

**THE NEXT GENERATION OF MANAGEMENT
CONTROL SYSTEMS: JUSTICE AND FAIRNESS
AS ANTECEDENTS OF GOAL CONGRUENCE**

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Abstract

Management control systems are intended to motivate managers to ensure that organizational goals are accomplished. They do this by rewarding and promoting people according to certain criteria. Usually, they are designed to achieve the greatest possible goal congruence, where people pursue personal goals that conduce to the organizational goal.

The literature on management control has focused mainly on formal controls, as they are easier to study empirically. Generally speaking, though, formal and informal controls coexist. In this paper, we attempt to show that organizational justice may act as a link between formal and informal control elements.

We find that there are two stable states, which we have labeled total goal congruence (where the system is formally fair and the user is fair) and total goal incongruence (where the system is formally unfair and the user is unfair); and two unstable states, in which goal congruence is occasional (unfair system used fairly) or perverse (fair system used unfairly). We conclude with some propositions, which can be used to generate hypotheses that we believe will stimulate, at the core of the management control systems literature, a new stream of research in which justice is seen as a central element of control system design and use.

Keywords: organizational justice, fairness, goal congruence, management control systems.

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Introduction

Management control systems are intended to motivate managers to ensure that organizational objectives are accomplished. They do this by rewarding and promoting people according to certain criteria. Usually, they are designed to achieve the greatest possible level of goal congruence, where people pursue personal goals that conduce to the organizational goal.

The literature on management control has focused mainly on formal controls (e.g. see Chenhall, 2003; Davila and Foster, 2007; Davila, Foster, and Li, 2009a) because the elements of formal controls are more visible and more easily measurable, making them easier to study empirically. In general, however, wherever a process of control is implemented, formal and informal controls coexist (Anthony and Govindarajan, 2003, p. 98). In the formal management control literature, management control systems design has evolved to capture intangibles by including more complex indicators, using what is called a balanced scorecard (Kaplan and Norton, 1992; Kaplan and Norton, 1993). The balanced scorecard is thought to produce a greater alignment with organizational strategy (Epstein and Manzoni, 1997; Kaplan, 1996). In a four-case study, Chapman (1998) suggested that management control systems have a complementary role as devices for coping with uncertain environments.

Contingency theoretical approaches to management control systems situate them in a particular situation and moment in time (Chenhall, 2003), and have been the starting point of a literature that explains how management control systems can be used to reduce uncertainty while promoting innovation (Bisbe and Otley, 2004; Davila et al., 2009a; Davila, Foster, and Oyon, 2009b; Davila, 2000), as learning devices to help particular strategies (Abernethy and Brownell, 1999), and to allow for entrepreneurial activities (Davila et al., 2009b; Davila, 2005). Recent literature in the field has expanded the concept of informal elements of control processes, exploring interactive uses of formal control systems (Abernethy and Brownell, 1997; Bisbe and Malagueño, 2009; Bisbe and Otley, 2004; Simons, 1995, 2000), and enabling uses, based on the concept of enabling bureaucracy (Ahrens and Chapman, 2004).

Even so, very little research into the design of control systems that lead to goal congruence takes into account the role that both formal and informal elements play in the control process.

The challenge is to find a requirement that allows formal and informal elements of control systems to create goal congruence.

In this paper, we attempt to show that organizational justice, embodied in the concepts of formal and informal fairness, may play this role, formal fairness being linked to management control system design (formal control elements), and informal fairness to how managers actually use the system (informal control element).

There are two reasons for this proposal. First, the main objective of management control systems is to achieve goal congruence. Such systems function as a way of distributing resources and responsibilities according to certain criteria, by planning, monitoring, evaluating, and rewarding. Complementary to this initial objective of goal congruence is the idea of using management control systems to decrease uncertainty. Recent literature has concentrated on how management control systems can be designed to favor particular strategies, with the promotion of learning through budgeting processes (Abernethy and Brownell, 1999), the promotion of innovation (Davila et al., 2009a, 2009b; Davila, 2000), and enabling for entrepreneurial success (Davila and Foster, 2007; Davila et al., 2009a).

Our emphasis on goal congruence as a major objective of management control systems is not in contradiction with the use of controls to decrease uncertainty because even if a system is used to decrease uncertainty, it still needs to achieve some degree of alignment between the interests of the people managed using that system and the interests of the organization, thus allowing for what has recently been called “interest alignment” (Gottschalg and Zollo, 2007). These authors define organizational interest alignment as the “degree to which the members of the organization are motivated to behave in line with organizational goals” (Gottschalg and Zollo, 2007, p. 420). Ultimately, management control systems need to make people behave in ways that lead to the achievement of organizational goals.

Second, the organizational justice literature has investigated the informal rules of fairness that create the strongest perceptions of fairness and so elicit the best reactions, thus helping to achieve organizational goals (Colquitt, Conlon, Wesson, Porter, and Ng, 2001; Cropanzano, Bowen, and Gilliland, 2007; Greenberg, 1987).

For both these reasons it is clearly important that we explore the link between organizational justice and management control systems in depth, because these systems are more likely to be well designed and properly used if the findings of the organizational justice literature are taken into account.

In the previous theoretical control literature, fairness and goal congruence are considered the principal criteria for evaluating control system design (Vancil, 1973). This provides a first starting point for our argument here, even though Vancil does not explain how fairness and goal congruence are interlinked or even attempt to rigorously define the two concepts. The more recent control literature has shown that individual behavior and cognitive analysis are at the heart of how management control systems are used (Birnberg, Luft, and Shields, 2007). Management control systems influence people’s behavior (Abernethy and Brownell, 1999; Brownell, 1983), so appropriate use of such systems is considered central to producing outputs in line with organizational goals (Bisbe and Malagueño, 2009; Bisbe and Otley, 2004).

Fairness has been considered to be the perception of organizational justice, depending on relevant aspects of system design, output and use (Adams, 1965, 1966; Colquitt, Greenberg and Scott, 2005; Colquitt, Greenberg, and Zapata-Phelan, 2005; Leventhal, Karuza, and Fry, 1980; Thibaut

and Walker, 1975a, 1975b, 1978). This research is important in that it considers fairness as central, but it is designed to test specific hypotheses, not always in organizational settings, and has not yet being specifically applied to management control systems. Research is needed to explicitly address the importance of organizational justice in both informal and formal control elements of management control systems.

It seems quite obvious, moreover, that fairness is important on a practical level. In a small organization that has no formal control system, there may be unjustifiable differences in rewards between organizational units or individuals, without significant differences in performance. Top management tends to react to such unfairness by establishing additional formal controls and creating new rules to guarantee a minimum level of fairness. This still leaves room for unfairness, however, when the system is misused. Accordingly, we can distinguish between two kinds of fairness: fairness that is embedded in rules, and the fairness of managers' actions.

In this paper we proceed as follows. First, we explore the concepts of management control systems and fairness. Second, we identify the specific roles of formal and informal fairness applied to management control systems. Third, by describing a model in which informal fairness is included and combined with formal fairness, we show how formal fairness on its own is not enough. Depending on the presence or absence of the two types of fairness (formal and informal), and the combination of the two, management control systems can guarantee different levels of goal congruence.

To show our model of formal and informal fairness in control systems, we present a table with four states of goal congruence, depending on how fairness and unfairness are combined in the design of management control systems and their use by managers. We point out the plausible dynamics of these four states. This dynamic aspect has to be considered because people learn how the system is used and how they can use the system. There are situations where goal congruence is stable and others where it is not. This can leave us with different problems regarding the expected future level of goal congruence and how to change the present situation into a better one. Finally, we suggest ways in which our theoretical findings can be empirically tested.

The Challenge of Management Control Systems

According to Otley and Berry (1980), organizational control is a much neglected subject. Thirty years on, the situation is hardly any better, in spite of technical progress in tools such as the Balanced Scorecard or better information based on advances in IT (Kaplan and Norton, 1992, 1993). In the same article, Otley and Berry quote Tannenbaum (1968) as saying that “an organization without some form of control is impossible,” which should be obvious. Managerial tasks entail setting goals, monitoring execution, evaluating results, and allocating rewards and punishments. All these tasks are part of the management control process. A substantial part of managerial activities therefore has to do with management control.

A formal control system can be defined as a management control *structure* (i.e., the structure of responsibility, properly specified and defined) and a management control *process* by which 1) goals and strategies are set, and 2) converted to an annual budget for each responsibility center; 3) actual performance is measured and assessed, and 4) rewards and punishments are allotted to each responsibility center (Anthony and Govindarajan, 2003).

Formal control systems, thus defined, are particularly suitable for cybernetic systems, where there are more certainties than uncertainties. In rapidly changing, highly uncertain environments, however, a formal control system can become a straightjacket. Hence, informal structures are needed to influence the control process. To allow for flexibility, the behavioral literature on management control systems has considered how these systems can be used to cope with uncertainty (Chapman, 1998). The concept of enabling bureaucracy (Adler and Borys, 1996) has introduced informal uses of the formal systems best suited to dealing with uncertainty (Ahrens and Chapman, 2004). The four levers of control described by Simons (1995) account for interactive uses of formal systems, acknowledging the importance of informal elements of control (Bisbe and Otley, 2004), and showing how formal systems can be used in different ways (Bisbe and Malagueño, 2009).

The impact of the informal organization – considered by Anthony and Govindarajan as a set of relationships – on management control has been sadly neglected (Anthony and Govindarajan, 2003, p. 102). It is a matter of common observation that most small organizations have very rudimentary formal control systems, if any; yet if, as Tannenbaum says, organizations without control are impossible, they must have informal management control systems. Informal systems may play a very important role at any stage of an organizations' development. Before adopting formal control systems (Davila, 2005), most organizations have some form of mainly informal control.

What is also intuitively clear is that, taken together, formal and informal control processes take up a large part of top managers' time, as it is their job to set goals, monitor execution, evaluate results, and allocate rewards and punishments. Hence, management control systems, interpreted broadly, always have formal and informal components, applied to both the formal and the informal organization.

Management control systems can be said to be formal, informal or, more frequently, a mix of the two. In a small company, the control system is likely to be almost totally informal. Beyond legal accounting requirements, the only evaluation of the organization and its units will be informal, as will the associated rewards and punishments. This type of system can obviously pose problems, as informal rules generally leave room for arbitrariness. As we will show, such systems need to be governed with informal fairness, until eventually a formal system is created – a step that has been shown to be important to entrepreneurial success (Davila, 2005; Sandino, 2007).

It is difficult to find organizations that have only formal control systems, as there is always also an informal organization. The closest example would be that of a highly coercive bureaucratic organization (Adler and Borys, 1996), such as may be found in the public sector, where explicit rules are adhered to strictly. Even then, however, there is always a certain degree of discretion or arbitrariness. These systems are usually less flexible, so injustice does not appear in the form of arbitrariness, but in the form of unjust rules that may be difficult to change. Where that is the case, informal incentives may emerge to correct the situation every time the unjust rule is applied. But precisely because of the nature of formal systems, it is sometimes hard to make that informal rule workable.

When a control system is formalized, both formal and informal controls may be used. A formal system cannot be ruled through formal controls alone, as managers, when *using* the system, use some informal controls as well and exhibit some degree of subjectivity. In most control systems, therefore, there is a mix of formal and informal controls.

Achieving goal congruence

Goal congruence is “the central purpose of a management control system” (Anthony and Govindarajan, 2003, p. 98). Having made this central statement, Anthony and Govindarajan go on to say that “in a goal congruent process, the actions people are led to take in accordance with their perceived self-interest are also in the best interest of the organization.” They recognize that usually, in a imperfect world, perfect goal congruence does not exist, but insist that management control systems need at least “not to encourage individuals to act against the best interests of the organization” (Anthony and Govindarajan, 2003, p. 98). In a more practical vein, they argue that in order to evaluate any management control practice, there are two crucial questions to be answered: 1) What actions does the management practice motivate people to take in their own self-interest?, and 2) Are these actions in the best interest of the organization?

Vancil (1973) does not use the expression “congruence” but proposes that “the controller must select the objectives and measurements in such a way that a good decision by any manager is also a good decision for the corporation as a whole” (Vancil, 1973, p. 77). Vancil thus defines goal congruence in terms of how control systems need to be designed by a controller.

In the economics literature, goal congruence was labeled “incentive compatibility.” Of course, the economics literature assumes perfect (unbounded) rationality on the part of the agents and takes only tangible economic variables into account, implicitly assuming them to be perfectly measurable. The term “incentive compatibility” was coined by Hurwicz (1972) in a seminal article in which he tried to answer the question of how an institution needs to be designed when self-interested individuals might try to manipulate economic variables to their personal advantage. In this article he establishes the foundations for the design and implementation of such mechanisms and tries to show how society’s allocations and decisions depend to a large extent on the agents’ actions and ability to communicate and the costs of communication.

Incentive compatibility is, of course, a desirable characteristic; but it is limited to formal systems and tangible, quantifiable variables, excluding, for instance, unselfish cooperation in organizations, and therefore is not sufficient. This means that although incentive compatibility is a necessary condition, it is not sufficient to align individual and organizational goals. Management control systems must be designed in such a way that goal congruence increases over time. This will involve additional considerations. Incentive systems are formal management control systems designed to create goal congruence. But as informal elements are present, and the time span considered is usually longer rather than shorter, it seems that formal control systems need to be complemented with informal elements.

In the early days of the more behaviorally oriented management control literature, some researchers classified organizations as either normative, instrumental or coercive, depending on whether goals are perfectly aligned, partially aligned, or totally misaligned (Otley and Berry, 1980). In practice, organizations are close to the instrumental model, so the real problem is finding solutions that provide inducements to individuals to contribute to the organization’s goals (Barnard, 1938), thus increasing goal congruence.

Recent literature in the field does not explicitly say that management control systems need to provide goal congruence. It focuses more on how management control systems are used to decrease uncertainty, as we have said, by fostering innovation (Davila et al., 2009a; Davila, 2000), and entrepreneurial activities (Davila and Foster, 2007; Davila et al., 2009a). We can see, however, that once those desired variables (innovation and entrepreneurial possibilities, among other strategic variables) have been achieved, we need to make sure that people continue to do

what the organization would like them to do. Even if goal congruence is not an explicit objective, it remains implicit that people's actions are important to organizations' results, and to achieve those results people must strive to achieve what the organization considers desirable. It may be that managers use management control systems because they think it will reduce uncertainty, but they also need to be aware that they must choose a system that provides some degree of alignment between the interests of the organization's members and the interests of the organization itself (Gottschalg and Zollo, 2007). The term "organizational interest alignment," defined as "the degree to which the members of the organization are motivated to behave in line with organizational goals" (Gottschalg and Zollo, 2007, p. 420), was coined to account for this need for goal congruence.

We use the term "goal congruence" to describe the main objective of management control systems for two reasons. First, because goal congruence is the term most commonly used in the management control literature; and second, because it is the most inclusive term, allowing for both formal and informal aspects and encompassing the more behavioral recent literature that sees control systems as devices for promoting strategy, innovation and creativity and avoiding uncertainty. At the same time, we think that the focus on avoiding uncertainty may depend on which phase of control is most important, i.e., planning, monitoring, evaluating or rewarding. In projects where planning is important, avoiding uncertainty may become managers' primary concern, whereas if the most important thing is rewarding, then incentives will need to align peoples' interests with those of the organization. Both of these informal aspects of formal management control use are compatible. Goal congruence is the ultimate, encompassing objective of management control systems that explains the need to include these aspects to help individuals collaborate to attain organizational goals.

Next, we discuss some insights into the need to include informal elements. We believe that informal elements of management control systems are necessary because goal congruence itself has both formal and informal elements. Therefore, it seems that formal controls alone cannot capture certain informal aspects that are implicit in goal congruence.

The informal elements of goal congruence

At the organizational level, even where there is agreement about the long-run organizational objectives, it is not immediately clear what short-run objectives should be pursued in order to achieve them. For instance, the actions that will maximize firm value in the long term cannot necessarily be determined objectively in the short term. Indeed, as a general rule, short-term value maximization does not lead to long-term value maximization.

Much the same applies at the level of the individual. People may have an idea of what they want in the long run, but will not necessarily know, under bounded rationality, what they should do now in order to achieve those longer-term objectives. They may be misled by the attractiveness of a short-run course of action that is not optimal in its long-run effects and that may jeopardize the desired ultimate outcome. People can have long- and short-term motivations that contradict each other. We have already mentioned how some recent literature has tried to link economic theories with behavioral theories to explain how formal systems interact with peoples' motivations to lead to long-term organizational success (Gottschalg and Zollo, 2007). In this literature, management control systems play a crucial role as antecedents of peoples' motivations. The underlying idea is that organizational interest alignment (what we have called goal congruence) has both formal

and informal elements, as peoples' motivations are the result of the combination of the formal systems applied and peoples' own preferences (Gottschalg and Zollo, 2007).

We therefore need to direct our efforts along the following lines: if management control systems are one of the main instruments of corporate governance, we need to acknowledge that control system design and operation are of the utmost importance. Accordingly, we have said that the requirements of control systems are in their design and use, thus including formal and informal elements. We have also found that organizational justice can be seen as a formal and informal aspect of control systems, in the concepts of formal and informal fairness, which can lead to different degrees of goal congruence, formal fairness being linked to management control system design (formal control elements), and informal fairness, to how managers actually use the system (informal control element).

We have provided reasons for this in the management control systems literature. We have explored the idea of goal congruence complemented with uncertainty avoidance to see how management control systems function as devices for distributing responsibilities and resources according to certain criteria, with informal and formal elements.

Next, we explore how organizational justice provides formal and informal elements that can be at the center of the design and use of management control systems. These elements can tell us which formal and informal fairness characteristics management control systems need to have and, depending on the combinations of formal and informal fairness, what different levels of goal congruence can be attained.

Justice in Organizations: a Crucial Formal and Informal Requirement of Management Control Systems

Justice in organizations has gained prominence recently and, as we will show, can be an important concept in the operation of a management control system. Justice has been studied in two main ways: first, in terms of how *systems* must be designed and *acts* performed in order to be *just*; and second, in terms of how people perceive systems and the decisions they produce (*justice perceptions*).

First, we will discuss the main philosophical arguments about justice as a requirement of formal and informal systems and acts. After that, we will show how the literature on justice perceptions has evolved and review the major findings in the area, regarding formal and informal aspects of systems and acts. In general, these two ways of approaching justice have been linked at some point, because empirical research was used to test the extent to which certain aspects of systems and acts were present or not when studying people's perceptions. In general, and applied to organizational settings, organizational justice has evolved mainly through empirical research.

Concepts of fair design and fair acts

Philosophical inquiries regarding justice typically start with Aristotle, who is at the origin of most conceptual applications of justice in current systems of thought applied to management. Aristotle's main thoughts on justice are found in the fifth book of his *Nicomachean Ethics* (Aristotle, 2000).

The model depicted by Aristotle clearly distinguishes between two concepts: *lawfulness* and *fairness*. *Lawfulness* is a quality of the system, whereas *fairness* is a quality of acts. Following Aristotle, what is just will be what is lawful and fair, while what is unjust will be what is unlawful or unfair (Aristotle, 2000, Book V).

Fairness, on the other hand, is the result of applying this *lawful* system with certain corrections to account for personal and external circumstances that are specific to each individual case. Fairness is thus the virtue or habit of subjectively taking account of personal and external circumstances when using a *lawful* system on people (Aristotle, 2000). Following this argument, *fairness* is an applied concept; it appears when a *lawful* system is to be implemented. It includes an attenuation of the toughness of this system when situational and personal factors are taken into account in the judgment.

Aristotle talks about justice as a virtue, one that is part of a person's character (willingness to use the lawful system with fairness). He defines justice as "that kind of state of character which makes people disposed to do what is just and makes them act justly and wish for what is just" (Aristotle, 2000, p. 109). In his view, justice is the greatest human virtue and the one that comprises all the rest: "in justice is every virtue comprehended" (Aristotle, 2000, p. 111). Justice is also complete in the sense that it is the only virtue that is needed in cooperation; in other words, justice is the virtue that people need to have when engaging in cooperative acts. Aristotle stresses the will as part of this virtue because "a man is just when he acts justly by choice" (Aristotle, 2000, p. 129).

Aristotle also tried to distinguish between different types of justice, depending on the matter at the heart of the judgment. The first type of justice he considered was distributive justice. To be just, distributions must give to each person according to some relevant criterion – in Aristotelian terms, *merit*. Equal merit deserves an equal share of the total.

What perceptions of justice do people have about design and acts?

The way justice is studied in organizations is mainly through perceptions of justice. The study of justice perceptions has become popular in recent years. The literature is growing, as attempts are made to better understand how people perceive certain features of organizations as just or unjust, and how they direct their actions and behaviors in light of such perceptions. This is an area of increasing interest, both in the field itself and in multidisciplinary approaches (as an example of surveys of the field, see, for instance, Fortin, 2008; Greenberg, 1987).

Major analyses in the field have been directed towards understanding what justice is (Adams, 1963, 1965; Cropanzano and Ambrose, 2001), why people have justice motivations (Cropanzano, Goldman, and Folger, 2005; Folger, 1998), how judgments are formed (Cropanzano and Folger, 1989; Folger, 1986; Folger and Cropanzano, 2001), and what the consequences are of different justice perceptions and justice policies applied in organizations (Cropanzano, 1993). Some research has concentrated on how to establish guidelines to help managers improve justice perceptions (Cropanzano et al., 2007). People care about justice, and many desirable organizational outcomes may be adversely affected by perceptions of injustice. Caring about employees' justice perceptions therefore seems likely to pay off, and establishing policies to improve those perceptions can be considered proper managerial behavior (Cropanzano et al., 2007). In light of this deeper knowledge, justice variables have come to be considered very important inputs. As knowledge about justice has increased, our understanding of the characteristics a system must have in order to be perceived as just has improved. Another

stream of research in the field of subjective perceptual justice has sought to understand what makes people perceive managerial actions and behavior to be fair.

These subjective dimensions (perceptions) of justice have been extensively studied. The empirical evidence shows two things: 1) systems need to have certain characteristics in order to be considered just, and 2) managerial behavior and actions towards people must meet certain requirements in order to be perceived as fair.

This means that, subjectively, people care about the treatment they receive from formal systems, on the one hand, and from managers, on the other. Initially, aspects of perceptions of procedures have been labeled *procedural and distributive justice* (Blader and Tyler, 2003) and aspects regarding treatment received from managers, *interpersonal justice* (Bies, 2001). Sometimes, the two types of justice perceptions have been studied jointly, as they can both be seen as aspects of procedure: the formal aspects (*procedural justice*) and the informal aspects (*interpersonal justice*) (Tyler and Bies, 1990). Usually, however, *interpersonal justice* goes beyond the decision making involved in following procedures to include decision making with respect to the outcomes resulting from those procedures. Then, a new type of justice needs to be introduced that is partly formal: *distributive justice*.

From a perceptual, empirical point of view, distributive justice is defined as the perception of the justice of the outcomes received. Distributive justice, sometimes has been studied linked to a specific rule or norm of distribution. Although the *actual outcome* can be separated from the *process* of receiving it, there are obviously many links between the concepts of *distributive justice* and *procedural justice*. Some researchers have even challenged the idea that they are different (Ambrose and Arnaud, 2005). *Procedural* and *distributive justice* have sometimes been found to be interlinked, as people may sometimes accept a less favorable outcome if the procedures that delivered the outcome are fairer. The most common way of dealing with these different concepts of justice is to accept that if people can clearly distinguish between different aspects of justice, it may be useful to use different constructs for each aspect (Colquitt and Shaw, 2005).

Another type of justice, *informational justice*, is the perception of justice attaching to the information received when a personal interaction takes place. This type of justice is usually combined with *interpersonal justice* to form *interactional justice*, which is the overall perception of justice attached to a given interaction (Bies, 2001). Even though informational justice may be important for some purposes, information is so specifically linked to interpersonal relationships that many researchers think of it as being directly interactional justice.

To conclude, three types of justice appear to be important in relation to the purpose of this paper: *distributive justice* (perceptions of justice regarding outcomes), *procedural justice* (perceptions of justice regarding procedures), and *interpersonal justice* (perceptions of justice regarding how procedures are used and how outcomes are decided and delivered by managers).

The approach to justice in the management literature has been largely empirical. This means that the object of study has been individuals' perceptions of justice. Initially, empirical models drew upon philosophical theories of justice, especially the concepts of Aristotelian thought. In fact, empiricists asked to what extent those theoretical concepts held true in reality and attempted to find empirical evidence for their existence (Greenberg and Bies, 1992). Recent studies have usually built directly on empirical findings, without explicitly stating what philosophical theories they are using. We shall discuss how organizational justice concepts can be linked to formal and informal fairness, which we think are crucial to management control systems.

Clarifying justice concepts, and which is going to be our choice

At this point, it is important to clarify whether fairness and justice are different concepts, or whether they are in fact the same. It is clear that, theoretically, the two are different. Aristotle says that justice is the sum of *lawfulness* and *fairness* (Aristotle, 2000), so apparently they are not readily interchangeable. A system can be lawful or unlawful, whereas an act can be just or unjust, fair or unfair.

Interestingly, in empirical studies the two concepts have been used interchangeably: people were asked about their perceptions of justice and fairness without any attempt to discover whether there were any differences between the two. Empirical findings suggest that people perceive different types of things as being (un)fair or (un)just, resulting in different types of justice and fairness. What is clear empirically is that people distinguish between the justice or fairness of the system and the justice or fairness of the decision maker. Moreover, perceptions may be more formal or more informal. Specifically, they may derive from more or less objective features of the formal system, or from the way managers treat people. We have seen that these two aspects have been labeled *distributive* and *procedural* justice (relating to the system's output or procedure) and *interpersonal* justice (relating to the decision maker).

In conclusion, we can say that research has found theoretically and empirically different aspects of justice and has identified conceptually similar constructs referring to the justice of a system and the justice of a decision maker. Clearly, though, the labels used by empirical researchers are not consistent with those proposed by Aristotle.

We propose the expression "informal fairness" to refer to the *use* of management control systems, and the expression "formal fairness" to refer to the *design* of management control systems. By making this distinction, we can clarify concepts and link labels to the more extended labels used in the organizational justice literature, and at the same time remain consistent with the terms used by philosophy.

We shall now explore the requirements of formal fairness and the propositions that follow from it. After that, we shall see its limitations and how it can be complemented by informal fairness, also with some specific propositions. Finally, we shall propose a model of how the two types of fairness combine, giving four states of goal congruence, for each of which we provide a series of propositions.

Formal fairness

Organizations need to set their goals so as to encompass individual goals (Simon, 1964). They must also avoid arbitrariness (Leventhal et al., 1980). In general, involving individuals in the budgeting process has been one of the tenets of recent literature on participative budgeting (Chenhall, 1986; Chenhall and Brownell, 1988; Shields and Young, 1993). At the same time, procedures that allow recipients to take part is one of the requisites of the procedural justice literature (Lindquist, 1995). Giving people a say and offering explanations during management control processes has been found to have a positive effect (Libby, 1999; 2001; Van den Bos, Vermunt, and Wilke, 1996). Generally speaking, managers react more positively when procedurally just management control systems are implemented (Taylor, Masterson, Renard, and Tracy, 1998). Findings suggest that management control system designs that are developed following due process lead to greater procedural justice perceptions (Taylor, Tracy, Renard, Harrison, and Carroll, 1995).

Subsequently, research moved towards a better understanding of the mechanisms by which a formalized budgeting process can create fairness perceptions, and how such mechanisms lead to higher performance. Wentzel (2002) argues that these mechanisms can be explained following a two-step process. The first step concentrates on how participation in the budgeting process increases fairness perceptions. The second step shows that those fairness perceptions lead to greater goal commitment (“goal congruence”) on the part of managers and thus to greater overall performance (Wentzel, 2002). Overall, perceptions of justice coming from the management control system lead to more positive behavior towards the organization and the supervisor (Thurston Jr. and McNall, 2010).

More recent empirical research has included elements of procedural and distributive justice as variables mediating between strategically oriented management control systems and performance (Burney, Henle, and Widener, 2009). Researchers have used distributive and procedural justice constructs that show formal fairness aspects of the management control systems. This is a good starting point, but it leaves informal aspects of fairness in the use of the system unexplored. That is what our model is intended to accomplish, as we will show in the next section. We summarize our discussion in the following proposition:

Proposition 1: A formally fair system sets up goals in a way that finds mechanisms to integrate individual goals.

Another important requirement regarding the formal fairness of the system is how the rules of the game are to be established. As a rule, goals and performance assessments across subunits need to have certain characteristics. Organizational justice scholars have claimed that procedures need to be consistent (Leventhal et al., 1980). This means that people need to know in advance on what criteria they are going to be judged and rewarded (Van den Bos et al., 1996). Apart from this, procedures must not contradict each other, and what is expected of people must be in line with the contribution they are prepared to make. Finally, people need to acknowledge that the norm of distributive justice is transparent. In summary,

Proposition 2: A formally fair system distributes resources and responsibilities and evaluates subunits according to real achievements and personal competences, with explicitly established “ex ante” rules of the game.

Management control scholars have always recognized that managers must be assessed on factors they are able to control (the so-called controllability criterion). One of the proponents of this criterion is Vancil (1973), who argues that evaluation based on controllable performance can be considered to be “fair.” He also explains that “a manager must believe that measurement encompasses all the factors he can control and excludes those over which he has no control” (Vancil, 1973, p. 77). Indeed, controllability is one of the tenets of management accounting, in spite of possible dysfunctions (Demski, 1976). At the same time, organizational justice scholars consider controllability to be a procedural design requirement (Colquitt, 2001; Leventhal et al., 1980).

Recent studies have focused on acquiring a better understanding of this controllability principle (Giraud, Langevin, and Mendoza, 2008). Findings suggest that managers are willing to accept being evaluated on factors they can influence but do not necessarily fully control. Moreover, they clearly distinguish between internal and external factors and tend to be more concerned about controlling the internal ones (Giraud et al., 2008). In summary,

Proposition 3: A formally fair system includes some form of controllability criterion, meaning that managers can only be evaluated on aspects over which they have some influence.

Rewards are a crucial aspect of management control systems and are recognized by the literature on distributive justice. It is recognized that people need a minimum reward, below which it is difficult to have a good standard of living. It seems necessary to establish a “just” minimum reward. Various contributions in the literature argue for a social minimum to guarantee basic needs and prevent social exclusion. Empirical research has acknowledged that establishing such a minimum is appropriate (Scott, Matland, Michelbach, and Bornstein, 2001). Social philosophers have considered that this minimum in some cases has to be maximized, all else being equal (Rawls, 1971, 2003). The management control literature has not called for a social minimum reward, but minimum wages have been established by law.

Besides this social minimum, some researchers have warned that attention must be paid to pay inequalities, as they have harmful effects on those concerned and ultimately also on the companies that rely on systems that create such inequalities (Siegel and Hambrick, 2005). There is a tension between the need to design systems that compensate according to performance, and the fact that creating huge pay differences creates perceptions of unfairness on those that are low performers in the system, and this in turn has some effects on their actions. Low performers end up believing that they can do nothing to attain higher levels of performance in the future, and start to feel detached from the organizational purpose (Siegel and Hambrick, 2005). Usually, research on formal systems has concentrated on the first part of this tension, i.e., rewarding according to merit, but recently the focus has turned to examine the effects of pay inequalities, which are important and cannot be ignored (Fredrickson, Davis-Blake, and Sanders, 2010). In summary,

Proposition 4: A formally fair system has to establish a minimum reward to be received by all participants, and set a limit to pay inequalities.

Systems cannot be perfect. As we will note in the next part, this accounts for the need for some informal fairness. Before going into that, however, the system itself, in its design, needs to provide some rules regarding this assumption of not being perfectly designed. In terms of formal fairness, this means explicitly recognizing flaws in management control systems by setting up formal ways of repairing any injustices that may be created (Wenzel, Okimoto, Feather, and Platow, 2008). Organizational justice scholars have found that the main motivation, after an injustice occurs, is the willingness to find means of reparation (Conlon, Meyer, and Nowakowski, 2005). Management control systems need to recognize that they cannot deal with all possible situations and that their design cannot take all possible future states into account. Furthermore, research has found an appropriate managerial behavior to promote ways of repairing (Cropanzano et al., 2007; O'Malley and Greenberg, 1983). Thus, applicable reparation policies and the option of repairing the system need to be explicitly included in the system's design. In summary,

Proposition 5: A formally fair system needs to include formal means of repairing injustices and provide mechanisms for changing the system.

Informal fairness: when fairness of the formal system is not enough

In general, the literature on management control systems has focused on formal controls. In some cases, this has been because of tractability, or because empirical studies are easier to design when measures are available. This is presupposing that formal systems are sufficient on their own, i.e.,

that it is always possible to find a formal control system design that will result in the best possible control. In the context of justice, the formal system has to do with formal fairness requirements. According to this argument, it is sufficient to have a formally fair control system. However, in the following paragraphs we explain why this is not the case, and how it is necessary to include the informal dimension of fairness, linked to how managers use the system.

We can argue this in three different ways. The first has to do with the management control literature. Management control systems that rely exclusively on formal controls have generally been shown to be suboptimal where the output is not measurable and the activities performed are not perfectly observable (Ouchi, 1979). This applies to fair formal systems where the only built-in requirements are formal fairness requirements, which we have shown in the previous section.

A second argument comes from incomplete contracts theory. Under bounded rationality it is impossible to establish a contract that anticipates every possible contingency arising from future fulfillment of the contract (Milgrom and Roberts, 1992, p. 256). The *use* dimension therefore makes it imperative to go beyond formal fairness requirements.

A third argument, also based on bounded rationality, has to do with the possibility of learning, i.e., the fact that the two people involved may change their minds about the desirability of some anticipated state of affairs. Power needs to be delegated in the expectation that people will honor the trust placed in them by exercising power correctly (Simons, 1995). Delegation thus relies on the informal use of power. Furthermore, flexibility of management control systems is said to be needed in order to decrease uncertainty (Chapman, 1998). This informal use is studied by including the enabling use of those systems (Ahrens and Chapman, 2004), as well as their interactive use, to foster other desirable variables that may have some impact on goal congruence (Bisbe and Malagueño, 2009; Simons, 1995).

It is not enough, therefore, for control systems to merely include a set of formal justice requirements, or what we have labeled formal fairness. Control systems always require informal procedures, which by their very nature include some form of subjectivity. In relation to fairness, that subjectivity has to do with the fairness shown by the user of the system.

Regarding empirical research, previous work has focused on some components of organizational justice while leaving out others. Burney et al. (2009), for instance, use two of the four components of the organizational justice measure provided in Colquitt (2001). Their reasoning is that, in general, aspects relevant to formal management control systems are best captured by distributive and procedural justice. We totally agree with this, but some of the informal aspects remain unexplored. Those informal aspects, which we are including in our model, may be those captured by interactional justice. Interactional justice complements the subjective aspects of justice perceptions of procedures and outcomes, as it informs about how managers use procedures to deliver outcomes and information fairly (Bies, 1987; Bies and Moag, 1986). In summary,

Proposition 6: Fair use of the system implies a willingness to be fair in the use of the system and in proposing possible improvements regarding formal fairness.

The problem of subjectivity is that of arbitrariness (Posthuma and Dworkin, 2000). Even if a system includes the set of formal fairness requirements we have proposed, use of the system may allow decisions that, on purpose, do not include the justice criteria. In general, inequalities in all of the possible outcomes of management control systems need to exclude discrimination. We have said that equality in all facets is impossible; inequalities are fair and appear necessarily, once the basic equality is established (Sen, 1992). It is unfair for people to receive

the same when they are not behaving in the same way, even if they are in an equal position and have the same options of behavior. That said, to prevent inequalities from appearing arbitrary, the reasons for them must be explained. In summary,

Proposition 7: Inequalities in any reward or recognition need to be explained, based on specific criteria, so as to avoid arbitrariness.

A Model of Management Control Systems and Organizational Justice

Justice is closely and crucially related to management control systems. Showing this relationship, which has been neglected in previous management control systems research, is the main objective of this paper. As a rule, research has set out to show empirically how just or unjust the outcomes of management control systems are perceived to be. Conceptually, however, the relationship between fairness and management control systems has not been studied in sufficient depth to find meaningful ways of linking the two. After proposing the two important aspects of the fairness of control systems, namely formal and informal fairness, we shall attempt to link them with goal congruence, in order to show that they are antecedents of different possibilities of goal congruence.

We present a model in which fairness is included in the design and use of the system. The relationship between formal fairness, informal fairness and goal congruence is shown in Table 1. As we have seen, formal fairness is associated with the formal control design, while informal fairness is associated with the control action taken by the decision maker. A control system design can be either formally fair or formally unfair, while the use of the system can be either fair or unfair.

The two variables and the two levels for each variable give four possible combinations with respect to goal congruence: a fair formal design combined with fair use of the system, leading to what we call *total goal congruence*; an unfair formal design combined with fair use of the system, leading to what we call *occasional goal congruence*; a fair formal design combined with unfair use of the system, leading to what we call *perverse goal congruence*; and an unfair formal design combined with unfair use of the system, leading to what we call *total goal incongruence*. In what follows we shall expand on these four concepts and briefly indicate the plausible dynamics of the four situations.

We must clarify that this two-by-two matrix is used for simplicity. We consider these four states as meaningful archetypes that reflect the relevant theoretical differences we are interested in here. We realize that formal and informal fairness are continuous variables, not yes-or-no states, and that there may be different levels of formal fairness in companies' formal systems, and different levels of informal fairness in the way their managers use them.

Table 1

Combinations of fairness of the formal system and fairness of the decision maker's action

		Control system formal design	
		Fair	Unfair
Action taken by the decision maker when using the system	Fair	<i>Total goal congruence</i>	<i>Occasional goal congruence</i>
	Unfair	<i>Perverse goal congruence</i>	<i>Total goal incongruence</i>

Total goal congruence

When a formally fair management control system design is used fairly, the alignment of individuals and organization may be close to perfect. We have proposed what constitutes a formally fair system and what we mean by being informally fair. In a reasonably consistent situation of this kind, individuals who work in the organization for an extended period are going to behave in total alignment with what the organization requires.

This is because individual organizational members are required to perform in a way that is consistent with their abilities and competences, while the goals of the organization are defined so as to include the goals of the individuals. Performance assessment is aligned to what the individuals actually do, and mechanisms for repairing injustices are explicitly built into the system. People also have enough to live on, as rewards are above a “just” minimum. Management is therefore acting fairly, which means that managers are willing to use the system without arbitrariness and to amend any dysfunctions in the way the system is used. In summary,

Proposition 8a: A fair design of the formal management control system, used fairly, leads to ideal goal congruence and to a high degree of identification of members with the organization.

This situation corresponds to a stable state of equilibrium, as there are no circumstances that motivate individuals to depart from it. There is consistency between the system and the way it is used. Generally speaking, injustices scarcely appear in this kind of system and if they do, they are easily repaired through built-in provisions justly applied by the system manager. In summary,

Proposition 8b: Ideal goal congruence is a stable state of equilibrium that tends to continue over time.

Occasional goal congruence

After analyzing the state of total goal congruence, we move towards a more realistic state in which many organizations may find themselves, where goal congruence is occasional and the system, even if not formally fair, is used fairly. This type of situation rewards in-depth study, especially of the dynamics it can generate with respect to learning and future developments from the starting situation that lead to better goal congruence of management control systems.

When an unfair formal management control system design is used fairly, every time managers use the system they learn how to use it more fairly, finding new ways to repair the injustices it creates (Cropanzano et al., 2007). Evaluative learning takes place: after first subjectively repairing injustices, managers may start to propose changes to the parts of the system that have proven unfair (Aristotle, 2000). Acts that will change the system need a measure of goodwill on the part of those in power. This has been recognized by researchers, who consider the virtue of fairness essential when people are able to decide about the recognition others should receive (Aristotle, 2000; Folger and Cropanzano, 2001). At the same time, organizational justice scholars have recognized interactional justice as being crucial (Bies, 1986; Bies and Moag, 1986) and research on organizational justice has recently focused on the source of injustice, i.e., the person who has created the injustice by using formal procedures and norms unjustly. The source has been regarded as the central actor against whom reactions to injustices are directed after an injustice occurs (Lavelle, Rupp, and Brockner, 2007). In summary,

Proposition 9a: A formally unfair management control system, applied fairly, allows for occasional goal congruence. Fair use of the system leads to positive learning, which can repair formal unfairness.

This situation is highly unstable and evolves towards a better version of itself, tending towards total goal congruence, as fairness transforms the system from a formally unfair one into a formally fair one.

Usually, therefore, this state does not last long, as managers' willingness to use the system fairly makes them strive to change the system and so make it formally fair. At the same time, the literature on virtuous circles can provide some clues about this type of situations, in which learning produces a deviation-amplifying process that leads to an improvement of the situation, making future states of affairs steadily fairer compared to previous ones (Ashton, 1976; Maruyama, 1963; Weick, 1979; Wender, 1968). Maruyama concludes that in systems in which two variables are interdependent, there can be deviating effects that amplify both variables affected. Thus, when one variable increases, the other increases and so on, in turn, until in the end they reach a stable state of equilibrium, or else increase continuously over time.

In our case, it is clear that informal fairness increases the formal fairness of the system, so that the future fairness of the system is amplified, as is the future fairness of the decision maker. As a result, the formally unfair system may be transformed into a fairer one, eventually leading to a situation of total goal congruence. In summary,

Proposition 9b: In a situation of occasional goal incongruence, managers acting fairly can transform the system into a formally fair one by changing the parts of the system that have proven formally unfair. Ultimately, this can lead to a situation of ideal goal congruence.

Let us illustrate the situation with an example. Imagine an organization that is starting its activities. Typically, management control systems are rudimentary and incomplete, and the same applies to its formal fairness. At this point, the control system may be designed to assign bonuses in a way that works for the sales department but offers no incentive to the people in other departments who should be supporting the sales force. If managers use the system fairly, they can do two things. Either they can adopt reparation policies in the short run, adjusting the bonuses for the support people. Or they can work to bring about changes in the incentive schemes, so that people in the support departments are evaluated and rewarded based on the support they actually provide.

Perverse goal congruence

When the formal management control system design is fair and the system is used unfairly, there is room for dysfunctional learning. Dysfunctional learning occurs because in order to remedy injustices arising from the use of the system, people will demand changes in the system itself and call for the establishment of stricter rules that are harder to adhere to, as suggested in Merton's control model (Hopwood, 1974; March and Simon, 1993). This can have consequences that run counter to formal fairness and in the direction of decreasing goal congruence.

When people suffer an injustice, their first reaction is to blame the formal system (Cropanzano and Byrne, 2001). This can lead to changes in the system aimed at preventing future injustices. In the process, the system becomes more rigid and loses its flexibility; as the complexity of the system increases, it tends to generate distrust, leading to the institutionalization of adversarial

relationships (Cropanzano and Byrne, 2001, p. 34). Highly formalized systems also tend to include too many rules, which are likely to contradict one another and are harder to adhere to.

Another consequence is the dysfunctional learning that takes place in managers. Through using the system unfairly, unfair managers learn how to “cheat” the system every time a new rule is introduced. They become better and better at doing this until, in the end, they fully master being unfair (Aristotle, 2000). In these two cases, injustices are unlikely to be repaired, as people either call for more rules or, in the case of managers, learn how to be more unfair by defeating the system and any new rules. In summary,

Proposition 10a: Unfair use of a formally fair management control system design creates perverse goal congruence. Emphasis on rules makes the system more formally unfair, while decision makers become increasingly unfair as they learn how to circumvent the system.

Both types of dysfunctional learning, by managers and by people calling for more rules, can transform a formally fair system into a formally unfair one and lead to total goal incongruence and so to lower levels of identification by individuals with the organization.

This situation is unstable and tends to deteriorate, as learning does not increase in the right direction. Injustices are not repaired (even if formal mechanisms for repair are present) and the system does not change for the better (e.g., through replacement of formally unfair rules, rather than through a mere increase in the number of rules) (Cropanzano et al., 2007). The use of the system made by an unjust manager typically leaves room for enough excuses to explain its misuse (Aristotle, 2000).

We have already explored the possible role of deviation-amplifying processes in the situation of occasional goal congruence. In this case, the effect of the amplification is negative, as the starting point is the unfair use of the fair control system (Ashton, 1976; Maruyama, 1963; Weick, 1979; Wender, 1968). Maruyama concludes that in systems in which two variables are interdependent, there can be deviating effects that amplify both variables concerned. Thus, when one variable decreases, the other decreases as well, and so on in turn until, in the end, they either reach a stable state of equilibrium or decrease continuously over time. In our case, it is clear that informal unfairness reduces the formal fairness of the system, which in turn reduces the informal fairness, until the situation becomes one of total goal incongruence.

This type of deviation-amplifying effect has already been explored in relation to the unintended effects of management control systems (Ashton, 1976). Ashton considers that management control systems can create intended or unintended functional or dysfunctional consequences. Where the consequences are unintended and dysfunctional, management control systems end up breaking down, precisely because of the deviation-amplifying effects of those unintended, dysfunctional consequences that we have mentioned (Ashton, 1976, p. 290).

Applied to our case, we can see that where informal unfairness is present and people perceive unfairness, they usually ask for greater formal fairness (Cropanzano and Byrne, 2001). Asking for more formal fairness has the unintended, dysfunctional effect of increasing informal and formal unfairness (Cropanzano and Byrne, 2001). Finally, formal and informal unfairness drive a loop of mutual deviation-amplifying effects that makes both types of unfairness increase incessantly over time.

This unfairness learning process is highly dynamic and has no clear end situation, although we can imagine that it will end with the destruction of unity inside the organization. People who

are on the receiving end of unfair decisions through formally unfair systems will behave accordingly towards the organization, losing commitment and gaining motivations that work against organizational interest alignment or goal congruence (Gottschalg and Zollo, 2007).

Another consequence that leads to destruction is the failure to develop core competences, as people do not receive what they deserve in return for the contributions they make (Alexander, Sinclair, and Tetrick, 1995). People will quit for more favorable organizations that show more consistency between management control design and use. In summary,

Proposition 10b: Perverse goal congruence tends towards total goal incongruence, as people identify less and less with the organization.

Perverse goal congruence can arise when succession takes place suddenly in a top position in an organization. The selection process may have been formally fair, but the new holder of the position is not fair in her actions. Generally speaking, when recruiting processes take place under time pressure, it is difficult to assess the degree of real fairness that people will show later on. At the time of recruiting, people tend to talk about fairness in theoretical terms; but it is impossible to guarantee that decisions will be taken fairly when the system is used in the future.

In these situations, the fact that a new top manager may use the system unfairly may not be a real problem in the short run; but it can become problematic, as small shifts in the use of the system turn previously fair formal rules into unfair ones. As this often goes unnoticed, by the time real damage has been done, the situation is difficult to reverse.

Total goal incongruence

When a formally unfair management control system design is used unfairly, there is total goal incongruence and organizational members cannot possibly identify with the organization. We have already explained the consequences of organizational injustice. In general, perceptions of injustice have adverse organizational consequences (see e.g. Colquitt et al., 2001; Greenberg, 1990b), and need to be managed through systems and managers (Cropanzano et al., 2007). Those consequences may end up destroying value, because people tend to engage in behaviors that are intended to damage the organization (Brockner and Greenberg, 1990; Greenberg, 1990a). In the end, the motivations of the organization and its members become misaligned, as there are motivations to create such a misalignment (Gottschalg and Zollo, 2007).

Proposition 11a: A formally unfair management control system used unfairly leads to total goal incongruence.

This situation corresponds to a stable state of equilibrium, as individuals have no motivation to work for the organization. Negative learning drives the organization toward a more extreme situation of unfairness (Maruyama, 1963). There is consistency between the system and the way it is used. Every time the management control system is used, the organization deteriorates. The organization becomes a very unjust place to work and people either plan to leave the organization or else try to survive inside it by isolating themselves from their surroundings.

Proposition 11b: In a situation of total goal incongruence, people will gradually lose their identification with the organization, until they do not identify with it at all.

The consequences of what we have explained above are very important for the management control systems literature. When a situation of injustice appears, people tend to put the

emphasis on system design and call for the introduction of new rules to increase the level of fairness (Cropanzano and Byrne, 2001). System design is important, but we argue that how people use the system is more important, as the willingness to be fair is more powerful than a perfectly fair formal system, as people are motivated to engage in behavior that can improve the current state of affairs (Finnis, 1980).

We argue that the emphasis should be on fairness in the use of the system. Fairness when using the system is what makes corrections to the system possible, where there is scope for improvement. Also, where there are too many rules, fairness may suggest that certain rules be omitted, so as to keep the system simple. The subjective element that fairness introduces into the system is thus crucial and essential to achieving stable goal congruence and full identification with the organization on the part of organizational members, both of which are core objectives of management control systems.

Putting the emphasis on fairness in the use of the system can result in generally fairer organizations and greater goal congruence (Cropanzano et al., 2007; Cropanzano and Byrne, 2001). If the emphasis is on formal control design and fairness is omitted, the organization is likely to end in a situation of total goal incongruence, which is very difficult to turn back into goal congruence. For this reason we have a final proposition:

Proposition 12: To achieve greater goal congruence and closer identification with the organization on the part of organizational members, emphasis must be placed on using the system more fairly rather than on making the system itself more formally fair. If the system is used fairly, it will eventually become formally fairer.

Conclusions

To conclude, attempts have been made in management control research to empirically show the importance of fairness. However, there is no theoretical work that deals in depth with the role of fairness in management control systems and the way they are used. We believe that by providing meaningful propositions and, based on these propositions, hypotheses to be tested in the future, we can contribute to the theoretical discussion and help to develop research. Vancil was the first management control systems theorist to put fairness at the heart of goal congruence arguments. Vancil recognized that goal congruence and fairness are prerequisites for management control system design. However, we believe that a more thorough conceptualization of fairness in system design and, more importantly, in system use can reveal a possible cause-effect relationship between fairness and goal congruence. We believe that this theorizing is necessary in order to go one step further and lay the foundations for the next generation of management control systems.

As stated above, we want to stress that management control systems have both formal and informal components: every management control system includes an implementation part, so the system needs to be managed. System management is subjective, as it involves managers' making decisions and acting in relation to outcomes and procedures when the system is used in a specific context. Formal fairness requirements therefore need to be linked to formal controls, and fairness requirements to informal, subjective controls. Our proposed model considers managerial action and management control system design in combination, and it shows which combination of the two is most conducive to goal congruence over time.

We have made a great effort to bring together the literature on management control systems, the recent literature on organizational justice, and recent empirical attempts to combine the management control and organizational justice literatures to show that all three are necessary in order to analyze organizational situations involving management control. We ended this section by stating the requirements for a formally fair management control system and the requirements for fair use of such a system.

After that, we went a step beyond formal fairness by including aspects of how the system needs to be used fairly. This allows us to finally give a specific role to the informal aspects of control systems that previously have been largely neglected. Fairness in the use of control systems, though largely informal, has already been measured in the organizational justice literature and can be studied empirically. Furthermore, we have found a specific role for fairness that makes sense in the management control literature. This role has been intuitively acknowledged in practice but only partially explored empirically. This provides a theoretical grounding for future empirical research, which is a necessary step before any progress can be made in this important stream of research into the role of organizational justice in management control systems.

Furthermore, we have tried to ground the role of organizational justice in the core of the management control literature and have developed a model of goal congruence as an effect of the fairness of the system's design and the fairness of its use. This leaves us with a range of possible goal congruence situations that lead to different learning dynamics over time. We have found that there are two stable states, which we have labeled total goal congruence (where the system is formally fair and the user is fair) and total goal incongruence (where the system is formally unfair and the user is unfair). We also find two unstable states in which goal congruence is occasional (formally unfair system used fairly) or perverse (formally fair system used unfairly).

Where there is perverse goal congruence, the system tends to evolve towards total goal incongruence, because even though the system is formally fair, it is overruled and defeated by its users. As managers do not have the will to increase justice within the organization, perceptions of injustice are created and no mechanism is established for repairing injustices. In the end, the system becomes increasingly formally unfair. The only learning that takes place is negative evaluative learning, as a result of which people learn to act unfairly or else suffer the unfairness of others, while losing their commitment to the organization.

Where there is occasional goal congruence, positive evaluative learning takes place and managers strive to be fair, subjectively seeking immediate solutions to repair the injustices caused by a formally unfair system. In the end, the system itself improves. This learning increases managers' fairness and eventually transforms the situation into one of total goal congruence.

For this reason, we argue that subjective aspects of justice, manifested in the way the system is used, are capable of improving the organization and increasing people's identification with the organization's mission and their commitment to its goals. Over time, this leads to greater goal congruence. In contrast, concentrating exclusively on system design leaves an element of unfairness, so that if there is no willingness to be just, the system may end up worse off and the organization may suffer from total goal incongruence.

We think that our model allows a deeper understanding of why justice is so important and why subjectivity is unavoidable, making the notion of a perfect mechanical design that needs no people and creates a stable situation of goal congruence unrealistic. In contrast, having people

who are trained and willing to be fair is a starting point for creating better control systems and better organizations.

We need to be cautious in dealing with intermediate situations that depart from our stereotyped four states. We have mentioned that systems can be partially formally fair. This can mean departing from our ideal situations. At the same time, we can have different levels of informal fairness. For the same level of actual formal fairness, depending on the level of informal fairness, goal congruence can improve more or less quickly. We can give an example following our requirements of informal fairness. If informal fairness is strong in non-arbitrary actions but the willingness to be fair and repair flaws in the system is weak, then it seems quite clear that the evolution towards a fairer formal system will be different from the opposite situation, where arbitrariness is present and there is a willingness to repair injustices and act fairly. In the former case, the progress towards goal congruence may be slower. As we mentioned, our four states are a means of understanding the problem of goal congruence and solving it by imposing organizational justice conditions on the formal and informal elements of the system. We agree that further research will need to consider the differing capacity of different aspects of informal fairness to improve formal systems, thus creating better goal congruence. We also need to increase our knowledge through empirical research that examines whether and to what extent these states and dynamics actually exist. Such future research will also help to refine the model and provide a clearer understanding of intermediate situations of formal fairness.

Implications for empirical research

We mentioned that the more recent literature has taken note of possible links between fairness perceptions and control systems. In this paper we have tried, first, to take a step back and formulate a theoretical explanation of fairness of the formal system and fairness of the use of that system, and how these two lead to goal congruence and identification over time. This allows us to establish a theoretical grounding for justice at the core of the management control systems literature, in the form of the propositions stated in the previous section.

We think of this as a starting point. We believe that providing a tentative set of testable hypotheses is necessary and fruitful, in that it will elicit empirical evidence for our proposed explanations of how formal and informal fairness need to be embedded in control systems.

Empirical evidence will increase our knowledge of the matter and show to what extent our proposal reflects reality. It will also help to refine the proposed framework. Eventually, it could lead to an extension of these theoretical explanations to cover other aspects of justice in control systems that are not explored here. We must therefore carefully select the hypotheses to be examined first, as they will provide useful guidance and help tackle future empirical research on this topic.

Related with proposition 8a

Hypothesis 8a.1: In a system perceived as formally fair and as being used fairly, people will show high levels of organizational commitment, and those levels will increase over time (compared to a system perceived as formally unfair and as being used unfairly).

Hypothesis 8a.2: In a system perceived as formally fair and as being used fairly, there will be higher levels of identification with the organization's mission (compared to a system perceived as formally unfair and as being used unfairly).

Related with proposition 9a

Hypothesis 9a.1: Perceptions of the overall justice of a management control system increase when the system manager is perceived to have acted fairly.

Hypothesis 9a.2: In a formally unfair control system that is perceived as being used fairly, people believe in the future justice of the system.

Related with proposition 10

Hypothesis 10a.1: Perceptions of the formal fairness of a management control system decrease when the system is perceived to have been used unfairly.

Hypothesis 10b.2: Individuals' identification with the organizational mission in a formally fair control system decreases when the system is perceived to have been used unfairly.

Related to proposition 11

Hypothesis 11a.1: In a system perceived as formally unfair and as being used unfairly, people will be predisposed to engage in unethical behavior (compared to a system perceived as formally fair and as being used fairly).

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