC framework

Underlying Simons' framework is the idea of opposing forces that manage tensions "between freedom and constraint, between empowerment and accountability, between top-down direction and bottom-up creativity, between experimentation and efficiency" (Simons, 1995, p. 4). These tensions are managed by what Simons calls positive and negative control systems. Simons (1995) compares the concept of positive and negative controls to the yin and the yang of Chinese philosophy. Positive controls are the yang force representing sun, warmth and light. They motivate, reward, guide and promote learning. Negative controls are the yin force representing darkness and cold. They coerce, punish, prescribe and control. Positive and negative controls are opposing forces that need to coexist to create dynamic tensions which in turn ensure effective control. While the word negative has bad connotations, for Simons, negative controls are not defined as bad controls, rather they are seen as important as positive controls (Simons, 1995). "Boundary systems are like brakes on a car: without them, cars (or organizations) cannot operate at high speeds" (Simons, 1995, p. 41).

To manage these positive and negative forces, Simons identifies four levers of control. Of the four levers, two are defined as positive (belief systems and interactive control systems) and two are defined as negative (boundary systems and diagnostic control systems). Belief systems, which communicate core values of the company, are "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organisation" (1995, p. 34). Interactive control systems, which focus on strategic uncertainties, are "formal information systems that managers use to involve themselves regularly and personally in the decision activities of subordinates" (1995, p. 95). Not only do interactive controls have an attention focusing role, they also stimulate search and learning which can result in new emergent strategies (1995, p. 91). Boundary systems, which communicate risks to be avoided, "delineate the acceptable domain of activity for organizational participants" (1995, p. 39). They include activities that impose codes of business conduct for employees. They also serve as strategic boundaries delineating managers' search for innovative ideas. Diagnostic control systems, which communicate the critical performance variables, are "formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance" (1995, p. 59).

<sup>1</sup> Information on these case studies can be found in Tessier and Otley (2012). These case studies were part of research studying negative controls. While not completely ignoring positive controls, the research specifically looked at negative controls, both cultural and procedural.

<sup>2</sup> All expressions given as examples have been changed to protect anonymity, but efforts were made to preserve their meaning.



**Fig. 1.** The revised framework. Figure illustrates the revised version of Simons' framework proposed in light of the paper's analysis.

### 3. Ambiguities in the literature

In order to improve Simons' LOC framework, ambiguities caused by ill-defined concepts need to be identified and analysed. To disentangle these ambiguities, the framework will be deconstructed using a macro to micro approach in the sense that the positive/negative dimensions of controls (a general concept) will be explored first, followed by an analysis of the levers of control (sets of controls). Finally, types of controls that constitute the levers will be discussed. Prior literature and examples from the case studies will be used to explain ambiguity and to suggest potential improvements.

Since these ambiguities are often intertwined, this discussion represents a challenge. To help the reader cope with the complexity of the argument, at the beginning of each subsection, ambiguities and propositions will be briefly presented before being explained in more detail. Moreover, the revised framework is presented *ex ante* to provide the reader with a visual aid to act as a further guide through subsequent sections (see Fig. 1).

#### 3.1. Positive and negative controls

In this section, we argue that the concept of positive and negative controls has several dimensions which need to be differentiated. First, we mention that the dual role of controls should not be confused with the quality of a control, the latter being an assessment of whether a control

is good or bad, rather than a description of the different roles a control can play. It follows that since the positive and negative labels used by Simons are not neutral, we use them to describe the perception of control and use the enabling and constraining labels to describe the dual role of control. We also distinguish between the dual role of controls and the objective of a control (i.e. manage performance vs. manage compliance). Finally, while Simons argues that compliance controls are managed using only punishment (and not reward), based on examples from the field, we argue that both objectives of control can be linked to reward and to punishment. The analysis supporting these propositions will now be presented.

##### 3.1.1. Ambiguity regarding positive/negative controls and the dual role of controls

According to Simons (1995), the notion of positive and negative controls covers several aspects where ideas of motivation, reward, creativity and learning are set against ideas of coercion, punishment, prescription and control. He also mentions that the basis of this dichotomy is the idea that some controls promote creativity, while others ensure predictability, and neither role is bad. These definitions, however, are very broad and general. The subsequent literature is of no help in refining them, because Simons' positive and negative dimensions of control have mainly remained unexplored (although Ferreira and Otley (2009, pp. 278–279) briefly mention the positive and negative forces in control systems). In order to clarify the notion of

positive and negative controls, other similar concepts from the literature need to be analysed.

The notion of positive/negative controls can be linked to a more general concept labelled the dual role of controls which is gaining importance in the literature (Ahrens and Chapman, 2004; Demski and Feltham, 1976; Mundy, 2010; Warren, 1960; Wouters and Wilderom, 2008). The dual role of controls is predominately described as competing roles that create dynamic tension in an organisation (Mundy, 2010). As Mundy explains, “MCS are used to exert control over the attainment of organisational goals, and also to enable employees to search for opportunities and solve problems” (2010, p. 499). However, in the literature, the dual role of controls is sometimes confused with the concept of quality of control where, for example, coercive controls are described as “bad” and enabling controls are described as “good” (Adler and Borys, 1996). The quality of controls refers to whether a control is effective, efficient, economical, etc. (or not) and whether it has unwanted consequences such as slowing down innovation, causing dysfunctional behaviour, etc. (or not). This is different to the definition of the dual role described above where both roles are seen as desirable.

As Perrow explains, “only some rules are bores. The good, effective rules are rarely noticed; the bad ones stand out” (1986, p. 24). A number of frameworks are explicitly based on the idea that some controls are good and others are bad. For example, underlying Adler and Borys’ paper is the desire to “develop a useful theory of how employees distinguish good from bad rules” (1996, p. 66) using the enabling and coercive terms to distinguish the two. For them, coercive controls (bad controls) are meant to “enforce compliance from employees assumed to be recalcitrant or irresponsible” (Adler and Borys, 1996, p. 62) and enabling controls (good controls) increase technical efficiency through the writing of best practices (Adler and Borys, 1996). Similarly, for Ahrens and Chapman (2004), coercive controls are associated with bad outcomes (mistrust, resentment, robotic management) and enabling controls are associated with positive outcomes (flexibility). Judgement as to what is desirable and what is not is also present in Hopwood’s (1972, 1973) writings on what is now called the flexible and rigid use of controls. For example, Hopwood considered the flexible approach as “the more judicious use” of controls (1973, p. 197) and argues that managers must “use the accounting data in a manner consistent with a Profit Conscious style of evaluation rather than a Budget Constrained style” (1972, p. 174).

Examples from the field can illustrate enabling and coercive controls defined as a representation of the quality of controls. For example, some managers and their subordinates considered SOX compliance programmes as an opportunity to improve the effectiveness and efficiency of control packages illustrating an enabling control (i.e. interpreted as good control). Employees explained how taking the time to write down procedures in the form of best practices had actually helped them save time and perform better. By saving time, they were able to accomplish all of their weekly tasks more easily and felt liberated. Wagner and Dittmar (2006) witnessed the same positive impact in some organisations that used SOX as a way to improve

process effectiveness and efficiency as opposed to simply ensuring compliance. On the other hand, employees described other controls as useless because they were only ensuring the presence of a signature and therefore only gave, as they said, the illusion of control. This illustrates coercive controls (i.e. interpreted as bad controls).

There are therefore two distinct aspects at play: the dual role of controls per se and the quality of controls (good or bad). Failure to recognise this distinction can cause confusion. An example of this can be found in Mundy (2010) where the author sometimes analyses the dual role of controls without judging the quality of controls per se (using the labels “enabling” and “controlling”) and sometimes discusses whether controls are “good” or “bad” (using the labels “enabling” and “coercive”), but without explicitly acknowledging the difference between the two types of analysis. Indeed, for most of the paper, Mundy (2010) presents the two roles of controls as complementary with both being useful. This is apparent in the analysis of her first case (Case 1). When used this way, the author is closer to Simons’ definition of positive and negative controls than concepts from Adler and Borys (1996) who argue that coercive controls are bad. However, in her second case (Case 2), Mundy (2010) describes an example of coercive controls as defined by Adler and Borys (1996) (i.e. bad controls) and as such, describes a phenomenon that is different from her first case.

To improve the definition of positive and negative controls, these two dimensions need to be separated. While the dual role of control is a design attribute of MCS, the quality of control is not. Rather, it is an assessment of the control’s “performance” and is primarily a matter for empirical study. To avoid this ambiguity:

**The revised framework focuses on the dual role of controls and excludes evaluation of the quality of controls (good/bad).**

If the notion of the quality of control is excluded from the positive and negative dimensions of control, then it follows that these labels are not appropriate to describe the dual role of controls. Indeed, on the one hand, controls themselves are neutral. As explained by Hopwood: “Accounting data do not in of themselves pose a threat to members of an organization, and their imperfections need not necessarily be seen as unjust when they are used in performance evaluation” (1972, p. 174). Similar ideas were mentioned by one of the companies’ presidents who argued that the word “control” on its own was neither positive nor negative. On the other hand, the positive and negative labels have a good vs. bad connotation. For example, Marginson and Ogden (2005) use the positive and negative labels in this way when they mention the negative aspects of budgeting (constrain innovation and learning and lead to dysfunctional behaviour) and the positive role budgets could play (comfort in the presence of role ambiguity). Examples from the field can also illustrate this interpretation of positive and negative terms. Indeed, the term “negative controls” was sometimes interpreted by employees as bad controls in the sense that some controls were intrusive, ineffective, inefficient, etc. while the term “positive control” was sometimes interpreted as good in the sense that some controls offered adequate control, were

invisible and provided structure. Someone even compared bureaucracies to sugar, explaining that just as there are good and bad types of sugars, there are good and bad types of bureaucracy.

In the literature, other labels have been used to describe to dual role of controls, such as enabling/coercive (Ahrens and Chapman, 2004) and enabling/controlling (Mundy, 2010). As mentioned above, the term “coercive” has also been associated with “bad” controls. As for “controlling”, it can cause confusion, when discussing controls, to describe them as controlling. Therefore, the term “constraining”, which has also been used by Mundy (2010), will be used instead of “coercive” or “controlling”. As such, enabling controls promote creativity and flexibility, while constraining controls reduce options and thus increase predictability. Therefore, although Simons (1995) used the positive and negative terms for the dual role of controls:

**The revised framework uses the labels “enabling” and “constraining” to describe the dual role of controls.**

Finally, some authors implicitly associate the enabling and constraining roles of controls with diagnostic and interactive controls (Ahrens and Chapman, 2004; Ferreira and Otley, 2009) which could infer that the two sets of concepts are the same. However, Mundy (2010) provides examples from the field which illustrate each of these two levers of control being used in enabling and constraining ways. Moreover, Adler and Chen (2011) also theoretically suggest that levers of control could be used in enabling and constraining ways. Hence, there is another dimension in Simons' (1995) framework that cannot be described using the four levers of control. This supports the importance of considering the dual role of controls separately. Therefore:

**The revised framework explicitly takes into account the enabling and constraining roles of controls.**

### 3.1.2. *Ambiguity between dual role of controls and perception of controls*

There is another ambiguity in the literature on the dual role of controls that arises from the failure to acknowledge the difference between managerial intentions for controls and employee perceptions of controls. Managerial intentions (e.g.: enabling/constraining) refers to what managers are trying to achieve by implementing a control and is a design attribute of the MCS. Employee perceptions, however, refers to employees' interpretation of what the control is for and, therefore, is not a design attribute of the MCS.

The concept of perception of controls has been implicitly present in the literature for several decades. Hopwood's studies (1972, 1973) focus on the perception of evaluative style since questionnaires asked subordinates what evaluative style they perceived their manager were using (Otley and Fakiolas, 2000). Simons mentions that: “Organizational participants can view boundary systems as either constraining or liberating” (1995, p. 53). Wouters and Wilderom (2008) investigate the development process that may lead to performance measurement systems (PMS) being perceived as enabling. Ahrens and Chapman argue that “accounting systems and their implications [are] subject to a continuous process of interpretation and re-interpretation” (2004, p. 166). These authors are concerned

with employee perceptions of controls rather than managerial intentions when implementing controls.

The concept of perception implies that controls can be perceived differently by different employees (Scott, 2001). Examples from the field can help illustrate this. Newly implemented SOX-related controls were generally perceived as restrictive since their main purpose was to prevent fraud and therefore to protect value. However, some employees explained that knowing someone else would review their work encouraged them to be more conscientious. Furthermore, controls implemented in the organisation that already had many procedural controls were generally perceived more positively than those implemented in the organisation that had less in place. Finally, controls implemented in departments accustomed to them (e.g.: R&D<sup>3</sup>) were perceived more positively than controls implemented in departments with less (e.g.: marketing).

Although the distinction between intention and perception is implicitly present in the literature, it is not explicitly mentioned. However, to refine the definition of the dual role of controls, this distinction needs to be explicitly addressed. Hence:

**The revised framework distinguishes between managerial intentions and employee perceptions.**

Perception of controls is different to the quality of controls. While quality of controls will influence perception, the latter can be influenced by other elements, such as the presentation of controls. Presentation acts as a bridge between managerial intentions and employee perceptions and can influence how controls are perceived. For example, Total Quality Management programmes and SOX compliance programmes are composed of similar controls such as flow charts and exception reports. Yet, because these two control programmes are presented differently and in different contexts, the former is seen as a way to improve performance (Adler and Borys, 1996), while the latter is seen as a way to ensure compliance to laws.

An example from the field can help illustrate differences between intention and perception, based on the way the control is presented. Indeed, in order to solve an inventory control issue, one of the organisations introduced a stock training programme with the intention of controlling the branches' inventory. However, because there was a culture of “no red tape” in this organisation, the “control” was presented as a way to increase managers' bonuses and was therefore perceived by employees as a way to improve performance. In this case, the difference between intention and perception was due to the presentation of controls. Therefore:

**The revised framework accounts for the presentation of controls.**

Finally, employees will have emotional responses to controls. For example, Merchant (1985) argues that controls such as pre-action reviews can produce negative attitudes. Adler and Borys argue that employee attitudes are positive when formalisation enables them “to bet-

<sup>3</sup> In the chemical industry, R&D departments have to follow strict procedures to ensure health and safety.



ter master their tasks”, and will be negative when it “functions as a means by which management attempts to coerce employees’ effort and compliance” (1996, p. 61). Finally, Adler and Chen (2011) discuss employees’ positive and negative evaluative responses (or affect) to controls.

As seen above, when describing employees’ emotional response to controls, the positive and negative labels are often used in the literature. Therefore, while these labels were not suitable for describing the dual role of controls, they are appropriate for describing employee attitudes towards control. However, there is also the possibility that the attitudes are neutral, in other words that the employee has neither a positive nor a negative attitude towards the control. As such:

**The revised framework uses the positive and negative labels to describe employee attitudes towards control<sup>4</sup> and acknowledges the fact that these attitudes can be neutral.**

### 3.1.3. *Ambiguity between the dual role of controls and objectives of controls*

Other authors that refer to the dual role of controls do so by distinguishing what should or should not be done. For example, Anthony states that “The management control process in part consists of inducing the people in an organization to do certain things and to refrain from doing others” (1965, p. 245). Merchant also suggests that some controls inform employees where to focus their efforts and motivate them to produce the desired results, while arguing that others are restrictive and involve “making it impossible, or at least more difficult, for people to do things that should not be done” (1985, p. 29). Both these authors describe the dual role of controls in terms of “do this vs. don’t do that”.

This could be described in terms of controlling for performance (do this) and compliance (do not do that). Cunningham (2004) refers to the positive and negative aims of controls in such a way and defines a positive control as a one the purpose of which is the achievement of organisational objectives, whereas a negative control is one that ensures compliance with governmental policies.

“Compliance controls are primarily intended to meet governmental policies, without that first priority of achieving corporate objectives. Though particular governmental policies may be written in positive terms, from the corporation’s viewpoint the goals are not principally about meeting its objectives (a primary, positive aspiration) but about meeting the government’s objectives with the corporation’s principal interest being to avoid violating laws or exposing itself to liability (a negative objective)” (Cunningham, 2004, p. 275).

This is also present in the business literature. For example, the definition of internal control, as proposed by the COSO report (Committee of Sponsoring Organizations of the Treadway Commission, 1994), acknowledges the different roles of controls by identifying three main objec-

tives for internal control. The first objective, effectiveness and efficiency of operations, is linked to performance. The other two objectives, reliability of financial reporting and compliance with applicable laws and regulations, are linked to protecting value and ensuring compliance. The CIMA framework on Enterprise Governance also recognises the required balance between conformance and performance or accountability and value creation (CIMA and IFAC, 2004).

While positive and negative labels refer to emotional responses to controls and enabling and constraining labels refer to the dual role of controls, performance and compliance labels refer to their objectives, whether it is the achievement of organisational goals and the creation of value, or, the following of rules and the preservation of value. As such:

**The revised framework distinguishes the two main objectives of controls (i.e. performance and compliance).**

Finally, an ambiguity regarding the objectives of controls needs to be analysed, that of reward and punishment. Simons argues that organisations reward performance, punish non-performance and punish non-compliance, but do not reward compliance. However, examples from the field illustrate that this is not the case. Indeed, two out of our three organisations included compliance objectives in their performance appraisal and rewarded employees on the attainment of both compliance and performance objectives. Hence:

**The revised framework acknowledges the fact that managers can decide to reward and/or punish performance and/or compliance.**

To summarise, the discussion above analysed the ambiguities regarding the positive and negative forces present in Simons’ (1995) framework. In order to improve the definition of this dimension of controls, several propositions were made. First, one aspect of the positive/negative dimension is illustrated by the dual role of controls. However, the dual role of controls (enabling/constraining) does not refer to the quality of controls (good/bad). Second, employee perceptions of controls have to be considered separately as they could be different from managerial intentions. Third, employee attitudes towards controls can be positive, neutral or negative. Fourth, to account for differences between the intention and perception of controls, the presentation of controls has to be considered. Fifth, objectives of controls are performance or compliance. Sixth, rewards and punishments can be associated with both objectives of controls.

Going back to Simons’ broad definition, we can now associate most of the ideas encompassed in the positive and negative dimensions of controls in the different propositions we have made: tensions between motivation/creativity and coercion/prescription/predictability are included in the enabling/constraining role of controls and reward/punishment are components of their own in the revised framework. As for learning and controlling for variances (i.e. interactive and diagnostic), which were also part of Simons’ broad definition for positive and negative controls, they will be discussed in the next section which will analyse ambiguities regarding the levers of control.

<sup>4</sup> However, in the remainder of the paper, quotes from other authors or interviewees will keep the original labels.

### 3.2. Levers of control

There are several ambiguities with regard to the levers of control, mainly due to their vague definitions. In this section we argue that the concept of interactive controls should be divided into two: strategic performance control systems and the interactive use of controls. Based on this, we suggest that diagnostic and interactive controls should not be considered as control systems as such, but rather as descriptions of how controls can be used. Next, we argue that boundary control systems operate at two different organisational levels: strategic boundaries and business conduct boundaries (Simons, 1995). Two important characteristics of control systems emerge from the analysis of these ambiguities: objectives of control (performance and compliance) and organisational level (operational and strategic). Finally, it is argued that belief and boundary control systems do not operate at the same level of analysis. Indeed, beliefs are a type of control that can be used to manage both performance and compliance, whereas boundaries are a group of controls of different types (social/beliefs and technical) that are specifically used to manage compliance. The analysis supporting these propositions will now be presented.

#### 3.2.1. Ambiguity regarding diagnostic and interactive controls

Diagnostic and interactive controls have already been described as ambiguous concepts in the literature, especially interactive controls (Bisbe et al., 2007; Ferreira and Otley, 2009). Some authors have attempted to provide a clearer definition of interactive controls, based on Simons' writings. However, there is no consensus regarding the appropriate improvement. On the one hand, Bisbe et al. (2007) propose a more inclusive definition with five components: intensive use by superiors, intensive use by subordinates, face-to-face communication, focus on strategic uncertainty and non-invasive management style. In order to be considered interactive, controls have to include all five components. On the other hand, Ferreira and Otley (2009) propose a less inclusive definition and suggest that the concept should be divided in two. According to the authors, Simons' definition of interactive control encompasses two distinct concepts that do not operate at the same level. The first concept is the idea of the use of controls that applies to any control in the organisation. This is concerned with how intensively managers use controls and is labelled 'interactive use of controls' following Simons (1995). The second concept is concerned with the adequacy of the strategy and is a set of controls that monitors whether the organisation has the right strategy in place. The authors label this concept 'strategic validity controls'.

According to theories of concept definition, concepts should be clear and distinct, meaning that they should be different from other concepts and that there should not be any overlapping (Morse et al., 1996a). Moreover, there should not be competing definitions (Morse et al., 1996b). Based on this, the option of dividing the interactive concept into two distinct concepts seems more appropriate.

On the one hand, the intensity of use of controls, which will retain the interactive label, encompasses three of the components suggested by Bisbe et al. (2007): intensive use by superiors, intensive use by subordinates and face-to-face communication. Interactive controls facilitate and promote communication and focus attention (Adler and Chen, 2011). They also promote learning (Ferreira and Otley, 2009). Following this, diagnostic controls represent controls that are only looked at when deviances from established targets are observed. On the other hand, strategic validity controls focus on strategic uncertainty and inform managers of the adequacy of their strategy. Therefore, as discussed above, the objective of these controls is to ensure the performance of the strategy. As for the non-invasive management style component, the last component established by Bisbe et al. (2007), it can be included in the enabling role of control discussed previously. Based on this:

#### **The revised framework accounts for strategic performance controls and interactive use of controls separately.**

It follows that if interactive and diagnostic controls focus solely on the intensity of use of controls, they are not control systems per se, rather, they are descriptions of how managers use controls. Nevertheless, this view of interactive and diagnostic controls is in line with Simons' writings (1995, p. 180). Indeed, he classifies belief, boundary and performance measurement systems as design attributes of MCS, and classifies interactive and diagnostic controls as attention patterns for performance measurement systems. Other authors have also presented the levers in such a way. For example, Marginson (2002) separates MCS (belief and boundary systems, administrative controls and performance measurement systems) from diagnostic and interactive uses of controls and Tuomela (2005) acknowledges that strategic performance controls can be used diagnostically and interactively.

To illustrate this, we can use the example of an organisation that monitors its strategy's validity with a set of indicators monitoring changes in the external environment that could potentially invalidate the current strategy (e.g.: merger of two main competitors, changes in environmental law, introduction of new technology, etc.). This control could be used interactively (discussed intensively during meetings to direct managers' attention, with a focus on learning from incremental changes in the external environment and thus adapting the strategy) or diagnostically (looked at during monthly meetings only if notable changes in the external environment are detected).

Moreover, examples from the field support the idea that any control could be used interactively or diagnostically (rather than just performance measurement systems). Indeed, one of the organisations was in the process of incorporating the element of compliance in its culture. During that process, new procedures were implemented to ensure compliance and values of integrity and transparency were discussed intensively at each meeting to focus managers' attention and to promote learning (interactive use). However, once the compliance element was incorporated in the culture, the intensity with which these controls were discussed was reduced and the controls were then used in a diagnostic way.

Since managers decide how controls will be used, diagnostic and interactive uses of controls are part of managerial intentions. Therefore:

**The revised framework does not consider diagnostic and interactive controls as control systems in their own right, but rather as a description of how control systems are used.**

### 3.2.2. *Ambiguity between objectives of controls and organisational levels*

While the labels interactive and diagnostic are no longer associated with types of control systems, but rather with use of controls, there are still overall control systems in action. The previous analysis identified two objectives of controls: performance and compliance. Control systems are sets of controls based on these two overall objectives.

Boundary control systems, already in Simons' original framework, are concerned with compliance. However, Simons (1995) describes two types of boundaries: business conduct boundaries and strategic boundaries. These two types of boundaries do not operate at the same organisational level. On the one hand, strategic boundaries impose barriers to strategic opportunity search. This can be done by explicitly specifying inappropriate domains for search opportunities (constraining role) or by formulating a strategy that indicates where the organisation is headed, which implicitly gives information as to where the organisation is not heading (enabling role). On the other hand, business conduct boundaries are concerned with operations. They are not concerned with strategic search, but rather with proscribing certain behaviours regarding day-to-day activities (conflict of interest, fraud and other actions that contravene laws). In this sense, these two types of boundaries illustrate strategic and operational levels of the organisation.

The objective of performance can also be separated into two organisational levels. Strategic performance controls discussed in the previous ambiguity, ensure that the strategy in place is appropriate hence it is concerned with the strategy's performance. This is similar to what Tuomela (2005) describes as strategic performance measurement systems. At the operational level, performance control systems are concerned with critical performance variables to ensure strategy will materialise.

Adding a distinction between these two organisational levels answers a criticism of Simons' framework made by Ferreira and Otley (2009) who argue that it focuses too much on top-management. Hence:

**The revised framework incorporates four types of control system: operational boundary, strategic boundary, operational performance and strategic performance control systems.**

### 3.2.3. *Ambiguity regarding belief and boundary control systems*

In the literature, boundary and belief control systems are only defined in general terms (Ahrens and Chapman, 2004). As a result, there are some ambiguities regarding the definition of these concepts. For example, it is not clear what types of controls constitute boundary control systems. In the literature, controls are often classified as either

social (i.e. values and norms) or technical (i.e. procedures, rules). Some authors define boundary controls as social control (Nixon and Burns, 2005; Widener, 2006), others as technical control (Mundy, 2010), while some mention that they are both (Adler and Chen, 2011; Marginson, 2002; Simons, 1995).

Examples from the literature support the idea that they can be both. For example, on the one hand, Mundy includes expenditure limits (technical) in boundary systems (2010, p. 519). On the other hand, there are several examples in her paper of values (social) being used as a boundary (for example, integrity and honesty (2010, p. 506)). She also explains that, in her case study, values are "The main protection against a purely short-term attitude" (2010, p. 513). Examples from the field also illustrate that boundary controls can be both. Technical boundary controls can be illustrated by organisations having controls such as authorisation procedures and segregation of duties to restrict the employees' ability to do something undesirable. Social boundary controls can be illustrated by expressions such as "The Newspaper Test" which describes how managers in one organisation asked themselves whether they could defend their decisions if they were made public (hence the name "Newspaper Test"). The expression restricted employees' search for business opportunities by keeping in mind public opinion and was therefore a boundary control. Hence, boundaries can be either social (i.e. based on beliefs) or technical.

Distinguishing between types of controls is a concern that is present in the literature (Abernethy and Chua, 1996; Alvesson and Kärreman, 2004; Bartunek, 1984; Otley, 1980), but when this distinction is omitted, it can lead to concepts being ill-defined. Adler and Borys (1996) explicitly addressed this issue in their paper by designing a 2 × 2 matrix that takes into account two characteristics of a control system: the degree of formalisation (high or low presence of rules) and the type of formalisation (enabling or coercive) (which is implicitly an assessment of the quality of controls, as discussed earlier). Hence, the enabling/coercive dichotomy is not at the same level of analysis as the organic/mechanistic dichotomy. While the former is concerned with the type of formalisation, the latter is a mix of types of controls in place (technical vs. social) and types of formalisation (enabling or coercive). According to these authors, distinguishing between the two characteristics helps to explain conflicting results regarding the impact of bureaucracies on creativity. This is therefore an important distinction that needs to be made.

While there is an ambiguity regarding the types of boundary controls, this ambiguity is not present for belief controls. Indeed, these controls are only based on core values (Ferreira and Otley, 2009; Marginson, 2002; Mundy, 2010; Simons, 1995; Widener, 2006). However, there is an ambiguity regarding the objective of belief controls. Belief systems are described by Simons (1995) as "positive" controls. Examples from the field can help illustrate that some beliefs can indeed be used to promote performance. For example, one of the organisations uses the expression "Being #1" to remind employees that the company's objective is to be number one in terms of



sales, market share, employer of choice, etc. However, as mentioned above, beliefs such as values can be used as boundaries (integrity, honesty, transparency, etc.). In fact, in one organisation, such values are the foundations for the company's code of conduct which, according to [Simons \(1995\)](#), is part of the boundary control systems. Hence, organisational beliefs can also be part of organisational boundaries.

Therefore, there is an ambiguity regarding the relationship between belief and boundary control systems and this ambiguity comes from the fact that belief and boundary systems operate at different levels of analysis. Indeed, on the one hand, belief systems can control both performance and compliance, while boundary systems are mainly concerned with compliance. On the other hand, boundary controls can be both social and technical, while belief controls are primarily social. This is implicitly acknowledged by [Widener \(2006\)](#) who argues that belief systems play a role on all three other levers of control.

To eliminate this ambiguity:

**The revised framework considers that belief and boundary controls describe different characteristic of controls (types vs. objectives of controls).**

It follows that belief controls are not an overall control system per se. Rather, they represent a type of control that can be used in different control systems. Hence, each control system identified previously (strategic performance, operational performance, strategic boundaries and operational boundaries) can be constituted of social and/or technical controls. Previous examples already identified social controls for performance and compliance and technical controls for compliance. Examples from the field can also illustrate technical controls for performance. For example, organisations had procedures detailing performance reviews and had bonus plans based on individual and organisational performance. Therefore:

**The revised framework accounts for different types of controls (social and technical) which are part of different control systems (strategic performance, operational performance, strategic boundaries and operational boundaries).**

Finally, it appears, based on the discussion thus far, that controls can have both performance and compliance aspects within them and therefore that a single control can be used for different purposes. While [Simons \(1995\)](#) does acknowledge this in regard to diagnostic and interactive uses, examples from the field illustrate that this can apply to any control. For example, one of the organisations' motto "being successful ethically" (a social control) can be part of all four controls systems. Indeed, it inspires employees to be the best at what they do (operational performance), in an ethical manner (business conduct boundary), prohibits employees from searching for unethical strategic opportunities (strategic boundary) and reminds managers that if the organisation is not successful, there might be a problem with the strategy (strategic performance).

This supports the previously mentioned idea that controls themselves are neutral. [Simons \(1995\)](#) indirectly recognised this when he explained that strategy gives a clear indication of both where a company is heading and where it does not wish to go. Based on this:

**The revised framework acknowledges the fact that a specific control can have more than one objective (performance and compliance) and can be used at different organisational levels (operational and strategic).**

To summarise, the discussion above analysed the ambiguities regarding the levers of control presented in [Simons' \(1995\)](#) framework in the form of interactive, diagnostic, belief and boundary control systems. In order to improve the definition of these control systems, several propositions were made. First, the concept of interactive control is divided in two: intensity of use of controls and strategic performance controls. Second, diagnostic and interactive labels represent the use of controls and therefore are not control systems per se. Third, based on objectives of controls (performance or compliance) and organisational levels (operational or strategic), four control systems are proposed (operational and strategic performance control systems and operational and strategic boundary control systems). Fourth, belief controls are not a control system per se. Rather, beliefs are social controls which, alongside technical controls, are components of all four control systems. Fifth, synergies are possible between control systems since controls can be used for more than one objective and at more than one organisational level.

While Section 3 has identified ambiguities related to [Simons' \(1995\)](#) framework and proposed improvements to eliminate these ambiguities, the next section presents the resulting revised framework.

#### 4. Revised framework

Based on the analysis presented above, a revised version of [Simons' framework](#) will now be presented. The proposed framework incorporates the suggested improvements to reduce ambiguity and improve concept definitions. After presenting this framework, the limitations of the paper and future research avenues will be discussed.

##### 4.1. Elements of the framework

Section 3 deconstructed [Simons' original framework](#) by analysing the ambiguities regarding the different concepts using a macro to micro approach. Section 4.1 will now reconstruct the revised framework using a micro to macro approach, meaning that types of controls will be discussed first. Then control systems will be presented, followed by the different managerial choices regarding these controls. Finally, elements which are external to managerial intention (presentation of controls and employees' response to controls) will be considered. The revised framework will integrate the propositions presented in Section 3.

At the core of the framework are the individual controls available to managers. This is the first level. Managers have at their disposition two types of controls: social and technical controls. Social controls, defined as controls that appeal "to the emotional, non-rational, affective elements within employees" ([Ray, 1986, p. 288](#)), are constituted of core values, beliefs, norms ([Alvesson and Kärreman, 2004; Simons, 1995](#)) and symbols ([Malmi and Brown, 2008; Schein, 1992](#)). As [Scott \(2001\)](#) explains, although cultural symbols are internalised and subjective, external symbols, such as cultural artefacts, are observable. Hence, social controls

represent the manageable aspect of organisational culture (Malmi and Brown, 2008; Merchant and Van der Stede, 2003). Technical controls, defined as controls that specify how tasks are to be performed (Perrow, 1986) and how individuals and groups are organised (Malmi and Brown, 2008), are based on rules, procedures and standards. These controls govern day-to-day activities. As for goal settings, output controls and cybernetic controls, some studies have included them in technical controls (Alvesson and Karreman, 2004; Macintosh, 1994; Merchant, 1985), while others have presented them separately (Malmi and Brown, 2008). In this paper, they are considered as part of technical controls, because their execution is often described through written procedures.

The degree of formalisation of an organisation, as defined by Adler and Borys (1996), is based on the proportion of social and technical controls that comprise control systems. According to Chenhall and Morris “entrepreneurial organizations are likely to de-emphasize formal accounting control while conservative entities place a heavier reliance on formal accounting procedures” (1995, p. 487). While it is possible to simply list the technical and social controls in place to assess the level of formalisation of an organisation, prior studies suggest that the level of interaction between the two types of control is of importance and requires more attention. For example, according to Alvesson and Karreman (2004), social and technical controls are tied rather than being substitutes as was suggested by Ouchi (1979, 1980). Indeed, on the one hand, the authors find that technical controls communicate ideals and have a strong symbolical content (social aspect). As they explained, “Technocratic forms of control work efficiently as hammering out vehicles for messages that find a receptive audience in the selves gradually formed by the control [...]” (2004, p. 442). On the other hand, they also find that technical controls are influenced by the organisation’s beliefs and norms of behaviour. Moreover, Abernethy and Chua (1996) find that technical controls can help rationalise social components of the control package, while Bartunek (1984) describes how social controls influence technical controls. Hence, the two types of controls are presented in Fig. 1 in a single box to emphasise the fact that individual technical and social controls are inter-connected to form a package of controls (Otley, 1980).

The second level of the framework is comprised of different control systems that have a specific objective. Management control systems are defined as “systems, rules, practices, values and other activities management put in place in order to direct employee behaviour” (Malmi and Brown, 2008, p. 290). As such the second level is closely related to the first level of the framework since the latter constitutes the former (the four control systems being sets of social and technical controls). This is represented in Fig. 1 by the four arrows connecting the two levels.

Two control systems are concerned with performance. The operational performance control system focuses on critical performance variables at an operational level. This control system is defined as the sets of controls overseeing what the organisation must do well to achieve its strategy (Simons, 1995). In this sense, they include feedback systems that Simons included in diagnostic controls.

However, the operational performance control system includes more than cybernetic controls. It also includes values and organisational symbols that promote organisational performance, and procedures such as appraisal processes. Since this control system is concerned with performance at an operational level, performance targets focus on operational performance (e.g.: efficiency ratios).

At the strategic level, the strategic performance control system focuses on strategic uncertainties. This control system is defined as the sets of controls that monitor whether the organisation has the proper strategy to ensure the attainment of its vision. Hence, the role of this control system is “to signal the need to review strategies” (Ferreira and Otley, 2009, p. 274). For example, mission statements, i.e. social controls, provide information as to what the strategy should be accomplishing. If the organisation’s performance is not in line with the vision, although the strategy is implemented properly, this could be a sign that the strategy is not appropriate. Procedures detailing the monitoring of environmental shock that could invalidate the strategy are also included in this set of controls. In this case, performance targets will focus on strategic performance such as market shares (as opposed to operational performance as described above).

The other two control systems are concerned with compliance. These represent Simons’ (1995) operational (or business conduct) boundaries and strategic boundaries. These boundary systems are based on risks to be avoided. The operational boundary control system is defined as the sets of controls that inform employees of the limits imposed on their actions. These sets of controls are concerned with setting limits at the operational level of the organisation. These limits can be communicated through social controls such as values and codes of conduct or through rules and procedures. They communicate organisational limits or limits established by the industry or society in which the organisation evolves (for more detail, see Simons (1995, pp. 42–47)).

Strategic boundaries are based on opportunity searches. This control system is defined as the sets of controls that inform employees of the acceptable domain of opportunity-seeking. These sets of controls are concerned with setting limits at the strategic level of the organisation. For example, one of the organisations had a traffic light system in its R&D department informing employees whether they should go ahead with a project (green), put the project on hold (yellow) or abandon the project (red). Organisational mottos can also serve as strategic boundaries. For example, an organisation used the expression “5-20-100” to inform employees that an initiative will be acceptable if it means the organisation will be ranked amongst the top five of its country, the top 20 in its continent and top 100 in the world.

Similar to the first level of the framework, these control systems do not operate separately from each other. Indeed, as discussed earlier, since controls are neutral, synergy between control systems is possible (this is represented in Fig. 1 by the line connecting all four control systems). For example, according to Tuomela (2005), performance controls can act as boundaries and according to Adler and Chen (2011), cybernetic controls can inform on organisational

goals and their achievement (performance) as well as promote accountability (compliance). This synergy is also highlighted in the professional literature such as the CIMA framework on Enterprise Governance. As explained by the authors, “although conformance feeds directly to accountability and performance to value creation, conformance can also feed to value creation while performance can feed to assurance” (CIMA and IFAC, 2004, p. 11). Examples from the field illustrate this. For example, one of the organisations managed the performance of each unit as a way to identify theft (performance management to achieve conformance/assurance) and another was compliant with the industry’s guidelines and best practices as a way of having a competitive advantage and saving costs (compliance management to achieve performance).

This implies that opposing objectives can coexist. To understand this, we need to distinguish oppositions from contradictions. A contradiction occurs when two concepts cannot coexist, because they are contrary to each other (i.e. two poles on a continuum). Contradicting concepts are mutually exclusive. Opposition is not necessarily a contradiction. It is possible to have two concepts that can be in opposition, yet coexist. These two concepts are on two different continua and therefore are not mutually exclusive. These ideas have been discussed by Chinese (Fung, 1997), French (de Tarde, 1897) and Greek (Aristotle, 2004) philosophers. If we apply this to the objectives of control, it then implies that the opposite of “managing performance” is not “managing conformance”. Rather, the opposite of “managing performance” is “not managing performance” and the opposite of “managing compliance” is “not managing conformance”. Hence, each control can manage performance and/or compliance to different degrees. The objectives of controls (performance and compliance) are not mutually exclusive; they are opposing forces that coexist to create tension.

The third level of the framework represents managerial intentions. It emphasises the different choices managers can make regarding the control systems. Managers can decide which controls will have the main focus of promoting discussion and learning (interactive use) and which will be looked at only if there is some deviance (diagnostic use). Managers can also decide whether the control will be used in a way that promotes creativity (enabling) or in a way that ensures predictability (constraining). Finally, they can decide what will be the consequences (i.e. rewards/punishments) of the achievement (or non-achievement) of performance and compliance requirements.

Choices included in managerial intentions are applicable to each control within the control systems. As illustrated previously, rewards are applicable to performance and compliance objectives of control, interactive use of controls is applicable to both social and technical controls and constraining and enabling roles are applicable to compliance-related and performance-related controls. For example, the “Newspaper Test” is a control the purpose of which is compliance, because it ensures managers will respect the law and business codes of conduct, but that has an enabling role because it allows managers to be creative in their search for business opportunities. Moreover,

these choices do not have to be made at a MCS level since the use, the role and the consequence can differ from one control system to another, and from one control to another within a control system. Here again, just as with the different objectives of control, tension can be created through the different choices made (Mundy, 2010).

Once control systems are designed, managers can decide how to present controls. Decisions as to how to communicate with employees have to be made, such as the channels used (emails, official documents, video presentation, in-person presentation, face-to-face meetings) and the message content itself (information to provide regarding the control, level of language used, etc.) (Berlo, 1960). Therefore, the presentation of a control can be different from the overall intention. This is especially relevant for controls that have more than one objective. Indeed, if a control has more than one purpose, the presentation of the control is likely to focus on only one of these purposes rather than on all of them. In these instances, it is not that the presentation differs from the intention, but rather that the presentation excludes some elements of the control. This was illustrated earlier by the new stock control programme of an organisation that was only presented as a performance management tool and did not communicate the compliance aspect of the control. This divergence between intention and presentation, which in turn influences perception, could be intentional by managers to retain some level of flexibility as to how they use controls.

The design of control systems (the three levels presented above) and the presentation of controls represent the elements of the framework that managers have an influence on. However, the framework also includes employee perceptions, which is external to the design and presentation of control systems. Indeed, while the design of control systems and the way they are presented do influence how controls are perceived (this is represented by an arrow in Fig. 1), employees’ individual attributes such as the socio-cultural environment in which employees evolve, also play a role, as well as the level of knowledge employees have regarding controls (Berlo, 1960). Finally, perception of controls will determine employee attitudes towards controls, i.e. whether the attitude is positive, neutral or negative. The framework includes managers (intention) and employees (perception) to emphasise the fact that these two groups of individuals might not appraise controls in the same way.

The revised framework includes all elements from Simons’ (1995) original LOC framework, albeit sometimes in a different form.<sup>5</sup> It also encompasses modifications already suggested in the literature. Nevertheless, it still has some limitations which are discussed further in the next section.

#### 4.2. Limitations and avenues for future research

This paper presents a revised version of Simons’ framework that improves on already well known concepts

<sup>5</sup> Appendix A provides a summarised and illustrated explanation of the changes made to Simons’ framework to help understand the evolution from the LOC framework to the revised framework.

(e.g.: interactive and diagnostic) and explores less studied ones (e.g.: positive and negative). As such, the proposed framework is seen as a starting point that will benefit from further refinement as it is used by researchers. Indeed, although the revised framework is based on some examples from the field, it is mostly conceptual and based on prior literature. Therefore, it will need to be tested by using it in empirical studies. The framework could be used to reanalyse previously published case studies or to analyse new cases. Moreover, quantitative analysis to verify construct validity for the framework's concepts could be done to support or refine the choices that have been made in this paper. Following the same idea, another limitation is the absence of measurement instruments for the framework's concepts. Developing measurement instruments for each concept outlined is a task for subsequent papers.

Other limitations include criticisms of Simons' framework that are still left unanswered. For example, while the framework explicitly takes the point of view of managers and their attempt to manage their control package, it would be worthwhile to consider the employees' contribution to the design of the framework. This would answer a criticism formulated for Simons' framework (that still applies to the revised framework) which is that employees are considered to be passive actors (see Gray (1990)). Furthermore, there are other uses of controls identified in the literature that have been excluded from the framework such as the legitimising and learning uses of controls (Henri, 2006). This was deliberate, because these uses were not part of Simons' (1995) framework. However, it could be interesting in the future to explicitly explore possible links between the revised framework and the literature on organisational learning on the one hand and institutional theory on the other hand (Adler and Borys, 1996, p. 67). Finally, the revised framework does not consider organisational structure and issues of decentralisation, although these elements are included in several MCS frameworks (Ferreira and Otley, 2009; Malmi and Brown, 2008). Here again, these components have been deliberately excluded from the framework, because they were not in Simons' original framework.

In addition, there are avenues for research that have emerged from the revised framework. For example, while the concepts of employee perceptions of controls and employee attitudes towards controls are considered important and are mentioned as separate elements in the revised framework, they are not explored in any depth, because they are not the main focus of the paper. However, research on the perception of controls could be done to understand what affects employees' perception of controls and the impact of these perceptions on organisational performance. As Zimmerman (2001, p. 424) suggests, "in equilibrium, firms' control systems should not be binding, and hence it would appear that accounting systems are not being used for control". This is in line with Adler and Borys (1996) who call for studies focusing on variability in how controls are perceived as well as Chenhall (2003) and Covalleski et al. (2003), who suggest linking the extended body of psychology-based research with contingency-based frameworks. Perception of and attitude towards controls could also be investigated in light of the

literature on employees' participation. Indeed, the idea that participation affects attitude and motivation is already present in the budget literature (see Shields and Shields (1998) for a review of the subject). Participation in the design of other types of control might also have an impact on attitude as suggested by Adler and Borys (1996).

Furthermore, empirical research on control efficiency could be done (in addition to contingency studies which investigate control effectiveness). This refers to the quality of controls (good/bad) which has been excluded so far from the revised framework. There is an emergent literature on rules that investigates their quality (Wouters and Wilderom, 2008) and possible links with the revised framework could be made. For example, we could argue that synergy is desirable, because it creates a more streamlined control package and, because it offers the possibility of combining both compliance and performance elements into a single integrated control (rather than keeping the two elements in separate and perhaps seemingly contradictory control devices). Moreover, future research on incentives could also investigate the impact of rewarding compliance. The literature already shows that linking performance measures with rewards leads to dysfunctional behaviour (Otley, 2003). Would rewarding compliance as well as performance solve this problem or would it aggravate it? This could be part of a more general study based on contingency theory with the objective of establishing a good "fit" between the different components of the framework (Gerdin and Greve, 2004). Indeed, if controls are used in an enabling way, punishment might not be appropriate or if controls are used to motivate, prescribed actions might disagree with the intention behind the control.

Finally, while the paper mainly focuses on Simons' (1995) LOC framework, other concepts in the literature could be improved as well. For example, there are several concepts that are similar to enabling and coercive (Adler and Borys, 1996) such as tight/loose (Merchant, 1985) and what is now called flexible/rigid (Hopwood, 1972). Are these concepts synonyms or do they each have a specific definition? More work has to be done to unite the different studies that make up the MCS literature and to build a coherent body of knowledge.

In summary, it is hoped that the developments to the framework suggested here will prove useful to researchers attempting to study control packages from a holistic point of view. It is intended to provide a tool that will enable the development of measurement instruments for distinct concepts to be empirically measured and linked to rich descriptions of observed control practices.

## 5. Conclusion

The aim of the paper was to build on a frequently used framework, namely Simons' LOC framework (1995), that has been criticised for its vague concept definitions. Based on the literature and some examples from three case studies, ambiguities regarding the LOC framework and the literature in general were identified. For each ambiguity a solution was proposed. The revised framework used these suggestions to clarify Simons' framework. It introduced



two groups of actors, managers (intention) and employees (perception) and focused mainly on the former.

Managerial intentions are comprised of three levels of choice: (1) types of controls (social and technical), (2) objectives of controls (performance or compliance) which are regrouped into four control systems operating at two organisational levels (operational and strategic performance control systems and business conduct and strategic boundaries) and (3) other choices regarding use of controls (interactive/diagnostic), role of controls (enabling/constraining) and consequences linked to controls (rewards/punishments).

Finally, the paper proposes several avenues for future research based on the revised framework such as the perception of controls, control efficiency and concept definition.

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### Appendix A. Evolution of the framework

The four images in Fig. A.1 help to visualise the evolution from Simons' original framework to the revised framework. First, belief systems are no longer categorised as a control system. Rather, they are now included as a form of social control which represent a type of control that constitutes, in combination with technical controls, part of all of the different control systems of an organisation.

Second, the remaining three levers of control have been replaced with the following types of control system: strategic performance, operational performance, strategic boundaries and business conduct boundaries. However, the original components of Simons (1995) levers of control are still included. For example, critical performance variables and cybernetic controls (formerly known as diagnostic control system) are part of the operational performance control systems. Strategic validity controls (formerly part of interactive control systems) are now a control system called strategic performance management control. Boundary control systems have been separated into two control systems, one at the operational level and one at the strategic level. This distinction was already identified by Simons, but the revised framework makes it explicit. Moreover, diagnostic and interactive control systems, although no

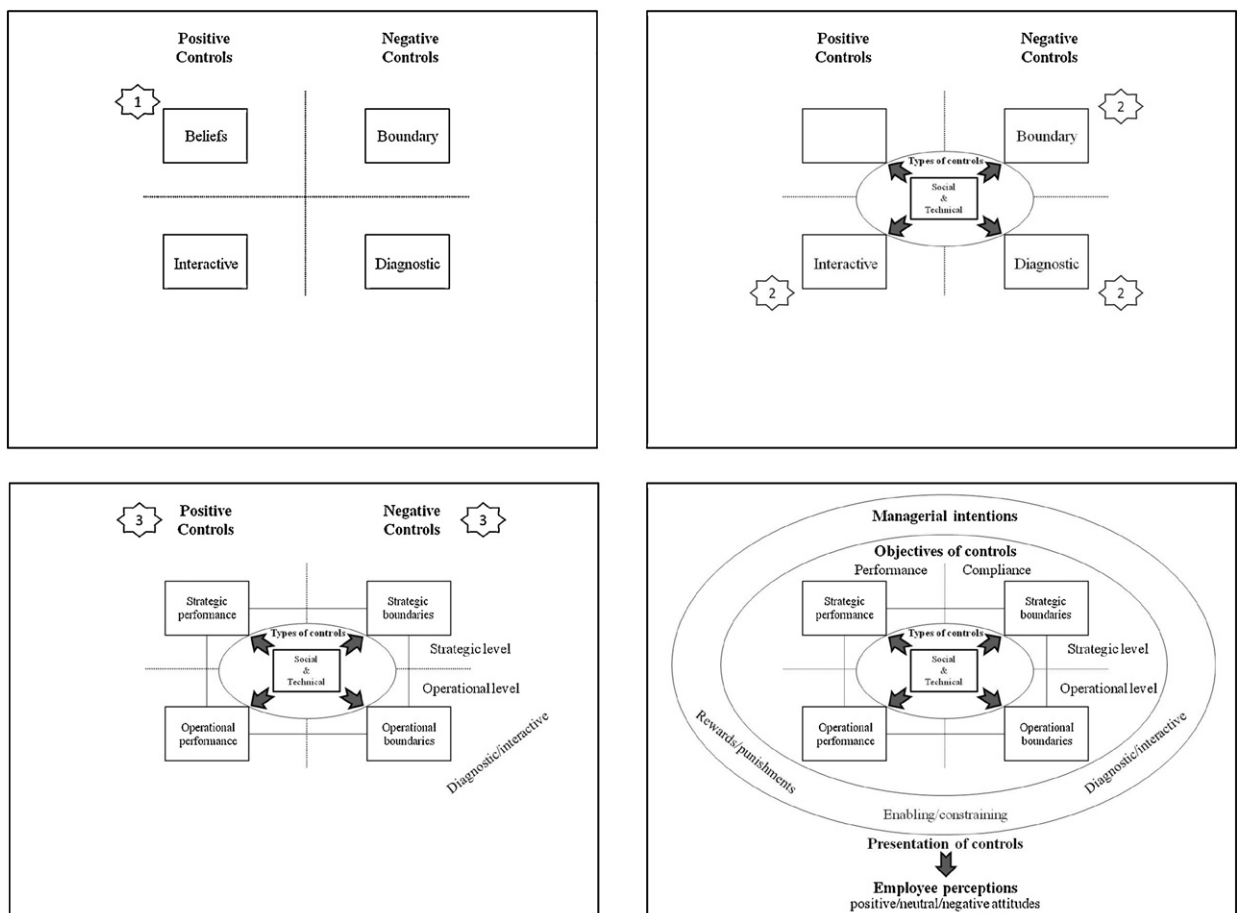


Fig. A.1. Evolution of the framework. Figure, in Appendix A, illustrates, step by step, the evolution from Simons' framework to the revised framework.

longer presented as descriptions of overall control systems per se are included as types of control system use in the managerial intentions section of the framework.

Third, the positive and negative dimension is included in different elements of the framework to account for the different aspects of this dimension. The objectives of controls account for the performance/value creation and compliance/value preservation sub-dimension; the enabling and constraining roles account for the creativity vs. predictability sub-dimension; employee attitudes towards controls described as positive, neutral or negative account for the employees' reaction to controls; rewards and punishment are part of managerial intention. However, it has to be noted that the quality of control (good vs. bad) is excluded from framework, because it was not intended by Simons to be part of his framework.

Finally, the framework presented in Fig. 1 (start of Section 3) is a lighter version of the fourth image in Fig. A.1. In particular, the performance/compliance labels and the organisational levels labels have been removed. While these labels are useful in explaining the evolution of the framework, they are not necessary since the names of the overall control systems already carry this information.

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