Claus Jacobs and Loizos Heracleous

"Seeing Without Being Seen"
Toward an Archaeology of Controlling Science

Abstract: What is the relationship between current German management accounting techniques (referred to as "Controlling" in German-speaking areas), Taylorism, and an eighteenth-century prison design by Jeremy Bentham, the Panopticon? Using a Foucauldian "archaeological" approach combined with "genealogical" concerns, we argue that panopticism as a disciplinary instrument and as an organizing metaphor can still be discerned in current German management accounting concepts as well as in one of its conceptual ancestors, Taylorism. Our analysis constitutes a critical reflection of the impacts of panopticism as an underlying metaphor for present-day German management accounting, especially with regard to the "successful" implementation of management accounting tools and their organizational consequences.

Claus Jacobs is Ph.D. candidate at the School of Business Studies, Trinity College, Dublin, Dublin 2, Ireland (Tel: 353–1–6082257; fax: 353–1–6799503; email: jacobse@tcd.ie). Loizos Heracleous is associate professor at the Department of Business Policy, Faculty of Business Administration, National University of Singapore, Singapore 117591 (Tel: 65–8743142; fax: 65–7795059; email: fbaht@nus.edu.sg). The authors wish to thank the guest editors of this issue of International Studies of Management and Organization; the journal editor, Professor Jean Boddewyn; Professor E. Kappler, Dr. T. Scheytt, and Dr. M. Habersam of the Institute for Organisation and Learning, University of Innsbruck; and two anonymous reviewers for their insightful and constructive comments on earlier drafts of this article. Claus Jacobs gratefully acknowledges the financial sponsorship of Deutscher Akademischer Austauschdienst, which allowed his participation in the Fourth International Conference on Discourse and Organization at King’s College, London. Loizos Heracleous gratefully acknowledges research funding from the Faculty of Business Administration, National University of Singapore.
The Panopticon is a machine for dissociating the see/being seen dyad: in the peripheric ring, one is totally seen, without ever seeing; in the central tower, one sees everything without ever being seen.

Michel Foucault, *Discipline and Punish* (1977c, p. 202)

Using a Foucauldian archaeological approach combined with genealogical concerns, we propose in this article that Jeremy Bentham’s Panopticon, a prison designed to observe the inmates in a way in which they are unable to see the guards, can still be discerned in current German management accounting concepts and their application to other organizational domains. Foucault (1977c) used the Panopticon metaphor to explain the development of disciplinary practices such as hierarchical observation and normalizing judgment (the identification and sanctioning of deviations from a given norm) in different institutions of society. The Panopticon is a highly efficient instrument for controlling and influencing individual behavior, as the assumption of being observed is often sufficient to induce the expected behavior. In other words, the Panopticon principle creates self-discipline, that is, the observed person exercises behavioral self-control (without necessarily internalizing the norms of the observer).

The term “Controlling” is a foreign word in German: the capitalized English term has been used since the 1950s in German-speaking areas to denote management accounting techniques that are firmly rooted in a traditional theory of costs and cost accounting techniques.1 “Controlling” should therefore not be identified with a theory of control and monitoring in an Anglo-Saxon tradition. Mainstream proponents of Controlling view management accounting essentially as a practice aimed at rendering visible and measuring individual as well as organizational performance, and thus propose an efficient control and management system as a contributing factor to a company’s ability to change and innovate (Horváth, 1996; Kupper, 1995; Weber, 1995). We propose that some scholars analyzing Controlling often do not recognize that their suggestions implicitly contribute toward the operationalization of panopticism and the creation of an organizational prison, in a metaphorical sense, thereby ironically stifling the very capability for organizational change and innovation that they are aiming to enhance.

Drawing from Foucault’s (1977c; 1997) work and Hopwood’s (1987) interpretation of the archaeological approach, we aim to examine the historical conditions of German accounting concepts (“Controlling science”), that is, to identify the historical “ancestors” of such concepts. Doing so helps to fulfill the genealogical aim of identifying how the dominant, unitary, and totalizing discourse of Controlling science produces its own “truth” effects that are bound up with power differentials. Highlighting this process allows us to critically evaluate its effects and is the first step toward enlightened action. We proceed in three archaeological moments: First, we examine the conceptual foundations of Controlling science as exhibited by key authors in this area. Second, we identify functional similarities of
these conceptions with Taylor’s scientific management, shown to be a conceptual ancestor of Controlling science. Third, we show that panopticism is a common unifying metaphor for both Taylorism and Controlling science. In the final section, we discuss in more detail the effects of panopticism on Controlling science.

We propose that Controlling scientists may be somewhat myopic to the historical foundations of the concepts they unconditionally espouse. It might thus be helpful to raise the awareness of the discourse-restricting effects of designed and implemented management accounting concepts. As Argyris (1994a, 1994b) states, naively implemented management accounting systems will lead to defensive routines of the agents so that no valid information can be gathered from the accounting system; ultimately leading to wider organizational and behavioral dysfunctions. For both theorists and practitioners designing, implementing, and running a management accounting system, the fact that the system may have unintended and surreptitious effects on action through its assumptions based on panoptic principles has to be made explicit and critically evaluated.

Given that metaphors can illuminate hidden aspects of the domain they are applied to (Lakoff and Johnson, 1980), we suggest that by using the metaphor of the Panopticon to explore the “ancestors” of management accounting concepts its surreptitious effects can be identified. The archaeological deconstruction of Controlling science in terms of the Panopticon principle introduces a historical “depth of focus” that enables both theorists and practitioners to gain a deeper understanding of the current operations and organizational consequences of control systems through a more elaborate understanding of their historical antecedents.

The archaeological approach and genealogical concerns

The archaeological approach

[Archaeology’s] problem is to define discourses in their specificity; to show in what way the set of rules that they put into operation is irreducible to any other; to follow them the whole length of their exterior ridges... It defines types of rules for discursive practices that run through individual oeuvres, sometimes govern them entirely, and dominate them to such an extent that nothing eludes them. (Foucault, 1997, p. 139)

For Foucault, the archaeological approach aims to analyze discourses through an identification of the overriding rules that structure and determine them. Foucault has far from provided a clear definition of discourse, however. At least five interrelated meanings have been given to discourse in The Archaeology of Knowledge: (1) discourses as groups of statements; (2) discourses as rule-bound practices; (3) discourses as practices specified in archives; (4) discourses as practices constituting objects; and (5) discourses as totalities determining subject positions (Heracleous, 2000). Foucault views discourses as groups of statements that “be-
long to the same discursive formation . . . for which a group of conditions of existence can be defined” (1997, p. 117). Discourses are determined by “a body of anonymous, historical rules” (ibid., p. 117), and “systematically form the objects for which they speak” (ibid., p. 49).

Drawing from Foucault’s discussion of discursive practices, we view Controlling science as a discursive practice that has real effects on organizational functioning through its production of “truth” (advocating the best way to organize and control individuals to maximize functional outcomes). Foucault (1977a, pp. 199–200) has provided a succinct view of the nature and operations of discursive practices:

Discursive practices are characterized by the delimitation of a field of objects, the definition of a legitimate perspective for the agent of knowledge, and the fixing of norms for the elaboration of concepts and theories. Thus, each discursive practice implies a play of prescriptions that designate its exclusions and choices. . . . Discursive practices are not purely and simply ways of producing discourse. They are embodied in technical processes, in institutions, in patterns for general behavior, in forms for transmission and diffusion, and in pedagogical forms which, at once, impose and maintain them.

Burrell (1988) suggests that the archaeologist seeks to identify “the Same in the Different,” to “uncover those rules which regulate and govern social practices, and which are unknown by the actors involved” (Burrell, 1988, p. 229). It is assumed that “partial distancing from these institutional bonds” is possible “by bracketing of accepted truth.” The key role of a researcher using an archaeological method, in this view, is to act as an “excavator” who reveals “depth and interiority.”

Hopwood (1987) applies this kind of archaeological method to management accounting systems. He points to the interrelation between accounting system and organization, which are seen as inextricably linked. He argues that in the organizational context accounting regularly surpasses its simple monetary reproduction of organizational activities; every accounting technique provides a new perspective on the organization and renders new things visible. Consequently, new organizational practices are invented, to which the accounting system must react again. Accounting may thereby become an enabler for organizational change, including the possibilities for and necessity of its own transformation. Due to such a mutual process of interaction and change, accounting can no longer claim to be a neutral, apolitical, detached function within the organization (Hopwood, 1987, p. 228). An archaeological approach allows the researcher to trace back organizational history as well as theoretical history in order to identify conceptual ancestors of current accounting tools and instruments in their social and organizational context (e.g., Hoskin and Macve, 1986; Miller and Hopwood, 1994; Puixty, 1993). In order to explore Controlling science, we thus “carefully and cautiously sort through the sediments” (Hopwood, 1987, p. 230) of German management accounting concepts—the first step toward an archaeology of Controlling.
Genealogical concerns

Around the time *The Archaeology of Knowledge* was published, Foucault questioned the alleged neutrality of knowledge and truth and argued that "selfish interest" comes before knowledge (1977a, p. 203). Shortly after that, in a discussion with Deleuze, he noted that "the question of power remains a total enigma" (1977b, p. 213) that should be further investigated. Such comments were a clear indication of Foucault's subsequent genealogical interests with the nature and operations of power and its interrelation with knowledge. A few years later, for example, he stated that "the formation of discourses and the genealogy of knowledge need to be analyzed . . . in terms of tactics and strategies of power" (1980a, p. 77). Foucault's thinking on discourse in *The Archaeology of Knowledge* had thus subsequently moved to concerns with power/knowledge links where discourses are manifestations of the "will to power":

We should admit rather that power produces knowledge . . . that power and knowledge directly imply one another, that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations. (Foucault, 1977c, p. 27)

Foucault's genealogies aim in particular to oppose dominant, unitary, tyrannical discourses and their claims of "truth," and to allow alternatives to be seen and previously marginalized voices to be heard (Foucault, 1980b). Despite the differences between his archaeological and genealogical periods, Foucault (1980b, p. 85) posits a continuity in his work in terms of archaeology as a method and genealogy as praxis:

"Archaeology" would be the appropriate methodology of this analysis of local discursivities, and "genealogy" would be the tactics whereby, on the basis of the description of these local discursivities, the subjected knowledges which were thus released would be brought into play.

In this context, we conduct an archaeological analysis of Controlling science as a discursive practice, taking into account genealogical concerns that highlight how this discursive practice produces "truth" or "knowledge" that is far from neutral but is intimately bound up with considerations of power and control that need to be made explicit and critically evaluated.

Critiques of Foucault's work

Foucault has been criticized on several fronts, including for his impenetrable writing style (Kermode, 1994), the employment of logical tautologies and ambiguities (Brown and Cousins, 1994; Frank, 1992), the structuralist separation of discourse from its context in the archaeological approach (Habermas, 1987, p. 250), his refusal to accept human subjects as anything other than determined by discourse, and the consequent difficulties in theorizing human agency and its possibilities.
(Freundlich, 1994; Newton, 1994, 1998; Racevskis, 1994), as well as his "refusal to retain one position for longer than the period between his last book and the next" (Burrell, 1988, p. 222).

Brown and Cousins (1994, pp. 198–99), for example, emphasize the ambiguity of Foucault's use of "rules" of discursive formation and its implications:

The question must remain. What are these rules and how do they function? . . . Without the regularity of statements it would be impossible to cohere a discursive formation into a definite identity, even while stressing that this "identity" is composed of divisions and differentiations. But this loads the concept of rule with so many disqualifications that it is difficult to see how Foucault's tree of derivation can permit the specification of a regularity. It is not so many things that it is difficult to see what it is. This difficulty is compounded by the fact that the rule functions in three different ways. . . . Possibility, regulation and regularity all tend to be run together in the service of protecting the discursive formation. It begins to seem that it is the very concept of discursive formation which is at risk. . . .

Foucault's refusal to accept the relevance of human agency for analytical purposes in his archaeological period is particularly problematic. In The Archaeology of Knowledge, for example, Foucault stated that the position of speaking subjects is determined by anterior systems of discourse: the enunciative domain (the domain of things said) is thus "an anonymous field whose configuration defines the possible position of speaking subjects" (1997, p. 122). In earlier writings he had stressed that discoursing subjects form a part of the discursive field—they have their place within it . . . and their function. . . . Discourse is not a place into which the subjectivity intrudes; it is a space of differentiated subject-positions and subject-functions. (Foucault, 1991, p. 58)

 Critics have maintained that even in his genealogical period Foucault advances a "theory of subjectivity which leaves out the subject," in the sense that explanation at the level of the subject is generally avoided (Newton 1994, p. 894). There is no account of how, for example, individuals choose where to position themselves in relation to discourses, or how they can actively negotiate with, manipulate, or employ discursive practices for various ends.

 Our own position with regard to agency is not a deterministic one. We believe that for critical analyses to hold any possibility of making a difference, agency must be seen as the capability to make choices and take action (Giddens, 1984, p. 9). In this sense, our concern to unmask the implicit panoptic assumptions in Controlling science is aligned with Foucault's later genealogical writings, as discussed above.

 Notwithstanding critiques to Foucault's work, it has served to problematize existing institutional and organizational arrangements. Researchers are urged not to take these arrangements for granted but to question and probe the historically contingent processes involved in institutional production and reproduction; as well as in institutional consequences for practice (and indeed potential praxis).
Introducing the archaeological site of Controlling science

The different theoretical and practical perspectives on Controlling can be summarized surprisingly easily: Controlling is concerned with ensuring rationality in management. (Weber and Schäffer, 1999, p. 743)

We draw the core premises of Controlling science from three authors---Weber (1995), Küpper (1995), and Horváth (1996)---who have successfully published standard textbooks and are considered major proponents of the Controlling discipline in Germany. Beyond these textbooks, we draw from the debate within the discipline over the past ten years or so. At the center of this debate has been Controlling science's emancipation from management accounting on the one hand and general management on the other in order to establish an independent theoretical field (e.g., Küpper, Weber, and Zund, 1990; Müller, 1996; Schneider, 1991a, 1991b, 1991c; Weber, 1991, 1995; Weber and Knorren, 1998).

The international debate on management control and management accounting has been significantly concerned with its organizational and social context (Puxty, 1993). Whereas the Anglo-Saxon tradition has been concerned with timely information for decision-making, historically Controlling and its cost accounting techniques have focused on the production processes of the firm, hence its emphasis on technical rationality.

According to proponents of Controlling theory, its key purpose is to ensure rationality of management (e.g., Weber and Schäffer, 1999). This claim of Controlling theory to provide and contribute to, what could be considered a metacoordination of management is complemented by its suggested operationalization through traditional cost accounting tools. It is the aim of this article neither to critically examine conceptual inconsistencies resulting from this rather ambitious claim and its operationalization through cost accounting, nor to assess the appropriateness of these cost accounting tools in light of this claim. But an awareness of these aspects should provide some clarity for readers unfamiliar with Controlling concepts.

For the purposes of our investigation, we will mainly draw from the textbooks of proponents of mainstream Controlling (Horváth, 1996; Küpper, 1995; Weber, 1995). We do, however, recognize theories and approaches in German organization theory (e.g., Baecker, 1999a, 1999b; Kirsch, 1992, 1997a, 1997b; Ortmann, 1995; Ortmann et al., 2000) as well as in Controlling theory (e.g., Kappler, 1999, 2000; Habersam, 1997; Scheytt, 1997; Scheytt et al., forthcoming; Baecker, 1992; Willke, 1989) that are more concerned with their own underlying epistemological assumptions.

Controlling science as part of Betriebswirtschaftslehre, general business administration science in German-speaking areas, distinguishes two main functions in a company: management and operations. The coordination of operations through the management system is called primary coordination (Weber, 1995, p. 34; Horváth, 1996, p. 124).
Due to the increasing complexity and size of businesses, division of labor and specialization increases within the management system as well. Controlling theory identifies five subsystems within the management system: planning, control, organization, information, and personnel. The function of Controlling is to ensure rationality within the management system (Weber and Schäffer, 1999), and to centrally coordinate organizational subsystems. Since the most prominent function of management is to coordinate operations, Controlling theory's aims of coordinating the management system can be seen as a claim of metacoordination. Hence the focus on coordination in Controlling theory's conceptual framework.

Coordination as Controlling's main function denotes a goal-oriented intervention to align interdependent elements. Weber (1995) proposes "coordination through plans" as the most efficient form of coordination. Consequently, the planning system is of outstanding significance to Controlling theory: Planning has to ensure efficiency of management and strategic alignment toward the goals of the organization. Moreover, through planning, a rational, outcome-oriented design of the future can be anticipated. Rationality in this context means "to proceed consciously and goal-oriented" (Küpper, 1995, p. 59). Control is indispensable for the planning process in terms of identifying deviations from the plan. The information system is considered as a service function to provide the "relevant" information for the management system in depicting the organization faithfully. Within the personnel system, reward and incentive schemes, including traditional career development tools, should produce an appropriate goal-orientation of the individual organizational member (Weber, 1995).

Archaeology of Controlling, I: Examining conceptual foundations

Interrelationship between theory and practice

Controlling theory as a whole strives to meet the standards of the dominating, mainly quantitative "general business administration science," which represents prescriptive, technocratic management theory in the German-speaking countries. General business administration science aims to explain management practice and, secondarily, aims to prescribe management practice (e.g., Gutenberg, 1951; Heinen, 1991). Controlling as a "subsidiary science" thus adapts this relation between theory and practice: "theory precedes practice."

With regard to practice, Controlling is disguised as cost accounting that creates "neutral" information using "neutral" tools. Controlling theory's focus on the development of "neutral" tools reduces the potential theoretical scope of such cost accounting tools. In neglecting to engage in critical reflections on the theoretical foundations of Controlling science and on the organizational impacts on Controlling practice, methodological and epistemological aspects are not adequately addressed by its proponents.
Epistemological and methodological orientations

The personnel, information, and controlling systems are conceptualized in Controlling science as instruments for an efficient planning system. This conceptual hierarchy of subsystems suggests an ontology of organization within Controlling science: "The company has an organization," as opposed to "The company is an organization" (Smircich, 1983). Thereby, organization in Controlling science is reduced to a structure for executing the orders defined by the planning system (Weber, 1995, p. 229).

German business administration science in general, and Controlling science in particular, thereby follow epistemologically a covering-law approach. Real-world problems are decontextualized, aggregated, and "translated" into generalizable, abstract problems to which the scholar finds adequate, abstract solutions (Horváth, 1994, p. 89). These prescribed solutions are then to be applied by the Controlling practitioner with a real-world problem. It is the practitioner's responsibility to meet the "proper standards" set by Controlling science (Scheytt, 1997; Habersam, 1997). The organization is reduced to a tool of plan fulfillment, and its members are seen as resources to be efficiently allocated in the planning process. In terms of Controlling theory, participation and training in that context has no other goal than to implement planning-related decisions by management. Controlling science is thus positivist, nomothetic, and abstract, firmly rooted in the functionalist paradigm (Burrell and Morgan, 1979; Puxty, 1993).

Planning and plans

According to Controlling proponents, through plans, an organization can anticipate future conditions in order to define and identify goal-oriented options. Plans are seen as means to master the present and future of the company. Planning is therefore the most efficient coordinating instrument for achieving goal orientation, rational decision-making, and strategic alignment of functions. Although Horváth (1994, 1996), for example, concedes that planning is a highly political process within the company, in his conceptualization of Controlling he emphasizes structural rather than procedural aspects of planning. Planning processes and their potential contributions to organizational change are not addressed. Controlling science focuses on plans as results and on the formal and structural aspects of planning, rather than on planning as a process (Habersam, 1997, p. 125). Since Controlling science assumes that one future can be effectively anticipated through planning and prognosis, its blind spot of ignoring the procedural aspects of planning and of wider organizational facets is not surprising.

Behavioral framework

Agency theory (Eisenhardt, 1989) is used to model human behavior within Controlling science. It assumes a bounded, rational agent who acts under uncertainty
while maximizing individual benefit (Horváth, 1994, p. 121; Küpper, 1995, p. 59). Agency theory owes its reputation within the Controlling science community to its three major disciplinarist instruments: (1) rewards that lead to goal-oriented behavior; (2) norms to directly influence the agent's behavior; and (3) the establishment of a monitoring system to reduce the existing information asymmetry between principal and agent. Since Controlling theory draws conceptually from Agency theory, its disciplinarist instruments can be seen from a Foucauldian viewpoint as hierarchical observation and normalizing judgment. These are key aspects of a regime of disciplinary power that should be explored when examining this area. In sum, Controlling as positivist, determinist, and nomothetic science is rooted in the functionalist paradigm (Burrell and Morgan, 1979).

It is worth examining Taylor's scientific management ([1911] 1993) as a conceptual ancestor of controlling science for three primary reasons. In the first instance, and as a preliminary consideration, Taylor's scientific management ([1911] 1993) is considered an influential classic in organization theory and management studies (Bedeian and Wren, 2001), so further understanding of its nature and effects would be useful to organization theorists and management scholars (Wrege and Hodgetts, 2000).

Second, the high degree of similarity between Taylorism and Controlling science, in epistemological and methodological terms (including Taylorism's very strong emphasis on improving organizational efficiency through control of individuals), suggests the potential fruitfulness of further examination, especially given that Taylorism predates Controlling science. Historical studies, for example, suggest that Taylorism exemplifies

a shift from personal to impersonal control, a shift from the personal and indirect exercise of supervisory and disciplinary powers . . . to systems of bureaucratic discipline and finally the development of increasingly elaborated systems of collecting, storing and processing information. (Dandeker, 1990, p. 196)

The Taylorist functional supervisory system is a clear illustration of "uniform operating procedures . . . planned and monitored from an office of central staff which stood at the apex of a functionally differentiated labor management system" (Dandeker, 1990, p. 185).

Third, Taylorist influences on Controlling theory's ontological and epistemological orientation can be discerned from another direction; within German general business administration science and the writings of its prominent proponent, Erich Gutenberg (1929, 1951), further suggesting the potential fruitfulness of pursuing this link.

Gutenberg's microeconomics-based approach aimed to develop an objective, universal theory of the production enterprise, using cost accounting considerations to determine a theoretically achievable optimum. This would be achieved by applying a functional rationality while excluding any empirical "disturbances" such as organizational, social, or human factors. Both Gutenberg's and Taylor's ap-
proaches are clearly rooted in a managerial, functionalist paradigm. Gutenberg can be considered an ancestor of Controlling science in German-speaking areas. While acknowledging Gutenberg’s similarities with Taylorism and his influence on Controlling theory, we limit our investigation here to Taylorist influences, given that an international audience might be more familiar with it, due to limited space and for higher clarity of argument.

Archaeology of Controlling, II: Taylor’s scientific management as an ancestor of Controlling science

[The] organization consisted ... of one set of men, who were engaged in the development of the science of laboring through time study; ... another set of men, mostly skilled laborers themselves, who were teachers, and who helped and guided the men in their work; another set of toolroom men who provided them with the proper implements and kept them in perfect order, and another set of clerks who planned the work well in advance ... and properly recorded each man’s earnings. (Taylor, [1911] 1993, p. 70)

Taylor’s scientific management is based on individual work instructions and remuneration: the task and bonus system. Scientific in this context denotes the endeavor, using time and motion studies, to emulate the methodology of natural scientific experiments with the aim of identifying universal principles of efficient functioning (the positivist approach). The labor office and the functional clerks are accountable and responsible for these studies by observing and measuring individual performance on the shop floor. Scientific management aims to render “visible” the individual worker and his performance (Taylor, [1911] 1993, p. 129) through the panoptic principles of hierarchical observation (by functional clerks) and normalizing judgment (whether the set production quotas are met, the deviations noted, and appropriate reward or sanction handed out).

Taylor identified the waste of resources at the national and corporate levels as the key problem of his time. He diagnosed the dominance of “rule-of-thumb” practices at the workplace and assumed that human nature has a preference for shirking. The management style that built on the worker’s ability for motivation and self-management was no longer seen as able to cope with these two factors. Taylor strived to challenge waste and its causes by keeping detailed records and conducting analyses of single moves in order to extrapolate generalizable principles. The goal was to identify the best physiological way to fulfill a task and to identify the appropriate, corresponding working tool (Taylor, [1911] 1993, p. 67).

Based on individual time and motion studies, the daily workload for each worker and the most efficient way of producing it were defined. The workload represents an individual norm that is directly linked to the remuneration of the worker. The task and bonus system is based on four principles. First, the traditional rule-of-thumb method is replaced by systematic and “scientific” handling of each work
element. Second, the appropriate workers are identified, trained, and instructed, instead of the previous system of leaving the work and training up to the workers themselves. Third, hearty cooperation has to be established between the worker and the clerks to motivate the worker to follow the instructions. Finally, work and responsibility are reallocated between worker and management so that workers who were bearing both the responsibility and the work can now concentrate on just the work itself (Taylor, [1911] 1993, p. 36).

The “relief of this burden” was seen by Taylor as necessary, because too much had been demanded from the worker in the past. Not only did the worker have to prepare his work, choose his tools, and physically do the work, he also had to coordinate and manage his work. According to Taylor’s new division of labor, it is the labor office that should be responsible for the systematic preparation of tasks as well as the choice of the right tools.

The task and bonus system is based on highly individualized work instructions that required detailed knowledge about a worker and his performance, strengths, and weaknesses. Time and motion studies as well as observation of workers is thus necessary. The analysis of these data allows one to identify the individually appropriate, best method. To match instructions and tools with individual workers, a detailed system of surveillance is required.

For this purpose, the labor office collects, records, and analyzes all necessary statistics required for the task and bonus system. Based on time and motion studies, the most efficient way for executing a certain task is identified for each worker individually. The daily workload for each worker then can be defined. The communication tool that provides the instructions is an instruction card on which the worker finds his workload and a description of the tools required, as well as the method of how he should fulfill the task. In addition, the worker gets a performance review of the previous day which indicates the degree of fulfillment of his quota (Taylor, [1911] 1993, p. 68).

At the shop-floor level, Taylor operationalized surveillance, instruction, and performance measurement by introducing functional clerks: an inspector responsible for the instruction of workers, a gang boss for the machine set up, the speed boss for efficient timing, the repair boss for repair and maintenance, the time clerk regarding remuneration, and the route clerk for work steps. In any case of difficulties with the different “teachers,” the disciplinarian would serve as an ombudsman to help the worker (Taylor, [1911] 1993, p. 124).

Workers are rendered visible in three ways: (1) through individual time and motion studies; (2) through the individual work task defined by the labor office; and (3) through daily surveillance by the functional clerks. In all three cases, the target of the observation is the individual, his performance, and his behavior. Scientific management’s required implementation is top-down, as it does not expect or accept that workers are able to understand and share scientific management methods. The key notion of Taylor’s framework is the task and bonus system, which allows every single worker to measure his performance and progress. The
ultimate goal is the internalization of the task and workload by the worker. If this act of self-discipline were successful, physical observation and surveillance would no longer be needed.

This system was the par excellence operationalization of panopticism, where hierarchical observation and normalizing judgment were the cornerstones of its effective functioning.

Taylor had the best intentions for supporting the worker. But the “relief of the burden” of the worker’s responsibility for his work in fact served to reduce the endorsed and required behavioral options at the workplace to a minimum. The task and bonus system implies that rules, regulations, and control are preferable as coordination mechanisms to the worker’s initiative and self-management. Social relations to coworkers and the work itself, and their potential impact on productivity and skill development, were not emphasized by Taylor’s scientific management. This is an apt example of “metaphorical marginalisation” (Dillard and Nehmer, 1990): the panoptical organizing metaphor highlights control-oriented aspects of the application domain (Controlling science and its organizational context) and marginalizes relation-oriented aspects because of the emphasis in the structure of the source domain (the Panopticon).

The panoptic principles of hierarchal surveillance and normalizing judgment are key underlying assumptions of both Taylorist scientific management and German Controlling science, as will be further elaborated in the next section.

**Archaeology of Controlling, III: The Panopticon as a unifying metaphor for Taylorism and Controlling science**

In 1787 Jeremy Bentham designed an inspection house and thereby gave architectural shape to the idea of permanent surveillance in a work entitled

*Panopticon, or the Inspection House: containing the Idea of new Principle of Construction applicable to any Sort of Establishment, in which Persons of any Description are to be kept under Inspection; and in particular to Penitentiary-Houses, Prisons, Houses of Industry, Work-Houses, Poor-Houses, Manufactories, Mad-Houses, Lazarettos, Hospitals, and Schools; with a Plan of Management adapted to the principle.* (Bentham in Foucault, 1995, p. 258)

As the original title indicates, the Panopticon was initially designed to fulfill surveillance purposes at various institutions, including “houses of industry” and “manufactures,” in other words, business organizations. The architectural design of the Panopticon consists of a concentric ring at the periphery which is divided into cells, with a tower at the center of the ring from which a guard can permanently observe the inmates as the cell’s windows widely open to the inner side. The guard himself cannot be seen, as Venetian blinds make it impossible for the inmates to know whether they are being observed or not: “in the peripheric ring, one is totally seen, without ever seeing; in the central tower, one sees everything without ever being seen” (Foucault, 1977c, p. 202). With this architectural design,
Bentham laid down the principle that
power should be visible and unverifiable. Visible: the inmate will constantly
have before his eyes the tall outline of the central tower from which he is spied
upon. Unverifiable: the inmate must never know whether he is being looked at
any one moment; but he must be sure that he may always be so. (Foucault,
1977c, p. 201)

There are at least three major impacts of the Panopticon on individual behavior.
First, the guard cannot be seen, but the inmate always has to assume that observa-
tion is in operation. Only the assumption of being observed (in an organizational
context, not only by superiors but also by coworkers and even subordinates) is
thus sufficient to induce conforming behavior. Second, and consequently, the pres-
ence of the guard is replaced by self-discipline, in economic terms, the most effi-
cient surveillance technique. Third, conforming behavior thus consists of very
limited behavioral options, one of the most severe impacts being that inmates are
unable to communicate with other inmates.

Discipline, in the Panopticon metaphor, is based on two major instruments:
hierarchical observation and normalizing judgment and sanction. According to
Foucault, in the eighteenth century, due to the higher complexity of production,
increasing numbers of workers in the factories, and more division of labor, the
controlling of these production plants required a new type of surveillance. It was
new in the sense that

it ran right through the labor process; it did not bear—or not only—on production.
... It also took into account the activity of men, their skill, the way set about their
tasks, their promptness, their zeal, their behavior. (Foucault, 1977c, p. 174)

Surveillance in production thus became an independent function, represented by
specialized, omnipresent personnel. As a consequence, its importance was raised to a
decisive economic operator, "both as an internal part of the production machinery
and as a specific mechanism in the disciplinary power." Permanent surveillance be-
came an "integrated system, linked from the inside of the economy and to the aims of
the mechanism in which it was practiced" (Foucault, 1977c, p. 175, 176).

In order to control the behavior of the workers, a mechanism was required "that
coerces by means of observation; an apparatus in which the techniques that make
it possible to see induce effects of power, and in which, conversely, the means of
coercion make those on whom they are applied clearly visible" (Foucault, 1977c,
p. 170). Both Controlling science and Taylor's scientific management consider the
ability to render visible in order to observe to be one of their core functions. Such
a surveillance mechanism

would make it possible for a single gaze to see everything constantly. A central
point would be both the source of light illuminating everything, and a locus of
convergence for everything that must be known: a perfect eye that nothing would
escape and a center towards which all gazes would be turned. (Foucault, 1977c,
p. 173)
But surveillance itself does not assure conformity in behavior: It requires the complementary mechanisms of normalizing judgment and sanction. Foucault suggests that every disciplinary system includes a penal mechanism that "enjoys a kind of judicial privilege with its own laws, its specific offences, its particular forms of judgment" (Foucault, 1977c, p. 177). Everything that is nonconforming, a deviation from a given norm or standard, has to be penalized. The disciplinary punishment aims to reduce deviations and to thereby align behavior. Disciplinary punishment and expected conformity are ideally isomorphic as the norm or standard is repeated and reduplicated by the penalty. The corrective effect is not based on expiation and repentance, it is rather "obtained directly through the mechanics of a training. To punish is to exercise" (Foucault, 1977c, p. 180).

Punishment is only one element of a disciplinary system. Its counterpart is gratification or reward. In order to identify deviation, behavior has to be recorded, quantified, and related to the norm. Thanks to this calculation, "the disciplinary apparatus hierarchized the ‘good’ and the ‘bad’ subjects in relation to one another" (Foucault, 1977c, p. 181).

A disciplinary system works along five dimensions: it compares, differentiates, hierarchizes, homogenizes, and excludes. It renders individual behavior visible, compares the specific behavior with a norm or standard, compares behavior between individuals and hierarchizes, introduces conformity through the norm, and, finally, penalizes nonconforming behavior in order to foster conformity (Foucault, 1977c, p. 182).

Hierarchical observation and normalizing judgment transform visibility into the exercise of power: "Traditionally, power was what was seen, what was shown and what was manifested." In contrast, disciplinary power "is exercised through its invisibility. . . . It is the subjects who have to be seen. . . . It is the fact of being constantly seen, of being able always to be seen, that maintains the disciplined individual in his subjection (Foucault, 1977c, p. 187).

**Discussion and implications**

In summary, our analysis proceeded through three archaeological moments. First, we located Controlling science as positivist, determinist, and nomothetic, thus firmly rooted in the functionalist paradigm. We suggested, moreover, that the myopia of Controlling science (decontextualizing accounting from its historical and organizational contexts), leads to an unintended and subtle acceptance and perpetuation of the operationalization of the panopticon principle (we examined panoptic effects in more detail during our third archaeological moment).

Second, we proposed that Taylor’s scientific management can be viewed as a conceptual ancestor of Controlling science. The task system as well as the labor office that controls an individual worker’s performance are in effect representations of hierarchical observation and normalizing sanction, the two cornerstones of the Panopticon.
In our third and final archaeological moment, imbued with genealogical concerns, we explored the nature of the Panopticon as a potent metaphor for disciplinary regimes that use hierarchical observation and normalizing sanction; and showed that the Panopticon can be seen as a unifying metaphor for both Taylorism and Controlling science. The major impacts of the Panopticon principle relate to distorted communication, the reduction of behavioral options through the assumption of being observed, and the creation of self-discipline that makes the physical presence of an inspector unnecessary.

We chose here to focus on such repressive aspects of the Panopticon because its very raison d'être was surveillance and control of individuals. Its very design operationalizes the principle of power as both visible and unverifiable, and its presence enables hierarchical observation and normalizing judgment and sanction. Foucault called Panopticism “a technological invention in the order of power, comparable with the steam engine in the order of production” (Foucault, 1980a, p. 71). Panopticism as a metaphor can in a broader context aid our understanding of several current surveillance and control practices in various kinds of organizations, aimed at all individuals and supported by technology that is both omnipresent and hidden (e.g., Green, 1999).

Controlling science as panoptic practice

Budgets and standard costs were developed at the beginning of the twentieth century and are now considered standard instruments within Controlling (Horváth, 1996, p. 253; Küpper, 1995, p. 133; Weber, 1995, p. 131). They establish a norm that confronts individuals with certain behavioral expectations. Individual behavior can now be quantified in terms of costs and thereby translated in pecuniary units. Every individual is represented by certain (standard) costs against which individual contribution and eventually deviation can be measured. Managerial accounting thereby requires accountability of individual behavior (Miller and O'Leary, 1987).

Accounting aims at rendering visible individual, team, and organizational performance. Visibility is created through a process of individualization and a series of norms and standards that surround the individual. These norms and standards provide means to identify and quantify deviation from conforming behavior or performance. In addition, these accounting techniques, once implemented, do not need the permanent presence of a functional clerk, accountant, or manager. Instead, the communication between management and operations uses management accounting as an impersonal “interface” so that “control comes to be seen to reside not in the will of the boss but in the economic machine itself, in the norms and standards from which the worker can be seen to depart (Miller and O'Leary, 1987, p. 239).

Scientific management and Controlling science are isomorphic in their underlying assumptions, which both draw from panopticism. Organizational cost-ben-
efit considerations are based on individualized tasks (workload, output, and its remuneration). Standard costs represent the other side of that coin in terms of costs. Budgets require cost information about the "normal" costs per cost or profit center per period to plan. The more sophisticated the accounting apparatus, the more efficiently can workers, their costs, and their contributions be pictured. Accounting thereby creates a invisible web of behavioral expectations around the individual (Miller and O'Leary, 1987, p. 241). Through standard costs and budgeting, accounting is no longer limited to the work floor; administrative and managerial functions have to account for their performance as well. Standard costs and budgets allow organizations to identify and make individuals accountable for avoidable inefficiency.

Normalizing judgment in this context is very up-front, but hierarchical observation becomes more subtle and impersonal. The accounting system with its norms and standards replaced the "guard" in the watchtower or the functional clerks. Budgets and standards costs have thus Tayloristic and panoptical characteristics. An illustration of how this can occur and its effects can be see in the following example based on the personal experiences of one of the authors of this article, Claus Jacobs.

The author worked in a major management consultancy in Germany and was responsible for a substream within a project that reported directly to the project manager. The project manager himself reported to the key account manager. As the project was based on a fixed price arrangement, the project manager was given a clear profit margin target and received monthly reports from the headquarters management accounting department. The project took longer than expected (more consultant days had to be charged than originally planned). To meet the profit margin, the project manager's response was to externalize costs from his project report. So that he could keep his profit margin, the project manager asked the author not to bill his time any longer on the project but on an overhead cost code. The author had to meet an overall utilization rate, based on work days billable to the client. In this case, he was asked to bill on an overhead, nonbillable cost code.

In terms of Foucault's discussion of Panopticism, this experience can be interpreted as follows: Hierarchical observation was in operation at different levels within the management consultancy. The project manager reported to the key account manager with regard to the project's profitability, who himself was being observed by the management accounting department regarding the overall profitability of his key accounts. But the management accounting department relied on the project manager's data to calculate project revenues, costs, and margin. The author was reporting to the project manager in terms of the project costs and to his internal mentor with whom he had agreed an overall utilization rate (i.e., a percentage of overall working time that is billable to clients).

There were two levels of normalizing judgment and sanction. On the one hand, the overall project margin was set by the top management of the consultancy. On the other, the author's internal utilization rate was agreed to between himself and
his mentor. Both norms conflicted in this case, and it was due to organizational power relations that the dominant norm was to meet the profit margin, even though the "real" costs were hidden within an overhead cost code.

Controlling theory predicts that plans coordinate individual behavior effectively. In this context, the dominant plan figure was the profit margin, which resulted in a certain project cost structure. But the defensive routines of project managers hindered open discussion and communication of the issue of cost overrun. Instead, they often opted to creatively reallocate the costs within the management accounting system.

In terms of panopticism, communicative action was neglected for the sake of short-term individual performance requirements. Organizational learning was hindered, as this strategy was common practice on several projects. This cost-hiding strategy is harmful in the long run as it increases overhead costs to an unacceptable level, which results in even higher project profit margins required to cover the artificially increased overhead costs.

The consequences of panopticism in Controlling science and accounting systems

Our investigation contributes to the field of organization studies in the following ways. First, the international critical debate on management accounting and control systems has been significantly concerned with its organizational and social aspects (e.g., Kappler, 2000; Puxty, 1993). In contrast, mainstream Controlling theory in German-speaking areas generally neglects such concerns and the relevance of journals such as Accounting; Organizations and Society; Accounting, Auditing and Accountability Journal; or Critical Perspectives on Accounting that publish research on the organizational and social aspects of management accounting and control systems. Considering our work as an early contribution, and furthering this stream of research, might deliver mutual benefits to scholars of both Controlling and international accounting and organization. On the one hand, it might trigger a critical reflection on the status quo of Controlling theory. On the other, it might enhance the understanding of the international academic community of concepts and approaches in general business administration and in Controlling theory.

Our archaeological investigation of Controlling theory has helped to place its approaches and concepts in perspective, especially regarding the ontological and epistemological foundations of the discipline. Hopefully, this will help broaden the perspective of the discipline to be more conscious of its ontological and epistemological foundations.

In addition, broadening the perspective toward organizational and social implications might help Controlling theory to deliver on one of its promises; providing pragmatic avenues toward efficiently and effectively implementing and using Controlling instruments (mainly cost accounting tools), given that the efficiency and effectiveness of these instruments are highly linked to their organizational and
social contexts. One implication of our investigation is that Controlling theory should aim at applying a more reflexive approach when designing and offering new Controlling instruments, bearing in mind the limitations as well as the potential contributions of its techniques.11

The panoptic nature of Controlling science, and management accounting more generally, triggers individual and organizational defensive routines that are antilearning and thereby hinder potential organizational change. Because budgets are accounting techniques designed to control costs through people and to allocate organizational rewards and penalties, they represent potential embarrassment and threat to organizational members (Argyris, 1994b, p. 173). Based on our analysis, we would rephrase this conception and propose that budgets are accounting techniques "to control people through costs." Budgets and planned costs represent the disciplinary regime of management accounting that might trigger defensive routines. As Argyris (1994a, p. 164) notes: "Organizational defensive routines make it unlikely that the organization will address the factors that caused the embarrassment or threat in the first place. Organizational defensive routines are anti-learning and overprotective."

To conclude, panopticism results in two major problems for an organization. At the level of the accounting system, in order to protect themselves from the threat of surveillance, organizational members will distort data and information. This will lead to a significant loss in the quality of the management information system (Ezzamel, 1994). At the level of organizational change and learning, no progress with regard to the accounting system can be expected, as discursive interaction is suppressed due to the undiscussability of the issues (Argyris, 1994a, p. 164). Panopticism cannot be prevented, but unmasking and critically evaluating panoptic principles in Controlling science and exploring their effects is the first step to enlightened change.

Notes

1. The appropriateness of equating Controlling and management accounting was subject to a lively debate within the discipline itself (e.g., Klipper, Weber, and Zünd, 1990; Schneider, 1991a, 1991b, 1991c; Weber, 1991).
2. See the reflections below on the experience of Claus Jacobs on panopticism at work.
3. Willke (1989) draws an entirely different conclusion: Increasing complexity within operations as well as the management system cannot result in increasing central coordination. From a general systems theory viewpoint, appropriate coordination can only be established by, and among, the subsystems themselves.
4. Weber (1995) neglects other potential forms of coordination such as corporate culture, informal roles, rules, status, or internal markets.
5. The covering-law—or nomothetic—approach assumes the possibility of identifying and defining generalizable, universal laws and patterns. General scientific laws combined with initial condition statements (explanans) allow for the logical explanation and prediction of the phenomenon in question (explanandum).
6. In describing the view of "planning" in Controlling science, we do not deny other
conceptions of planning in the wider management literature: Our aim is to highlight the emphasis of Controlling science on the formal/structural aspects of planning and the neglect of planning as a process.

7. A similar line of thinking in terms of Total Quality Management has been developed by Boje and Winsor (1993), who saw TQM as a program that, like Taylorism, is directed toward workers' bodies, souls, and spirits.

8. On the same note, Kirsch (1997b) detects in the overall hype around modern IT-enabled management and cost accounting systems a tendency toward what he calls "information-Taylorism."

9. The historical and industrial context in which Taylor conducted his research was—and at least with regard to the steel industry still is—male-dominated. Consequently, his analysis focused on male workers. We will use "his" in line with the historical conditions of Taylor's experiments, but clearly the arguments apply to both genders.

10. In terms of knowledge, one could consider Taylor's approach as a radical shift from "socialization" to "combination" (Nonaka, 1994).

11. Interestingly, most Controlling practitioners are quite aware of the organizational impacts of Controlling instruments. Their counterparts in Controlling theory, however, do not provide sufficient insights on how to deal with these concerns.

References


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


The following Statement of Ownership, Management, and Circulation is provided in accordance with the requirements contained in 39 USC 3685. International Studies of Management and Organization (Publication no. 0020-8828) appears quarterly and the annual subscription price is $653.00. It is owned, managed, and published by M.E. Sharpe, Inc., which is located at 80 Business Park Drive, Armonk, Westchester County, NY 10504-1715. The Publisher is Myron E. Sharpe, at the same address. The Editor is Jean Boddewyn, c/o M.E. Sharpe, Inc. 80 Business Park Drive, Armonk, NY, 10504. During the preceding twelve months the average number of copies printed for each issue was 577; the average paid circulation (by mail subscription) was 363; the average free distribution, 38, the average number of copies distributed, 401. Corresponding figures for the issue published nearest to the filing date: total number of copies printed, 577; total paid circulation (by mail subscription), 375; total free distribution, 23; total distribution, 398. Filed by Vincent Fuentes, Senior Vice President.