Let's do it safely: how Altrad Balliauw configured a package of control systems

Lies Bouten [a], Sophie Hoozée [b, *]

[a] IÉSEG School of Management (LEM-CNRS), 3 rue de la Digue, 59000 Lille, France
[b] Ghent University, Department of Accounting, Corporate Finance and Taxation, Sint-Pietersplein 7, 9000 Ghent, Belgium

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ABSTRACT

This paper reports the results of a creative safety campaign introduced by a Belgian scaffolding firm to align employee behaviour at different organizational levels. Our main objective is to examine how a package of control systems can enhance safety performance. More specifically, we show how the firm's control package was configured at different organizational levels and how a safety culture was created through symbols, rituals and ceremonies.

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1. Introduction

Every year, the International Labour Organization reports about 340 million work-related injuries, of which 2.3 million are fatal (O'Neill et al., 2015). For firms operating in industrial environments, it is, therefore, important to manage safety risks (cf. Kaplan and Mikes, 2012) and to integrate safety within their corporate strategy (e.g., Armenti et al., 2011). To execute their safety strategies, these firms need to develop effective management control systems in order to motivate employees and managers to perform actions that contribute to the achievement of the organization's safety goals.

It has long been acknowledged that management control systems do not operate in isolation but form a package of interrelated practices (Otley, 1980). Relying on Malmi and Brown's (2008) conceptual framework, this paper examines how management control systems operated as a package to enhance the safety performance of Altrad Balliauw, a Belgian scaffolding company. More specifically, we show how planning, cybernetic, reward and compensation, administrative and cultural controls were simultaneously used to align behaviour at different organizational levels.

The contribution of this paper is twofold. First, by examining the role of management control systems in supporting sustainability within organizations, we contribute to the sustainability accounting literature, which has primarily focused on external reporting (cf. Durden, 2008; Gond et al., 2012; Moore, 2013). In addition, most studies on sustainability control systems consider environmental sustainability only (Crutzen and Herzig, 2013). Our paper complements these studies by particularly investigating safety, a social dimension of sustainability. Second, sustainability and management control research has mostly paid attention to the technical dimensions of individual control systems (Ditillo and Lisi, 2014). In contrast, we take a holistic view that also incorporates organizational and cultural components of control systems. As such, through Malmi and Brown's (2008) package approach, we contribute to the emerging body of evidence on effective management control system configurations (e.g., Abernethy and Chua, 1996; Ahrens and Chapman, 2004; Chenhall and Langfield-Smith, 1998; Henri, 2006; Mundy, 2010; Sandelin, 2008; Widener et al., 2008).

2. Theory

2.1. Sustainability control systems

The behaviour of organizational members is not automatically in line with the goals of the organization. Three causes of

* Corresponding author. Tel.: +32 9 264 3533.
  E-mail address: Sophie.Hoozee@UGent.be (S. Hoozée).

incongruence can be distinguished: lack of direction, motivational problems and personal limitations. More specifically, management control problems arise (1) when employees do not understand what the organization wants from them; (2) when they are not highly motivated to perform their job well because their individual goals do not perfectly coincide with the organizational goals; or (3) when they are unable to perform well, for example because of lack of knowledge, intelligence, skills, information, resources, etc (Merchant and Van der Stede, 2012). Hence, employee behaviour is not always in line with company goals because employees are either unable or unwilling to do what is best for the organization.

To direct employee behaviour, firms need to develop appropriate management control systems (e.g., Simons, 1995). Traditional management control systems are, however, limited in their ability to address the interests of a broad range of stakeholders other than shareholders (e.g., Burritt and Schaltegger, 2010; Durden, 2008; Norris and O'Dwyer, 2004). To address this shortcoming, several modifications of management control systems have been proposed. For instance, while the original conception of the balanced scorecard had four basic perspectives (financial, customer, internal business and learning & growth), more recent conceptions also have other perspectives, such as "environment" to incorporate broader stakeholder interests (Kaplan and Norton, 1996). Alternatively, Johnson (1998) proposed to embrace a wider understanding of external stakeholders in the customer perspective, while Atkinson et al. (1997) developed a stakeholder scorecard, on which goals, measures and targets are established for stakeholders. Other examples of sustainability control systems include environmental budgets (e.g., Burritt and Schaltegger, 2001) or the integration of sustainability criteria into bonus calculations (e.g., Kolk and Perego, 2014).

Previous research on sustainability control systems is limited in two respects. First, most of these tailor-made control systems focus on environmental sustainability and neglect social dimensions of sustainability (Crutzen and Herzig, 2013), such as safety (e.g., measures for injury outcomes; O'Neill et al., 2015). In particular, safety may be added as a performance measure within the existing internal business perspective, or it may be incorporated into an employee or social perspective (Figge et al., 2002). In a similar vein, in reporting guidelines (like, for instance, the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines) as well as in the sustainability accounting literature (e.g., Branco and Rodrigues, 2008; Gray et al., 1995; Islam and Deegan, 2008; O'Neill et al., 2015), safety is typically considered as an element of social performance, and more specifically, of the pillar of "labour practices and decent work", which is also frequently called "human resources".

Second, attention has mostly been paid to the technical dimensions of individual sustainability control systems (Ditillo and Lisi, 2014). As such, there is still limited understanding of organizational and cultural components of sustainability control systems. Investigating these components is important because the embedding of sustainability principles within companies' strategies and internal business practices is a complex change process (e.g., Bouten and Hoozée, 2013; Larrinaga-González and Bebbington, 2001). In addition, studying individual control systems in isolation is problematic because of "the potential for serious model under-specification" (Chenhall, 2003, p. 131). Little research has, however, investigated the interactions among individual sustainability control systems (Ditillo and Lisi, 2014). Durden (2008) and Norris and O'Dwyer (2004) are notable exceptions in that they studied a combination of formal and informal controls in the context of socially responsive decision making.

To address the limitations of previous research on sustainability control systems, Ditillo and Lisi (2014) propose the use of a holistic approach that also considers organizational and cultural aspects, in addition to technical ones. The framework of Malmi and Brown (2008) satisfies these criteria and is explained in the next section.

2.2. Sustainability control systems as a package

In their conceptual framework, Malmi and Brown (2008) distinguish five main control types: planning, cybernetic, rewards and compensation, administrative and cultural controls. Approaching management control systems as a *package* of controls, Malmi and Brown (2008) further argue that organizations use combinations of these management control systems rather than choosing individual ones. In a similar vein, Ditillo and Lisi (2014) propose that a package of sustainability control systems may help firms to embrace sustainability as a strategic goal.

Planning can be a form of control when the planning process involves building employees' commitment to long-range and action plans. In particular, by allowing employees to participate in the formation of long- and short-term sustainability goals, planning may be used to guide and direct behaviour. *Cybernetic* controls direct employee behaviour through predetermined objectives, measurement of the achievement of the objectives, feedback information about the deviations and corrective actions. For example, firms may set detailed sustainability targets during the budgeting process, but they may also include sustainability objectives in other performance measurement systems (such as the balanced scorecard, as mentioned above). *Rewards and compensation* controls focus on increasing effort direction, duration and intensity to enhance the performance of individuals and teams in organizations (Bonner and Sprinkle, 2002). As such, sustainability criteria may be integrated into promotion considerations or bonus calculations (e.g., Kolk and Perego, 2014). *Administrative* controls direct employee behaviour through organizational design and structure (e.g., Otley and Berry, 1980), governance structures (e.g., Abernethy and Chua, 1996), and rules and policies (Simons, 1987). For instance, formal structures and meetings can be organized to facilitate the socialization of sustainability managers as opposed to keeping them peripheral and decoupled from core business activities (cf. Gond et al., 2012). As another example, organizations may implement sustainable development initiatives by relying on rules and procedures that specify how tasks are to be performed (cf. Merchant and Van der Stede's (2012) action controls). Finally, while Malmi and Brown (2008) acknowledge that organizational *culture* may at times be beyond deliberate design, they argue that it is nonetheless a control system when it is used to regulate behaviour. More specifically, in order for sustainability principles to succeed in permeating organizational life, it is necessary that they become embedded within a company's organizational culture (Ditillo and Lisi, 2014). An organizational culture may be promoted through values (Simons, 1995), symbols (Schein, 2010), clans (Ouchi, 1979) or selection and training (Merchant and Van der Stede, 2012). In particular, a clan is a subculture within an organization (cf. Dent, 1991) that "relies for its control upon a deep level of common agreement between members on what constitutes proper behaviour" (Ouchi, 1979, p. 838). As such, clan control is a "subtle yet powerful socialization process" (Ditillo and Lisi, 2014, p. 38) that shapes values and beliefs through rituals and ceremonies. The importance of informal controls in the context of socially responsive decision making is also illustrated by Durden (2008) and Norris and O'Dwyer (2004).

Team rewards could be used to implement cultural control because team members may monitor each other's behaviours to produce improved results in order to increase their collective

reward (Rankin, 2004). However, team incentives may also have some significant disadvantages. In particular, team rewards only provide a direct incentive if the individuals to whom the rewards are promised perceive that they can influence the performance on which the rewards are based to a considerable extent. Indeed, controllability is necessary for controls to be effective (Merchant and Van der Stede, 2012).

3. Material and methods

The case company, Altrad Balliauw, employs about 700 people and is active in scaffolding, industrial insulation and asbestos removal in the following sectors: energy, (petro)chemicals, metallurgy, construction, food and pharmaceuticals. It is headquartered in Verrebroek in Belgium and is part of the large French Altrad Group. This company was selected because Altrad Balliauw wanted to design an appropriate safety campaign to *"re-educate"* (Prevention Advisor & Head of Operational Safety) its workers. However, in order to really interweave safety into the organization's day-to-day practices, the CEO realized they *"had to come up with an idea that would be different from usual"*. In particular, to motivate workers towards safe behaviour, incentives had to be tailored to the target group: sturdy men from different nationalities, each with their own language and customs. Hence, the company needed to come up with something fresh, striking, innovative and multicultural.

The case description and analysis are based on data from four different sources. First, we were non-participative observers of a site supervisors' meeting, in which all site supervisors, the health and safety department and the CEO were involved. During this plenary meeting, we made notes of our observations. Second, we accompanied a project manager and Safety Sofie, the mascot of the safety campaign, on their safety rounds of the highly-secured work sites of two refineries and observed their interaction with the on-site workers and the site supervisors. Immediately after these visits, detailed field notes were made. Third, between January 2012 and June 2012, we performed interviews with the CEO, the QSHE (quality, safety, health and environment) Manager and the Prevention Advisor & Head of Operational Safety, as well with a project manager, a site supervisor and Safety Sofie. Before commencing each interview, the nature of the research was outlined for each interviewee. The interviews were semi-structured, which indicates that the questions were open-ended in order to invite interviewees to participate in a guided conversation (e.g., O'Dwyer, 2004; Patton, 2002). The average duration of each interview was 40 min. In addition, five shorter informal conversations (of approximately 10 min) with on-site scaffolders were conducted during the above-mentioned safety rounds. Because it was not possible to record on the refineries' sites (due to severe safety restrictions as well as noise), we made detailed notes of these interviews immediately after the site visits. Overall, the interviews covered the various organizational levels that were involved in the safety control systems and enabled us to cross-check information. Finally, we studied archival company files as well as publicly available information on the company's safety campaign.

A systematic approach to data analysis was undertaken based on Miles and Huberman (1994). In particular, the approach was built around three main phases: data reduction, data display and data interpretation. During the data reduction phase, the interview transcripts, field notes, archival company files and publicly available information were read in detail and categorized. The categories were based upon the framework of Malmi and Brown (2008). During the data display phase, the data were summarized in a matrix (see Fig. 1). During the final phase, to make sense of the data collected, we again drew on Malmi and Brown's (2008) framework to interpret the various elements of Altrad Balliauw's

Cultural controls		
Slogans, calendars, T-shirts, flags, Safety Sofie mascot Safety Sofie audits "brother keeper"		
Planning	**Cybernetic controls**	**Reward and compensation**
Participation of middle-level managers and site supervisors	Balanced scorecard Coloured scoreboard	Bonuses Kiss-points
Administrative controls		
Start Work Analysis (SWA) booklet, fill-in cards, computer game Safety audits Toolbox meetings, site supervisors' meetings		

Fig. 1. Altrad Balliauw's package of safety control systems according to the Malmi and Brown (2008) framework.

package of safety control systems more deeply. To fully analyze our data according to this theoretical framework, additional information was collected through short telephone conversations and emails.

4. Results and discussion

4.1. Description of the safety campaign

Altrad Balliauw's safety campaign was introduced after a fatal accident:

> *"I absolutely want to eliminate all safety risks in our company. We had a fatal accident in 2007. One of our men, Mario Colaes, fell down because he did not attach himself to a safety line. I had to tell Mario's mother that he was gone. I absolutely never want to do that again."*
>
> (CEO)

The CEO wanted to interweave safety into the workers' day-to-day practices but realized that this would require a different approach:

> *"We have to sensitize our men. Safety should constantly be on their minds. The progress of traditional methods, based upon repeating what they should and should not do, was completely extinguished. We once organized a meeting about safe cycling on site. Safe cycling obviously implies cycling with two hands on the handlebars. Right after the meeting, one guy rode off with a tool box in one hand and his other hand on the handlebars. Things had to change. We had to come up with an idea that would be different from usual."*

In August 2010, Altrad Balliauw launched a campaign called "Safety Sofie", named after its mascot Sofie, a sexy, blond model. Via a monthly calendar (see Fig. 2), Safety Sofie draws attention to a particular safety theme and encourages the workers to put it into practice. Sofie is not only the face of the campaign; she is also a real flesh-and-blood woman who regularly shows up on work sites. She carefully checks the workers' harnesses, the expiry date of their helmets and whether their Start Work Analysis (SWA) booklet (see Fig. 3) is filled in correctly. The SWA booklet is a compulsory document that is used to perform an analysis of possible risks and safety measures to be taken.

After her inspection, Safety Sofie rewards safe behaviour with sticker kisses. These "kisses from Safety Sofie" can be exchanged for all kinds of personal protective equipment and gifts from the Safety Sofie Shop for the workers and their families (see Fig. 4).

Fig. 2. Monthly calendars.

Fig. 3. The Start Work Analysis (SWA) booklet.

To further develop the company's safety culture and to expand it to site supervisors, in 2011, new elements were added to the Safety Sofie campaign by focussing on two new themes. The first theme is called "brother keeper". Altrad Balliauw believes that safety starts from the individual, but working safely is only possible when individuals watch over each other's safety. Because measuring and rewarding safety at the level of individual workers was not aligned with this belief, the company switched from individual to team rewards to encourage mutual monitoring of safe behaviour. More specifically, in the second year of the Safety Sofie campaign,

Fig. 4. Safety Sofie gifts.

workers could only earn kiss-points for the collective safety performance of all workers on a site. To further stimulate *"shared vigilance"* (Prevention Advisor & Head of Operational Safety), posters were put up. They displayed pictures of unsafe scenarios and workers taking measures to make these scenarios safe by helping each other (see Fig. 5).

Next to "brother keeper", the second theme added to the Safety Sofie campaign was the hierarchical involvement of site supervisors, who play a pivotal role in monitoring the safety of their workers:

> *"They are the key players in this firm. [...] When they don't support this, you can do whatever you want, nothing will ever happen. [...] They also communicate with our customers."*

> (Prevention Advisor & Head of Operational Safety)

Because kiss-points did not appear to have a sufficient impact on site supervisors, Altrad Balliauw decided to use site (supervisor) scoreboards. In particular, to increase their commitment, site supervisors were made accountable by having their weekly safety score displayed as a coloured ball on a scoreboard that hangs out on each site (see Fig. 6). To determine the weekly safety score, a detailed checklist is used. All workers receive a pocket leaflet that lists how their work site can earn kiss-points. The assigned weekly colour is green, orange or red, depending on whether no, minor or major safety risks have been detected. All workers of a site and the site supervisor then accordingly receive three, one or zero kiss-points. Moreover, in the case of an orange or red score, the site supervisor is responsible for suggesting preventive actions. The implementation of these suggestions is then verified during the

following week. A league table with the sites' and workers' scores is available on the Safety Sofie website. The top five sites are rewarded: the Safety Sofie flag is hung out on the work site for one month and the workers receive a T-shirt with a unique slogan (see Fig. 7).

Site supervisors are also expected to provide input for new monthly safety themes. Their suggestions are worked out in detail by management who organize a monthly meeting for all site supervisors. Each site supervisor is then responsible for educating his workers. This is done in a monthly "toolbox meeting". To motivate workers to attend these meetings, a fill-in card is sent to their home address in order to involve their families. The card portrays three scenarios of which workers have to assess whether they are safe or unsafe (see Fig. 8). The solutions of these exercises are discussed during the toolbox meetings. When 80 percent of the workers has completed the card and attends the meeting, they earn one kiss-point.

Although team incentives encouraged mutual monitoring, they also had an important disadvantage. In particular, a weekly safety score was determined for each work site. Because workers were not able to monitor the behaviour of all other workers on the site, an overall safety colour had a discouraging effect. To overcome this controllability problem, rather than translating the site score into an equal number of kiss-points for all workers on a site, in 2012, the company decided to adjust the kiss-points of particular teams when they performed better or worse than the overall site score. In addition, individual workers could also earn extra points in case of exceptional performance. To make sure that workers understand the incentive system, a Safety Sofie computer game has been developed. The game simulates a work site tour and explains the different rules.

Site supervisors play a crucial role in Altrad Balliauw's safety policy. Not only can they encourage or stifle safe behaviour of their workers, they are also in close contact with customers. In 2011, Altrad Balliauw had noted that the visibility of the scoreboards to customers motivated the site supervisors much more than the kiss-points did. The company therefore decided to involve its customers in the measuring, monitoring and managing of safety. In addition, rather than having a specific safety theme per month, Altrad Balliauw switched to six bimonthly themes per year. During the first month of each theme, workers receive general information on a specific topic from the company's safety service. During the second month, a site-specific toolbox meeting is held and this meeting is also attended by the customer. Customer-specific problems or incidents are raised and initiatives around the central theme are tailored to the customer. In fact, some customers actively participate in determining the colour scores. It should further be noted that Altrad Balliauw not only involves its customers in the safety campaign, but also its subcontractors. Although they are not on the company's payroll, subcontractors can earn kiss-points and attend safety meetings.

Safety is an important element of the employee perspective of the firm's balanced scorecard. In particular, to monitor its safety performance, Altrad Balliauw uses the following performance indicators: degree of frequency, degree of severity, total recordable incident rate, first-aid and number of reported incidents. Middle-level managers then receive a bonus based upon the safety performance of the unit they are responsible for. To determine its long-term safety objectives, Altrad Balliauw also involves the middle-level managers, who, in turn, ask input from their project managers and site supervisors for the translation into short-term targets and action plans. In addition, the CEO plays a pivotal role in the company's safety campaign. He regularly visits work sites, chairs and presents at meetings, etc.

Fig. 5. The "brother keeper" poster.

Fig. 6. The Safety Sofie scoreboard.

The effectiveness of Altrad Balliauw's safety campaign is demonstrated in Table 1, which shows the evolution of the "degree of frequency"[1] since 2006. Altrad Balliauw has also won various safety awards, including the Dow Environmental, Health and Safety Contractor Award.

4.2. Altrad Balliauw's package of safety control systems

To enhance its safety performance, Altrad Balliauw uses a package of control systems. Regarding long-range and action *planning*, Altrad Balliauw involves the middle-level managers in the formation of its five-year safety objectives in order to enhance commitment. Site supervisors then contribute to the translation of these objectives into operational targets and action plans. Long-range and action planning are thus used to achieve buy-in at

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[1] The "degree of frequency" is calculated as the number of incidents involving absence times 1,000,000 divided by the exposure hours.

Fig. 7. The Safety Sofie flag and T-shirt.

upon safety performance indicators in the balanced scorecard. In a similar vein, the safety performance of workers and site supervisors is expressed on a coloured scoreboard. Based on the colour, they either receive kiss-points (green or orange) or have to suggest preventive actions (orange or red). The online league table with all sites' scores further motivates safe behaviour by creating a healthy competition between the site supervisors.

Altrad Balliauw uses a number of *administrative* controls to instruct workers and site supervisors about safety. In particular, the SWA booklet, the fill-in cards, the computer game and the toolbox meetings operate as policies and procedures that specify "*how* tasks or behaviours are to be performed or not performed" (Malmi and Brown, 2008, p. 293, emphasis added). Indeed, Neal et al. (2000) found that to achieve safety compliance, knowledge about safety is indispensible. To further enhance workers' safety behaviour, regular safety audits are also conducted. We consider these safety audits as action controls because "their objective is to motivate employees to behave appropriately in the future" (Merchant, 1982, p. 45) and to correct "potentially harmful behaviour before the full damaging effects are felt" (Merchant, 1982, p. 45). It should be noted that action controls are included in Malmi and Brown (2008)'s administrative controls, as a part of policies and procedures. Finally, site supervisors' meetings also act as administrative controls because they are governance structures used to co-ordinate site supervisors' activities and to stress their accountability for their workers' safety behaviour.

Altrad Balliauw tried to develop a safety *culture* through a number of Safety Sofie symbols, rituals and ceremonies. In partic-

Fig. 8. A fill-in card.

Table 1
Evolution of the degree of frequency since 2006.

Year	Degree of frequency
2006	4.88
2007	5.30
2008	3.62
2009	1.51
2010	1.29
2011	0.00
2012	1.34
2013	0.65
2014	0.00

different organizational levels and, as such, guide and direct middle-level managers' and site supervisors' behaviour.

Altrad Balliauw uses two types of *cybernetic* controls and associated *rewards and compensation* tailored to different organizational levels. The balanced scorecard as well as the coloured scorecards can be considered as cybernetic controls because they are used to detect and correct unwanted variances from pre-determined goals. Bonuses and kiss-points are then the rewards attached to these two performance measurement systems. More specifically, middle-level managers are financially rewarded based

ular, slogans, calendars, T-shirts, flags and the Safety Sofie mascot can be considered as symbols that visually express proper safety behaviour. The audits conducted by Safety Sofie are perceived as beneficial learning experiences by the workers because Safety Sofie reminds them about the safety procedures in a jovial way. The Safety Sofie audits further act as rituals and ceremonies to "remind everyone of what they are supposed to be trying to achieve" (Ouchi, 1979, p. 844):

> "There is not a single that day passes without talking about Safety Sofie."

> (Prevention Advisor & Head of Operational Safety)

> "When we talk about safety, we automatically refer to Safety Sofie. […] It is burnt [in us]."

> (QSHE Manager)

> "Safety is like putting on your pants every morning. It's a habit."

> (CEO)

Next to these individual-level mechanisms, Altrad Balliauw also relies on team-based controls to influence safety behaviour. In

particular, the "brother keeper" theme is used to instil a shared "norm of reciprocity" (Ouchi, 1979, p. 838) and to reach common agreement on what constitutes proper safety behaviour. Moreover, to overcome the language barriers between workers, "brother keeper" posters were used as non-verbal communication tools. When coordination among workers is high, they can directly control the actions of each other and, as such, the teams become self-managed (Towry, 2003). It can be argued that this socialization process is a clan control. In line with Kirsch et al. (2010), site supervisors are also an important part of the clan in that they facilitate team-based control by fostering open communications, trusting relations and shared cognitions.

4.3. Discussion

Before the introduction of the Safety Sofie campaign, Altrad Balliauw controlled safety performance in the following ways: (1) middle-level managers were involved in long-range and action planning (planning control), (2) safety performance measures were included in the balanced scorecard (cybernetic control), (3) middle-level managers were rewarded with bonuses when safety targets had been met (reward and compensation control), and (4) safety audits and educational workshops were organized (administrative control). Hence, the first three controls were only targeted at middle-level managers and lower organizational levels were only guided by administrative controls. The CEO describes the limitations of this approach as follows:

"We noticed that traditional methods — which were mainly focused on continuously repeating 'You cannot do this, you cannot do that.' — were completely extinguished. [...] And then we said: 'How can we bring safety back alive in our people?' [...] Because we work with people and all our activities are human activities, you need to act on the person. He needs to be consciously engaged with safety."

(CEO)

To embed safety principles in the organization, Altrad Balliauw did not only develop cultural controls, it also expanded its administrative controls by adding more policies and procedures (the SWA booklet, fill-in cards, computer game) as well as governance structures (site supervisors' meetings) and upgrading its traditional educational workshops to interactive toolbox meetings. Moreover, planning, cybernetic and reward and compensation controls were expanded to lower organizational levels: site supervisors were involved in planning; coloured scoreboards and kiss-points were used to guide them and their workers.

To embed safety throughout the entire firm, Altrad Balliauw thus realized that different types of controls are required, and that they should be adapted to each organizational level (see Table 2). Hence, our findings suggest that to ingrain safety in organizational life, cybernetic and rewards and compensation controls are not sufficient. Rather, the complex change process

Table 2
Control systems used per organizational level.

	Middle-level managers	Site supervisors	Workers
Planning	X	X	
Cybernetic controls	X	X	X
Reward and compensation	X	X	X
Administrative controls		X	X
Cultural controls		X	X

that this entails requires a more holistic approach (Ditillo and Lisi, 2014), with control systems tailored to different organizational levels.

Finally, we conjecture that Altrad Balliauw's safety control systems operate in a complementary fashion. On the one hand, cultural and planning controls made employees more receptive to formal controls because they activated a "socialization process" (Norris and O'Dwyer, 2004) through which safety principles permeate organizational life. On the other hand, it may be argued that more formal controls were conducive for sustaining and fortifying the safety culture.

5. Conclusions

This case study was a first attempt to provide evidence on how sustainability control systems can operate as a package in the context of safety. In particular, we showed how Altrad Balliauw, a Belgian scaffolding firm, configured a package of controls (planning, cybernetic, reward and compensation, administrative and cultural) tailored to different organizational levels in order to enhance its safety performance. In line with Ditillo and Lisi (2014), we also found that in order for safety principles to permeate behaviour, administrative and cultural controls are indispensable. The question then arises whether these results can be generalized to other firms or sustainability areas, like the natural environment. Further, it should not be overlooked that our finding of complementarity may be conditional on the specific setting of our case, in which there were no apparent conflicts between financial and safety performance (cf. Norris and O'Dwyer, 2004).[2]

It should also be noted that the approach used by the case company may not always work, in that its effectiveness might depend on ethical and cultural contingencies. In the case of Altrad Balliauw, the Safety Sofie campaign only operates in Belgium, The Netherlands and Germany. It will not be expanded to other countries, like France (where the parent company is located) or the UK, due to cultural differences:

"We could not even enter the work site [of one of our French customers] because there were a group of women on site."

(QSHE Manager)

Hence, in contrast to Van der Stede (2003), we did not find evidence of intracorporate isomorphism because national cultural influences appear to dominate parent company effects. Future research is needed to further investigate the relative importance of both effects. Moreover, it is possible that alternative control packages produce equally good safety outcomes. Hence, studying equifinality (cf. Sandelin, 2008) could also be a fruitful avenue for further research.

Finally, although the Safety Sofie campaign has visibly improved Altrad Balliauw's safety performance and is still effective today, the CEO realizes that continuous improvement is necessary:

"I want to keep Safety Sofie as a quality logo of safety; that is, when you do it right, you do it the Safety Sofie way. But we will have to be innovative when the effect of the campaign starts to weaken. At the moment, it still lives. Our men still intensively talk about it."

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[2] Although it may be argued that safety performance and financial performance may conflict in the short run, in the long run they can be expected to be positively correlated (cf. Lothe and Myrtveit, 2003; Lothe et al., 1999).

Acknowledgements

References

Abernethy, M.A., Chua, W.F., 1996. A field study of control system "redesign": the impact of institutional processes on strategic choice. Contemp. Acc. Res. 13 (2), 569–606.

Ahrens, T., Chapman, C.S., 2004. Accounting for flexibility and efficiency: a field study of management control systems in a restaurant chain. Contemp. Acc. Res. 21 (2), 271–301.

Armenti, K.R., Moure-Eraso, R., Slatin, C., Geiser, K., 2011. Primary prevention for worker health and safety: cleaner production and toxics use reduction in Massachusetts. J. Clean. Prod. 19 (5), 488–497.

Atkinson, A.A., Waterhouse, J.H., Wells, R.B., 1997. A stakeholder approach to strategic performance measurement. Sloan Manag. Rev. 38 (3), 25–37.

Bonner, S.E., Sprinkle, G.B., 2002. The effects of monetary incentives on effort and task performance: theories, evidence, and a framework for research. Acc. Organ. Soc. 27 (4–5), 303–345.

Bouten, L., Hoozée, S., 2013. On the interplay between environmental reporting and management accounting change. Manag. Acc. Res. 24 (4), 333–348.

Branco, M.C., Rodrigues, L.L., 2008. Factors influencing social responsibility disclosure by Portuguese companies. J. Bus. Ethics 83 (4), 685–701.

Burritt, R.L., Schaltegger, S., 2001. Eco-efficiency in corporate budgeting. Environ. Manag. Health 12 (2), 158–174.

Burritt, R.L., Schaltegger, S., 2010. Sustainability accounting and reporting: fad or trend? Acc. Audit. Acc. J. 23 (7), 829–846.

Chenhall, R.H., 2003. Management control systems design within its organizational context: findings from contingency-based research and directions for the future. Acc. Organ. Soc. 28 (2–3), 127–168.

Chenhall, R.H., Langfield-Smith, K., 1998. The relationship between strategic priorities, management techniques and management accounting: an empirical investigation using a systems approach. Acc. Organ. Soc. 23 (3), 243–264.

Crutzen, N., Herzig, C., 2013. A review of the empirical research in management control, strategy and sustainability. In: Songini, L., Pistoni, A., Herzig, C. (Eds.), Accounting and Control for Sustainability (Studies in Managerial and Financial Accounting, vol. 26). Emerald Group Publishing, Bingley, UK, pp. 165–195.

Dent, J.F., 1991. Accounting and organizational cultures: a field study of the emergence of a new organizational reality. Acc. Organ. Soc. 16 (8), 705–732.

Ditillo, A., Lisi, I.E., 2014. Towards a more comprehensive framework for sustainability control systems research. In: Freedman, M., Jaggi, B. (Eds.), Accounting for the Environment: More Talk and Little Progress (Advances in Environmental Accounting & Management, vol. 5). Emerald Group Publishing, Bingley, UK, pp. 23–47.

Durden, C., 2008. Towards a socially responsible management control system. Acc. Audit. Acc. J. 21 (5), 671–694.

Figge, F., Hahn, T., Schaltegger, S., Wagner, M., 2002. The sustainability balanced scorecard – linking sustainability management to business strategy. Bus. Strategy Environ. 11 (5), 269–284.

Gond, J.-P., Grubnic, S., Herzig, C., Moon, J., 2012. Configuring management control systems: theorizing the integration of strategy and sustainability. Manag. Acc. Res. 23 (3), 205–223.

Gray, R., Kouhy, R., Lavers, S., 1995. Constructing a research database of social and environmental reporting by UK companies. Acc. Audit. Acc. J. 8 (2), 78–101.

Henri, J.-F., 2006. Management control systems and strategy: a resource-based perspective. Acc. Organ. Soc. 31 (6), 529–558.

Islam, M.A., Deegan, C.M., 2008. Motivations for an organisation within a developing country to report social responsibility information. Acc. Audit. Acc. J. 21 (6), 850–874.

Johnson, S.D., 1998. Identification and selection of environmental performance indicators: application of the balanced scorecard approach. Corp. Environ. Strategy 5 (4), 34–41.

Kaplan, R.S., Mikes, A., 2012. Managing risks: a new framework. Harv. Bus. Rev. 90 (6), 48–60.

Kaplan, R.S., Norton, D.P., 1996. The Balanced Scorecard: Translating Strategy into Action. Harvard Business School Press, Boston, MA.

Kirsch, L.J., Ko, D.-G., Haney, M.H., 2010. Investigating the antecedents of team-based clan control: adding social capital as a predictor. Organ. Sci. 21 (2), 469–489.

Kolk, A., Perego, P., 2014. Sustainable bonuses: sign of corporate responsibility or window dressing? J. Bus. Ethics 119 (1), 1–15.

Larrinaga-González, C., Bebbington, J., 2001. Accounting change or institutional appropriation? – a case study of the implementation of environmental accounting. Crit. Perspect. Acc. 12 (3), 269–292.

Lothe, S., Myrtveit, I., 2003. Compensation systems for green strategy implementation: parametric and non-parametric approaches. Bus. Strategy Environ. 12 (3), 191–203.

Lothe, S., Myrtveit, I., Trapani, T., 1999. Compensation systems for improving environmental performance. Bus. Strategy Environ. 8 (6), 313–321.

Malmi, T., Brown, D.A., 2008. Management control systems as a package – opportunities, challenges and research directions. Manag. Acc. Res. 19 (4), 287–300.

Merchant, K.A., 1982. The control function of management. Sloan Manag. Rev. 23 (4), 43–55.

Merchant, K.A., Van der Stede, W.A., 2012. Management Control Systems: Performance Measurement, Evaluation and Incentives, third ed. Prentice Hall, Harlow, UK.

Miles, M.B., Huberman, A.M., 1994. Qualitative Data Analysis: an Expanded Sourcebook, second ed. Sage Publications, Thousand Oaks, CA.

Moore, D.R.J., 2013. Sustainability, institutionalization and the duality of structure: contradiction and unintended consequences in the political context of an Australian water business. Manag. Acc. Res. 24 (4), 366–386.

Mundy, J., 2010. Creating dynamic tensions through a balanced use of management control systems. Acc. Organ. Soc. 35 (5), 499–523.

Neal, A., Griffin, M.A., Hart, P.M., 2000. The impact of organizational climate on safety climate and individual behavior. Saf. Sci. 34 (1–3), 99–109.

Norris, G., O'Dwyer, B., 2004. Motivating socially responsible decision making: the operation of management controls in a socially responsive organization. Br. Acc. Rev. 36 (2), 173–196.

O'Dwyer, B., 2004. Qualitative data analysis: illuminating a process for transforming a 'messy' but 'attractive' 'nuisance'. In: Humphrey, C., Lee, B. (Eds.), The Real Life Guide to Accounting Research: a Behind-the-scenes View of Using Qualitative Research Methods. Elsevier, Oxford, UK, pp. 391–407.

O'Neill, S., McDonald, G., Deegan, C.M., 2015. Lost in translation: institutionalised logic and the problematisation of accounting for injury. Acc. Audit. Acc. J. 28 (2), 180–209.

Otley, D.T., 1980. The contingency theory of management accounting: achievement and prognosis. Acc. Organ. Soc. 5 (4), 413–428.

Otley, D.T., Berry, A.J., 1980. Control, organisation and accounting. Acc. Organ. Soc. 5 (2), 231–244.

Ouchi, W.G., 1979. A conceptual framework for the design of organizational control mechanisms. Manag. Sci. 25 (9), 833–848.

Patton, M.Q., 2002. Qualitative Research & Evaluation Methods, third ed. Sage Publications, Thousand Oaks, California.

Rankin, F.W., 2004. Coordinating effort under team-based and individual incentives: an experimental analysis. Contemp. Acc. Res. 21 (1), 191–222.

Sandelin, M., 2008. Operation of management control practices as a package – a case study on control system variety in a growth firm context. Manag. Acc. Res. 19 (4), 324–343.

Schein, E.H., 2010. Organizational Culture and Leadership, fourth ed. Jossey-Bass, San Francisco, CA.

Simons, R., 1987. Accounting control systems and business strategy: an empirical analysis. Acc. Organ. Soc. 12 (4), 357–374.

Simons, R., 1995. Levers of Control: How Managers use Innovative Control Systems to Drive Strategic Renewal. Harvard Business School Press, Boston, MA.

Towry, K.L., 2003. Control in a teamwork environment – the impact of social ties on the effectiveness of mutual monitoring contracts. Acc. Rev. 78 (4), 1069–1095.

Van der Stede, W.A., 2003. The effect of national culture on management control and incentive system design in multi-business firms: evidence of intracorporate isomorphism. Eur. Acc. Rev. 12 (2), 263–285.

Widener, S.K., Shackell, M.B., Demers, E.A., 2008. The juxtaposition of social surveillance controls with traditional organizational design components. Contemp. Acc. Res. 25 (2), 605–638.