

EXPLORING THE DEBATE ON SHORT-TERMISM: A THEORETICAL AND EMPIRICAL ANALYSIS

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The debate on short-termism has focused on the economic factors of capital markets and performance measurement systems. Laverty (1996) has advocated the inclusion of individual and organizational dimensions to extend the debate. We reorient Laverty's extended debate by drawing upon a broad management and accounting literature and thereby develop testable theoretical explanations of short-termism. The resulting hypotheses are tested in a telecommunications company. Our findings provide support for Laverty's (1996) argument that individual and organizational factors are important determinants of short-termism. Copyright © 2007 John Wiley & Sons, Ltd.

INTRODUCTION

Time is significant as a reference point for the strategic decision maker (Mosakowski and Earley, 2000). This fundamental point has significant consequences, among which is the complex issue of short-termism. Short-termism is argued to be associated with restricted investment in tangible and intangible assets; this follows the argument that a preference for short-term performance leads to unintended consequences for the long-term value-adding capability of the firm (Hayes and Abernathy, 1980; Kaplan, 1984; Johnson and Kaplan, 1987; Porter, 1992). The origins of this preference for the short term have been debated; arguments center on pressures to meet expectations expressed by capital markets (Bushee, 1998) and the analytic detachment associated with performance measurement systems (Hayes and Abernathy, 1980).

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Despite considerable debate, however, there is surprisingly little research that answers the questions raised by these arguments (Porter, 1992). Research is particularly lacking at the intrafirm level and 'few attempts have been made to link individual temporal orientation and the individual's preferences within an organizational setting' (Laverty, 1996: 847).

Our aim in this paper is the study of short-termism. Our approach is first to draw upon Giddens' (1984) insight that social practices presume reflexivity. This leads us to expect that managers are capable of revealing their reasons for acting in accordance with short-termism. Inquiries into these reasons can be conducted using qualitative research and survey instruments. Our second approach is to reorient the arguments that surround short-termism by drawing upon a broad literature for which there are established empirical bases for inquiry within business contexts. The resulting theoretical development provides the first contribution of the paper and this is presented in the next section. We review arguments linking each of four areas to short-termism, and

develop hypotheses that have the potential to address the questions raised. The second contribution is to report exploratory empirical research at the intrafirm level. We present sections that describe a research program that we conducted and we present the findings. The final section presents conclusions, implications, limitations, and recommendations for future research. Our findings support Laverty's (1996) argument that a limited focus on economic causes, as represented by capital markets and performance measurement systems, provides an inadequate basis for understanding short-termism, while an extended debate that includes individual- and organizational-level factors provides an excellent opportunity to advance our ability to respond to this arguably pervasive feature of strategic activity.

SHORT-TERMISM

Managers should ideally take actions that secure long-term value (Porter, 1992), but short-term results must also be achieved if the firm is to survive (Merchant, 1990; Simons, 1995, 1999; Van der Stede, 2000). Balancing the needs of both the long term and the short term is thus important and gives rise to two possibilities. The first is that managers' short-term actions extrapolate into optimal long-term consequences. In this case, management myopia, or the inability to assess the long term, is not problematic. The second possibility is that actions may favor the short term at the expense of the long term, and it is this situation that is detrimental to the firm. In other words, intertemporal tradeoff is suboptimal (Hayes and Abernathy, 1980; Laverty, 1996). Behavior that focuses on the long term to the detriment of the short term, or long-termism, is also suboptimal according to this argument. We will use 'short-termism' throughout the remainder of the paper to indicate a preference for actions in the near term that have detrimental consequences for the long term, while we will use 'myopia' to indicate the difficulty of assessing long-term consequences, irrespective of whether this is suboptimal. Our usage of the term short-termism is consistent with the existing literature. Mullins (1991), for example, defines short-termism in terms of actions to secure short-term results that preclude long-term achievement; while for Laverty (1996: 826) short-termism is about 'decisions and outcomes that pursue a course of action that is best

for the short-term but suboptimal over the long run.'

The term 'myopia' has been used in the past to indicate both the concept of intertemporal tradeoffs and limitations in the ability of individuals to foresee the future. Samuel (2000: 494), for instance, defines shareholder myopia as 'the tendency of shareholders to focus on the behavior of stock prices in the short term as opposed to the long term' and defines managerial myopia as 'improving earnings in the short term at the expense of long-term growth.' Miller (2002), in contrast, uses the phrase 'managerial myopia' to indicate cognitive limitations in relation to the temporal dimension of decision making, and, at the extreme, analyzes the implications that arise when decision makers find themselves without the necessary information to assess even the present state. Additionally, shareholder myopia has been discussed in relation to trading horizons, where some shareholders hold stock for short periods of time while others intend to hold stock for the long term (see Samuel, 2000, for a review). Wherever possible, in view of the ambiguities within the existing literature, we restrict our use of the term myopia to difficulties of foresight, however motivated, in order to draw a clear distinction with the focus of our study, which is short-termism defined as a detrimental intertemporal tradeoff.

We pursue the debate on short-termism through four headings: stock markets, performance measurement, the individual dimension, and the organizational dimension, which we address from the perspective of social influence. Beyond the argument that capital markets and performance measurement systems are important, individual and organizational factors must be added to any framework that seeks to explain short-termism (Laverty, 1996). Laverty's suggestion is consistent with Porter's (1992) earlier recommendation, which suggested that the issues surrounding investment should be addressed holistically.

Stock markets

Of the factors that have been linked to short-termism, it is the role of capital markets that has received the most attention. A range of evidence and argument has been offered that debates whether capital markets are myopic, with consequences for managerial short-termism (e.g., Jensen, 1986; Hansen and Hill, 1991; Rappaport, 1992,

Samuel, 2000). Central to the debate is the view that chief executives of listed companies are pressured into trading long-term performance for short-term performance in order to meet stock market expectations, and especially in order to secure fluid and impatient capital (Jacobs, 1991). Counterintuitively perhaps, empirical results do not necessarily support this assertion. For instance, significant positive returns have been found to be associated with the announcement of research and development (R&D) projects (Jarrell, Lehn, and Marr, 1985; Woolridge, 1988; Woolridge and Snow, 1990; Bizjak, Brickley, and Coles, 1993), thus suggesting that the markets reward management decisions that are consistent with long-term value creation.

Given the controversial nature of this issue, debate about the impact of capital markets has developed within a dialectic that on the one hand asserts that markets are myopic, and on the other hand argues that markets pursue long-term value but are confronted by managerial short-termism (Jacobs, 1991; Porter, 1992; Bushee, 1998; David, Hitt, and Gemeno, 2001). U.S. capital markets, for instance, have been accused of applying pressure to ensure that managers achieve short-term performance results by reducing expenditure on R&D (Drucker, 1986; Jacobs, 1991: 36; Porter, 1992). Porter (1992) argued that the transient nature of capital markets in the United States provides one explanation for managers' short-termism, in contrast with the experience in Japan and Germany. Bushee (1998) was able to find empirical evidence consistent with this claim, but only for an isolated segment of the capital market. More generally, Bushee (1998: 330) found that 'the large stockholdings and sophistication of institutional investors allows them to monitor and discipline managers, ensuring that managers choose R&D levels to maximize long-run value rather than to meet short-term earnings goals.' David *et al.* (2001) refined these arguments by showing that activism on the part of institutions was necessary to the exercise of influence, and that the nature of activism affected R&D inputs. R&D outputs were not affected by activism.

The perception that capital markets create managerial short-termism remains, however (Merchant and Van der Stede, 2003; Bhojraj and Libby, 2005). The perception is supported by the concepts of information asymmetry and information impact- edness, which suggest that investors do not have complete information about long-term prospects,

and that senior executives use short-term performance to indicate to owners and investors that 'the firms' assets are being managed to maximum value' (Lavery, 1996: 834). The concept of information asymmetry, however, creates further questions because it operates not only at the level of the relationship between the most senior managers and capital markets, but also at the level of the relationship between managers within the firm. It follows that the extent to which senior executives are able to demonstrate good short-term performance at firm level depends in part on the performance of those in lower-status positions, who must also be prepared to trade long-term performance for short-term results if the argument that market myopia leads to managerial short-termism is to be sustained. Belief in the imperative of short-termism must cascade through the firm, and such a process may be achieved through hierarchical contagion (Bonini, 1963; Jones and Wortman, 1973). Hierarchical contagion begins with senior management short-termism, driven by belief in market myopia, and proceeds by transmitting this imperative down through the management levels below the most senior.¹

The hierarchical presumption that underpins the argument concerning capital markets' influence on management action must additionally accommodate leadership styles that adopt an emergent approach to strategy making (Mintzberg, 1987). Strategy as an emergent process may implicate middle-level managers in detecting and mobilizing resources around new ideas (Dutton *et al.*, 1997), which, in changing circumstances, present opportunities for future payoffs (Burgelman, 1983a, 1983b, 1991). Strategy as an emergent process involves middle-managers' consideration of the longer-term through the processes of 'issue-selling' (Dutton *et al.*, 1997), 'championing' (Simons, 1994), and 'grass-roots' activity in general (Mintzberg and Quinn, 1996). Emergent strategy presupposes an approach to strategy making where middle managers are often 'laying the foundations for a future agenda' (Floyd and Wooldridge, 1996: 50). In this case, if capital markets are to exercise the influence that has been attributed to them, the degree of short-termism

¹ The existence (and effects) of hierarchical contagion, or the passing down of evaluative parameters from one level to the next, has been demonstrated in several studies (see, for example, Hopwood, 1974).

exhibited by managers may be related to level; senior managers must deal with stock market myopia, perceived or actual, while middle-level managers may be sufficiently removed from the influence of stock markets to be able to focus on actions that improve long-term performance.

Thus, two possibilities arise concerning the relationship between capital markets and managerial short-termism. One is that capital markets influence senior managers and short-term behavior is passed on from one level to the next through hierarchical contagion, beginning at the apex of the firm. The other is that it is not. In this latter case, and where strategy is an emergent process implicating middle managers, short-termism may be related to level, where those at the top of the organization are more likely to be influenced by capital markets because of closer contacts. Both hierarchical contagion and hierarchical level are constructs that can be measured within organizational contexts. We therefore hypothesize² that:

Hypothesis 1: Short-termism is passed down from one hierarchical level to the next.

Hypothesis 1a: Short-termism increases with hierarchical level.

Performance measurement

Performance measurement, which implicates a range of structural responses from the multidivisional structure to the use of discounting techniques, undervalues the future, emphasizes short-term performance, and is responsible for short-termism (Hayes and Abernathy, 1980; Johnson and Kaplan, 1987; Merchant, 1990; Lavery, 1996). Performance measurement typically involves financial control in the form of accounting information, and this has the effect of bringing short-term performance to managers' attention, not only because accounting makes performance visible, but also because accounting information attempts to measure performance over 'too brief a period, before the long-term consequences from making short-term decisions becomes apparent' (Johnson and Kaplan, 1987: 203). Kaplan (1984: 411) proposes that 'The ability of the firm and the division to

increase reported profits while sacrificing the long-term economic health of the firm is the fundamental weakness in the accounting model.'

However compelling this argument might be, it relies upon a crucial assumption: that the mere existence of accounting-based performance measurement is sufficient to determine a manager's temporal reference point and thus influence intertemporal choice. In propositional terms, the logical inference can be charted as follows: accounting information measures the short term, managers take actions solely based on maximizing results shown by accounting information, and managers will therefore exhibit short-termism. Systematic empirical research that addresses these propositions is underdeveloped, while accounting information's unique determinism is far from established. Van der Stede (2000), for instance, fails to find a significant statistical association between rigid budgetary control style and managerial short-termism.

Ocasio's (1997) framework for an attention-based view of the firm suggests the possibility that accounting's ability to create short-termism may not only depend upon the amount of attention accounting information receives, but also its importance among several alternative forms of influence. This is an important insight in terms of developing theory for short-termism because of Porter's (1992: 71–72) analysis, which suggests that American companies rely upon impoverished forms of communication based upon accounting information, while Japanese and German decision making involves extensive face-to-face negotiations. The possibility that accounting information might not be the only concern for managers was recognized in the earliest contributions to behavioral research in accounting. Otley (1978), building upon Hopwood's (1972: 175) research into the dysfunctional consequences of accounting data, states that short-termism occurs where meeting budgeted targets is a primary source of influence, but the possibility that accounting data might comprise a relatively unimportant element in the evaluation of performance was equally recognized. The effects of budgeting systems have thus been related to a variety of factors, including values and norms (Otley, 1978; Brownell, 1981, 1985). Accounting information thus impacts the behavior of decision makers as one of a number of possible communication channels, which in turn reflect norms, values and principles of action, or rules of the game

² All hypotheses imply *ceteris paribus*.

(Ocasio, 1997). In other words, it is not accounting information per se that influences behavior, it is the importance that is attached to accounting information, as one of a number of possible communication channels, that conditions behavior. This gives rise to the following hypothesis:

Hypothesis 2: Short-termism is positively associated with the importance that is attached to accounting information as one among a number of possible communication channels.

The individual dimension

Myopia produces occasions for sensemaking that implicate uncertainty (Weick, 1995: 98–99). Uncertainty is inexorably bound to the issue of time since ‘time and uncertainty are typically correlated with one another in the real world,’ and because ‘anything that is delayed is almost by definition uncertain’ (Prelec and Loewenstein, 1991: 784). Uncertainty is defined as an absence of information (Galbraith, 1973), and uncertainty can change since more information becomes available as time passes (Stinchcombe, 1990; Weick, 1995: 96–97). Therefore, the longer the time horizon confronting a decision maker, the greater the uncertainty, and the more likely information is deficient.

Information deficiency has been extensively researched at the individual level through the concept of role ambiguity. Role ambiguity is the difference between the information a person needs to fulfill a role and the information available (Kahn *et al.*, 1964: 24; King and King, 1990: 49). Environmental turbulence, which is one form of perceived environmental uncertainty (Huber and Daft, 1987), provides a source for role ambiguity (King and King, 1990). Role ambiguity, role conflict, and perceived environmental uncertainty are distinct constructs that nevertheless positively covary with each other (Gregson, Wendell, and Aono, 1994; Rebele and Michaels, 1990). Taken as a broad construct, role ambiguity, role conflict, and role overload are associated with short-termism (Otley, 1978: 134). The theoretical basis for these associations has not been established formally but can be developed from the argument that role ambiguity is a source of stress because it ‘frustrates the human need for clarity or structure in the environment’ (Katz and Kahn, 1978: 206). In order to cope, those who experience role ambiguity may seek

more certain outcomes in order to regain a gratifying role experience (Kahn *et al.*, 1964; House and Rizzo, 1972). Short-termism is therefore a coping behavior (Hopwood, 1972: 162–163). Managers who experience role ambiguity may thus value the reduction in uncertainty that accompanies meeting short-term requirements even where this is detrimental to long-term performance. This leads us to the following:

Hypothesis 3: Short-termism is associated with the individual’s experience of role ambiguity.

Organizational dimension

Organizations are sites of considerable interpersonal communication and social interaction (Fulk, 1993), leading to the possibility that short-termism at the intrafirm level may result from social influence (Lavery, 1996: 845). The long-standing social influence perspective suggests that information from social referents (e.g., colleagues, coworkers, influential outsiders) can be at least as important as objective information in guiding judgments of difficult perceptual tasks, leading to conformity of views, beliefs, and behaviors (Asch, 1955; Janus, 1972; Turner, 1991; Ho, 2005; Lucas *et al.*, 2006). In other words, an individual’s views and opinions can reflect the views and opinions of significant others. Conformity in relation to short-termism might occur at the level of both the work group and business unit or function, each of which can be regarded as sites of considerable social interaction within the firm (Fulk, 1993; Chattopadhyay *et al.*, 1999).

Work groups

Work groups generally play an important role in shaping an individual’s behavior within the firm (Fulk, 1993). The interpersonal transmission of attitudes, opinions, and behaviors among individuals of a defined group leads to the establishment of social norms, which then act to influence the behavior of group members (Mead, 1934; Salancik and Pfeffer, 1978; Bandura, 1982; Daft and Weick, 1984; Gioia, 1986; Turner, 1991). Both experimental and empirical research has shown that this is particularly likely where group members act as referents for a particular issue or topic (Allport, 1924; Gordon, 1952; Festinger, 1953; Sherif, 1966;

Fulk, 1993). In this case, the group is psychologically significant for one's attitude and behavior (Turner, 1991), and acts as a source for norms and values (Kelley, 1952). Recent evidence by Chattopadhyay *et al.* (1999) suggests that the executive work group or team may act as a psychologically important group for its members. Similarly, evidence from Thomas and McDaniel (1990) suggests that the top management team may act as an important group for the chief executive.

The existence of conformity in relation to a particular issue is normally measured by relating the focal person's behavior to that of the average behavior of other group members (e.g., Davis *et al.*, 1997; Chattopadhyay *et al.*, 1999). We are therefore able to draw on this research practice in order to explore the extent to which a focal manager's short-termism is determined by the short-termism of other managers within the work group.

Hypothesis 4: The focal manager's short-termism is associated with other group members' short-termism.

Functions and strategic business units

Conformity of views and opinions may also occur in a broader social context, such as a particular functional area or strategic business unit (SBU). The interpersonal transmission of views and opinions at this level is often supported and reinforced by a range of socialization processes, including recruitment, selection, indoctrination, training, mentoring, career ladders, and both professional and functional affiliations (Van Maanen and Schein, 1979; DiMaggio and Powell, 1983; Chow, Shields, and Wu, 1999). It is through exposure to such socialization processes that much of what is considered desirable and appropriate is construed (Locke and Latham, 1990). The main argument is that feedback and rewards associated with a given set of professional, functional, or organizational experiences amplify the salience of the procedures, views, and goals associated with those experiences (Locke and Latham, 1990). The individual is thus likely to develop, over time, a mode of behavior that is consistent with the particular procedures, attitudes, goals, and standards of a profession, function, or SBU (Fiske and Taylor, 1984). This behavior is likely to be reinforced by peers and superiors who react positively to performance that accords with generally accepted norms and

standards (Chattopadhyay *et al.*, 1999). In effect, short-termism may be socially legitimized as an accepted form of institutional behavior (Laverty, 1996: 846).

This legitimizing or conditioning experience may vary to the extent that the individual is exposed to a different set of attitudes, goals, standards, or norms (Dearborn and Simon, 1958; Lawrence and Lorsch, 1967a; Perrow, 1970; Hayes, 1977; Scott, 2001). However, there has been little exchange between theories relating to social conditioning and the debate over short-termism (Laverty, 1996). We therefore hypothesize that the manager's short-termism is related to the situationally derived socialization processes occurring at the level of the function or the business unit, but we do not hypothesize as to the direction this relationship will take.

Hypothesis 5: Managers' short-termism is explained by their social experiences within the particular function or business unit.

METHOD

Context and sample

We tested our hypotheses in the telecommunications industry, drawing respondents from Comserve,³ a major organization and a leading player in this globalized industry. The company is structured into five SBUs, employs around 12,000 people and has an annual turnover in excess of U.S. \$4 billion. Although the choice of a single organization restricts our ability to make claims for generalizability, there are several reasons for focusing on a single organization. First, the development of a detailed understanding of an organization allows us to address Laverty's (1996) criticism concerning the lack of intrafirm research (see the earlier introduction). Second, the initial field study gave us access to the type of sample-managers spanning several layers of management and representing several different work groups and business units, which is crucial to the analysis of organizational factors such as social influence, contagion, and hierarchical level. Third, drawing respondents from a single organization is recognized as appropriate for research that draws upon

³ The company has been given a fictitious name to preserve its anonymity.

social influence perspectives (Fulk, 1993). Fourth, drawing respondents from one particular organization does not set a precedent for exploratory research. Several studies have drawn on single organization settings to examine aspects of strategic management, including middle management 'issue-selling' (Dutton *et al.*, 1997) and the effects of various organizational factors on psychological empowerment (Spreitzer, 1995, 1996). Fifth, our choice of firm increases the probability that respondents will be sensitized to the temporal dimension. This is because tensions between the short and long term reach particularly acute levels in fast-moving, highly dynamic, and fiercely competitive industries such as telecommunications. On the one hand, a high rate of strategic adaptation and change at firm level is critical to the long-term survival of the organization (Dutton *et al.*, 1997). On the other hand, fierce competition demands 'predictable goal achievement' and 'tight' budgetary goals in the short term in order to maintain profit margins and 'limit innovative excess' (Dent, 1990; Simons, 1999; Chenhall, 2003). Finally, we are able to control for features of the setting that could independently influence the behavior of each manager. The factors that remain consistent across the present analysis include: organizational size and competencies, performance measurement systems, reward structures, and organizational strategy.⁴

Our research began with 26 semi-structured interviews. The interviews lasted 75 minutes on average and addressed the question of the ways in which the organization reconciled the need for predictable goal achievement with the need for innovation and learning (Simons, 1994, 1995, 1999). Balancing tensions and choices between short-term and long-term performance is fundamental to the reconciliation of these issues (Simons, 1999). Findings from the interviews were then incorporated into a questionnaire. The company restricted our access to its management team, which comprised

over 400 managers, and which was structured into four levels and five SBUs. We negotiated access to managers at all hierarchical levels within three out of the five SBUs. These were chosen to represent the spectrum of activities undertaken by the company. SBU 1 represents network infrastructure, and managers operating within this unit were engineers by background. SBU 2 represents product development, and SBU 3 sales and marketing. Questionnaires were sent to 196 managers, accompanied by a letter of support from the Chief Finance Officer, and a response rate of 84 percent was obtained. The figure of 196 represents *all* managers operating within the three SBUs; random selection was not involved. Nonresponse bias was assessed on the basis of the familiar assumption that nonrespondents are more likely to be similar to late respondents than early respondents (Fowler, 1993). A two-sample *t*-test showed that no means are significantly different for early versus late respondents.

Questionnaire instruments were pretested. A panel of experts was asked to assess the questionnaire for ambiguity, style of question, and length. Twenty-four of Comserve's managers were then given a copy of the revised questionnaire and asked to assess the substance, relevance, and clarity of the proposed instruments. Common suggestions for improvement were incorporated into the questionnaire.

Short-termism

Laverty (1996: 851) notes that 'The most far-reaching challenge to advancing the debate consists in research approaches to observation and measurement of inter-temporal choice.' Intertemporal choice reflects decision makers' reference points in relation to time, and time is rarely adopted as a direct theoretical variable in studies of strategy (Mosakowski and Earley, 2000). Two implications for the study of short-termism follow from the lack of direct measures, both of which suggest that new measures are needed. The first is the use of instruments in previous studies that directly address time, but which are used as a proxy for other theoretical phenomena (Mosakowski and Earley, 2000: 801). For instance, short-termism has been used as a proxy for the dysfunctional consequences of budgeting within behavioral research in accounting. It has been measured by drawing upon Lawrence and Lorsch's

⁴ Consistency in terms of performance measurement system and managerial reward structure is particularly important. Initial investigations at the research site confirmed that middle managers and senior managers alike confronted the same temporal reference point that is represented by the annual budget. We drew on this situation in our operationalization of short-termism (see the paper's methodology section). 'Short-term budget performance' thus refers to the discipline of meeting monthly budget targets within the context of annual budgeting. The long term refers to the consequences thereafter. This is consistent with the construal of short and long term in the literature (e.g., Johnson and Kaplan, 1987; Van der Stede, 2000).

(1967b: 257) instrument, which asks managers to indicate the percentage of time devoted to issues that will impact financial results within particular future time periods. This measurement has been adequate for its purpose in addressing its research objective, but fails to capture the intertemporal tradeoff and indeed makes no direct attempt to explain short-termism. The second consequence is the use of indirect measures of time when addressing the issue of short-termism as the primary research focus. Bushee (1998), for instance, adopted a dependent variable that equaled 1 for firms that reduced R&D expenditure relative to a prior year and 0 if R&D expenditure remained constant or increased; reducing levels of R&D expenditure thereby acted as a proxy for short-termist behavior. Laverty (1996: 839), however, argues that R&D is a questionable measure since R&D data incorporate short-term projects, and may not therefore measure the long term, and that, in contrast to R&D pronouncements, which enhance shareholder returns, R&D expenditure does not generate corporate long-term returns.⁵

Our approach was therefore to build upon our interview data and to construct two types of measures. The first was a direct attempt to capture intertemporal tradeoff and is represented by the questions:

1. You focus on actions to improve long-run financial effectiveness rather than with actions that produce good short-term budget performance.
2. You expect your subordinates to focus on action that will produce good short-term budget performance rather than with actions to improve long-term financial effectiveness.

The second type of measure represents attempts to capture short-termism by means of its association with the need for predictable goal achievement (which is measured over the short term), while 'long-termism' represents the need for innovation and learning (Simons, 1995). The following five

questions were developed on the basis of the interviews and questionnaire pretesting:⁶

3. You expect your subordinates to revise their responsibilities/commitments as circumstances change over time, rather than seek to attain original targets/milestones.
4. You expect your subordinates to concentrate on actions to achieve specific key performance indicators for their area of responsibility, rather than be concerned with actions that will enhance overall performance in a broader area of the unit/company.
5. You expect your subordinates to concern themselves with maintaining progress toward initial budget targets rather than with negotiating increases to tolerance limits as circumstances change/events unfold over time.
6. You expect initiative and quick adaptation to the local situation from your subordinates, rather than the referral of such decisions upward through the company.
7. You expect your subordinates to take corrective action to reduce variances from budget, but not at the expense of disrupting ongoing programs and projects.

Each item was measured on a five-point scale, with 1 representing strong agreement and 5 strong disagreement with the statement presented. Questions 1 and 3 were reverse-scored.

The seven questions were factor analyzed. Table 1 presents the results of the principal components analysis with varimax rotation. All questions loaded onto one of three variables with all factor loadings above 0.60. Factor 2 is the direct measure of short-termism. Factors 1 and 3 are indirect measures that represent, respectively, expectations of short-term goal achievement (referred to as indirect measure 1), and adaptation through innovation and learning (indirect measure 2). Reliability measures (Cronbach, 1951) all exceed 0.70, which is comfortably above lower limits of acceptability normally considered to be around 0.50 or 0.60 (Nunnally, 1967).

⁵ Erickson and Jacobson (1992) argue that the stock market responds favorably to R&D pronouncements because these are perceived as signals of higher profitability. They suggest that studies that report positive correlations between R&D expenditure and stock return fail to account for omitted variable bias and that firm profitability impacts both R&D expenditure and stock return. Empirical evidence is presented to show that unanticipated R&D expenditure has a negative effect upon stock return once profitability is accounted for.

⁶ Given that the manager's role is defined in part by the subordinate's role, making these roles complementary (Ashforth, 2001), under ideal conditions, the questions would have asked the manager what he or she expected of him or herself in addition to what he or she expected of the subordinate. We restricted the questions in order to meet requirements for the acceptable length of the questionnaire based upon the perceptions of the managers involved in the pretest.

Table 1. Factor analysis results for measures of short-termism

Short-term item	Factor 1: Indirect measure	Factor 2: Direct measure	Factor 3: Indirect measure	Commonality
Question 1	0.280	0.773	0.012	0.690
Question 2	-0.126	0.769	0.003	0.609
Question 3	0.755	0.164	0.123	0.607
Question 4	0.641	0.003	0.242	0.470
Question 5	0.772	0.017	0.102	0.603
Question 6	0.154	0.345	0.662	0.662
Question 7	0.046	-0.191	0.854	0.769
Eigenvalues	2.417	1.472	1.221	
Explained variance	31.6%	19.8%	16.0%	67.4%
Kaiser-Meyer-Olkin	0.763			

Capital markets

Hierarchical contagion

The short-term bias exhibited by the immediate superior (as established by the direct two-item instrument) was included as the independent variable to predict each manager's short-term bias.⁷ A listing of line relationships was obtained from the Human Resources Management department and the manager's status was confirmed by the questionnaire survey.⁸

⁷ The questionnaire sample contains responses from three level 1 managers (the heads of the three business units in the study). These senior managers were formally accountable to Comserve's chief executive officer (CEO). As a response from the CEO was not available, it was desirable to insert a nominal short-term score for this person. In order to ensure that the nominal score did not affect the analysis, two further analyses were undertaken with extreme case nominal scores (i.e., 2 and 10). No significant differences in contagion were found.

⁸ As we wished to compare the manager's response with that of the immediate superior, each questionnaire was coded (by reference to the organization chart) in order to identify respondents.

Hierarchical level

Hierarchical level was measured on a scale of 1 to 4, with 1 representing membership of the senior management team, while 2 represented managers who reported to a level-1 manager. Respondents were asked to circle the appropriate number on the questionnaire, and this self-reporting exercise was confirmed by reference to the organization chart.

Accounting information

Each manager at Comserve was supplied with documented information relating to short-term budgetary and nonfinancial performance measures as two among several communication channels that supported performance measurement within the company. The questionnaire asked respondents to rate the importance of the formal channels available to managers using a five-point Likert scale. Table 2 presents the communication channels and the results of principal components factor analysis with varimax rotation. All questions factor onto

Table 2. Factor analysis results for information sources

Information source	Factor 1 Intermediate	Factor 2 Lean media	Factor 3 Rich media	Commonality
Management meetings	0.150	-0.296	0.606	0.477
E-mail	0.843	-0.202	0.314	0.837
Face-to-face dialogue	0.012	0.003	0.849	0.849
Accounting information	0.246	0.839	-0.269	0.691
Departmental reports	0.023	0.873	0.245	0.825
Written memos	0.741	0.275	-0.257	0.677
Telephone	0.801	0.008	0.159	0.724
Eigenvalues	2.503	1.487	1.087	
Explained variance	35.8%	21.2%	15.5%	72.5%
Kaiser-Meyer-Olkin	0.802			

one of three factors with all factor loadings above 0.50. Cronbach alphas for each factor exceed 0.60.

The three factors can be interpreted in terms of media richness theory (Daft and Lengel, 1986). Factor 2 represents lean media and includes items relating to budgetary and nonfinancial measures. Factor 3 represents rich media and Factor 1 comprises those media that fall between the extremes of rich and lean media. Cronbach alphas for each measure exceed 0.60. We used the two-item measure representing budgetary and nonfinancial measures in our analysis.

Individual dimension

Role ambiguity

Instruments developed by Kahn *et al.* (1964) and Rizzo, House, and Lirtzman (1970) have been used extensively to measure role ambiguity. Both instruments have been criticized (King and King, 1990; Elovainio and Kivimäki, 2001), and, on balance, it was decided to adopt the Kahn *et al.* questions. The Rizzo *et al.* measure lacks the direct measure of information deficiency that is included in the Kahn *et al.* measure, and which is central to our theoretical development. The Rizzo *et al.* measure has been widely used, but has been adopted for studies that address individual level responses such as job satisfaction, commitment, and propensity to leave. These studies have not addressed

organizational-level issues (King and King, 1990). The one study that has reported a relationship between job-related tension and short-termism was based on the Kahn *et al.* 15-item measure (Otley, 1978).

Kahn *et al.*'s (1964) 15-item instrument was initially developed to measure role ambiguity and role conflict, but role overload has since been treated as distinct from role conflict (Dougherty and Pritchard, 1985). Given the exploratory nature of the study, with the concomitant need to assess construct validity, the full instrument was used. Table 3 presents the questions and the results of principal components factor analysis with varimax rotation. All questions factor onto one of three factors, with all factor loadings above 0.50. Factor loadings are consistent with separate constructs for role ambiguity, role conflict, and role overload. Cronbach alphas for each factor exceed 0.70. The measure of role ambiguity includes three items that are common with the Rizzo *et al.* (1970) instrument and three items that address the adequacy of information and its associated construct, knowledge. This measure was used in our analysis.

Organizational dimension

Work groups

An independent variable was adopted that measured the median short-term behavior for the group

Table 3. Factor analysis results for role ambiguity

Item	Factor 1: Role ambiguity	Factor 2: Role conflict	Factor 3: Role overload	Commonality
(a) Too little authority	0.645	0.300	0.004	0.508
(b) Unclear on scope of responsibilities	0.672	0.138	0.299	0.569
(c) Not knowing about opportunities	0.679	0.020	0.113	0.480
(d) Too heavy a workload	0.148	-0.140	0.843	0.752
(e) Conflicting demands	0.225	0.713	0.172	0.589
(f) Not fully qualified	0.112	0.534	0.348	0.449
(g) Not knowing about superior's views	0.648	0.178	0.108	0.466
(h) Cannot secure information necessary to the job	0.605	0.175	0.119	0.402
(i) Deciding things that affect others	0.124	0.661	0.034	0.479
(j) Not being liked by work colleagues	0.266	0.515	0.147	0.412
(k) Unable to influence line manager's decisions	0.007	0.723	0.360	0.578
(l) Not knowing what is expected	0.700	0.006	0.173	0.582
(m) Amount of work interferes with performance	0.249	0.254	0.629	0.483
(n) Having to do things against better judgement	0.165	0.605	0.185	0.602
(o) Job interferes with family life	0.379	0.576	0.005	0.500
Eigenvalues	4.879	1.667	1.188	
Explained variance	34.6%	13.1%	10.3%	58.0%
Kaiser-Meyer-Olkin	0.786			

as calculated from the scores obtained from all other group members. This can be interpreted as a measure of conformity, to the extent that the focal manager's behavior reflects the views of other group members.⁹ Managers who shared a hierarchical superior were defined formally as members of a given work group (Seashore, 1954; Fulk, 1993). At Comserve, the size of managerial work groups ranged from five to twelve persons. The following criteria were applied before including a particular group (and/or member of a group) in the analysis:

- groups comprising fewer than three responses were discarded (Seashore, 1954; Chattopadhyay *et al.*, 1999);
- groups comprising level 3 managers but without a superior (level 2 manager) were discarded. This was to comply with the measure of contagion used in the study.

⁹ We measured conformity by examining the association between the focal manager's short-termism and the short-term behavior of other group members rather than directly eliciting the required information from the manager. Information provided by the manager may be biased because: (a) managers are unaware of subtle social influences from other group members; (b) more recent influences are likely to be more salient, and have a greater chance of being reported; (c) managers may not wish to admit that they are influenced by other group members; and (d) managers may strive for consistency within their responses, leading to a response—response bias. These reasons are similar to those given by Chattopadhyay *et al.* (1999). Where our approach differs is in the use of median scores rather than mean scores. We chose to use median scores in the present analysis because the median gives less weight to extreme cases, thereby providing a more robust measure of the distance between the focal manager's short-term behavior and that of the work group. Computing conformity based upon the behavior/responses of others as an algebraic function has been accepted in a variety of settings (see, for example, Tindale *et al.*, 1990; Rice and Aydin, 1991; Davis *et al.*, 1997; Chattopadhyay *et al.*, 1999).

The net number of respondents used in the analysis was 147 individuals, which represents a 75.1 percent usable response rate.

Strategic business units

Our analysis at the level of business unit affiliation was represented as three separate dummy coded (0 or 1) current position variables. For example, in the first variable, members of business unit one (network infrastructure) were coded 1 and the remainder 0 (Donabedian, McKinnon, and Bruns, 1998; Sim and Killough, 1998).

Control variables

To reduce the likelihood that demographic characteristics would confound responses to short-termism, three characteristics were measured and controlled for in the analysis: age, gender, and level of education. These have been shown to influence managerial beliefs, values, opinions, and actions (e.g., Tabachnick and Fidell, 1989; Fulk, 1993; Earley and Mosakowski, 2000). We also controlled for tenure, as tenure is inversely linked to mobility, which has been linked to short-termism (Laverty, 1996: 832).

ANALYSIS AND RESULTS

Direct measure of short-termism

The main analysis focuses on the direct measure of short-termism. Table 4 reports means, standard deviations, and Pearson correlation coefficients. Tests for multicollinearity among the independent

Table 4. Means, standard deviations, and Pearson correlation coefficients

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9
1 Short-termism (direct measure)	6.09	1.88	—								
2 Hierarchical contagion	6.34	1.50	0.09	—							
3 Hierarchical level	2.81	0.39	0.02	0.17	—						
4 Accounting information	6.61	2.25	0.14	0.30	0.15	—					
5. Role ambiguity	18.23	6.45	0.57	0.12	0.04	0.25	—				
6 Work groups	2.83	0.44	0.38	0.36	0.08	0.18	0.14	—			
7 SBU 1	0.47	0.50	0.21	0.04	0.12	0.11	0.72	0.31	—		
8 SBU 2	0.18	0.39	0.23	0.07	0.02	0.07	0.33	0.68	0.26	—	
9 SBU 3	0.35	0.48	0.06	0.02	0.16	0.20	0.47	0.25	0.69	0.65	—

$n = 147$

All correlations above 0.185 are significant at $p < 0.05$.

variables revealed variance inflation factors of 2.50 or below, suggesting no serious problems in terms of using multiple regression (Belsley, Kuh, and Welsch, 1980). Four models were developed to test our hypotheses. The first regression model contains the control variables only, while models 2, 3, and 4 introduce the explanatory dimensions in hierarchical fashion (Tabachnick and Fidell, 1989). Model 2 introduces the impact of capital markets and performance measurement, model 3 adds the individual dimension, and model 4 adds the organizational dimension. Results are reported in Table 5.

Hypotheses 1 and 2 relate to the debate on short-termism, which centers on the economic dimension. Model 2 reveals that none of the variables is significant, while the R^2 is significant but low in comparison with the remaining models. There is little support for Hypotheses 1 and 2. Model 3 indicates that the addition of the individual dimension has a significant impact on the analysis. Not only is there support for Hypothesis 3, but the incremental increase in R^2 is of the order of 0.37 for model 3, suggesting that approximately one-third of the variance in managers' intertemporal trade-off decisions is explained by the experience of role ambiguity. The addition of the organizational dimension to the debate is also significant. The incremental increase in R^2 is 0.14. Standardized

regression coefficients suggest that the additional explanatory power of the model derives from the inclusion of the median score for others within the work group (Hypothesis 4) but not the measure for the SBU (Hypothesis 5).

Indirect measures of short-termism

The hierarchical regression analysis was repeated for the two indirect measures of short-termism. Results are shown in Tables 6 and 7. These show a weakening of effect for both role ambiguity and the work group. The results, however, support the argument that advancing understanding of managers' temporal orientation may lie with an analysis of individual and organizational-level factors (Hypotheses 3 and 4), and no support is found for Hypotheses 1 and 2.

Further analysis

Analytical robustness of the results for the direct measures of short-termism was examined in a variety of ways. First, variables were systematically eliminated, starting with the full regression, until the most parsimonious model was identified. This model included two variables: role ambiguity and the work group. Second, as the theory on social influence at the work-group level is unclear as

Table 5. Predictor variables regressed on short-termism (direct measure)

Variable		Model 1	Model 2	Model 3	Model 4
<i>Control variables</i>					
Age		-0.155	-0.102	-0.087	0.025
Gender		0.046	0.022	0.045	0.081
Education		0.076	0.063	-0.023	-0.033
Tenure		-0.101	-0.091	-0.151	-0.174*
<i>Economic dimension</i>					
Hierarchical contagion	(H1)		0.134	0.026	0.092
Hierarchical level	(H1a)		0.140	0.043	0.072
Performance Measurement	(H2)		0.062	0.083	0.138
<i>Individual dimension</i>					
Experience of role ambiguity	(H3)			0.652***	0.514***
<i>Organizational dimension</i>					
Work groups	(H4)				0.422***
SBU 1	(H5)				0.161
SBU 2	(H5)				0.152
SBU 3	(H5)				-0.056
Adjusted R^2		0.04	0.15*	0.48***	0.63***
Incremental adjusted R^2			0.12*	0.37***	0.14**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; standardized regression coefficients reported

Table 6. Predictor variables regressed on short-termism (indirect measure 1)

Variable	Model 1	Model 2	Model 3	Model 4
<i>Control variables</i>				
Age	-0.089	-0.118	-0.053	-0.022
Gender	0.086	0.083	0.055	0.002
Education	0.054	0.062	0.059	0.069
Tenure	-0.072	-0.053	-0.033	-0.007
<i>Economic dimension</i>				
Hierarchical contagion		0.023	0.010	0.034
Hierarchical level		-0.107	-0.081	-0.061
Performance measurement		-0.091	-0.037	0.002
<i>Individual dimension</i>				
Experience of role ambiguity			0.396***	0.357***
<i>Organizational dimension</i>				
Work groups				0.156*
SBU 1				0.027
SBU 2				-0.071
SBU 3				0.204*
Adjusted R^2	0.00	0.01	0.16***	0.21***
Incremental R^2			0.15***	0.06**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; standardized regression coefficients reported

to how many group members are needed for a group effect to occur, we ran the same regression analyses with work groups comprising no fewer than four members. The net number of respondents was 124. This did not affect the results. Third, we tested for the possibility of 'splinter groups' within larger groups (Turner, 1991) by running the regressions with an additional variable representing the size of work group within which each respondent operated. Similar results were again obtained. Fourth, we extended the examination of work groups by investigating the impact of convergence on group norms. Decision making within groups can be conceptualized as the interactions of actors with different preferences, intentions, or identities, and different levels of power (March, 1997). Over time we might therefore expect convergence or polarization of norms (Axelrod, 1997). Given the lack of research into short-termism at the group level, we were not able to establish hypotheses for this temporal dimension to decision making, but our data provided evidence of a convergence effect. We restricted group membership to those managers who held their current

Table 7. Predictor variables regressed on short-termism (indirect measure 2)

Variable	Model 1	Model 2	Model 3	Model 4
<i>Control variables</i>				
Age	-0.072	-0.113	-0.120	-0.083
Gender	0.083	0.062	0.115	0.065
Education	0.051	0.088	0.021	0.049
Tenure	-0.032	0.014	0.003	0.046
<i>Economic dimension</i>				
Hierarchical contagion		-0.102	-0.068	-0.054
Hierarchical level		-0.109	-0.094	-0.056
Performance measurement		0.011	0.008	0.016
<i>Individual dimension</i>				
Experience of role ambiguity			0.351***	0.281***
<i>Organizational dimension</i>				
Work groups				0.176*
SBU 1				0.040
SBU 2				-0.103
SBU 3				0.193*
Adjusted R^2	0.01	0.01	0.12***	0.17***
Incremental R^2			0.12***	0.05**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; standardized regression coefficients reported

position for at least 6, 12, and 18 months, respectively. While this leads to an ever reduced sample size ($n = 86$ at 18 months), the incremental R^2 for model 4 is higher in each instance (>0.17 , $p < 0.001$) than is currently reported in Table 5. This suggests increasing convergence as membership period increases. We then calculated, for each group member in turn across the work groups involved in our study, Euclidean distance scores in relation to the median group score. We correlated these distances against membership period and squared membership period respectively. We find a nonsignificant relationship for membership period, and a significant negative relationship for squared membership period. These results suggest a curvilinear rather than linear association between the individual manager's short-term behavior and that of the group. In specific terms, they indicate that any convergence effect is more pronounced in the early stages of group membership.

Fifth, given that our conceptualization of short-termism emphasizes that distinct tradeoff decisions in favor of either the short or long term

are dysfunctional, we undertook logistic regression analysis in order to examine the extent to which each dimension may explain short- or long-term *bias*. This involved removing all midpoint scores of 6 from the dependent variable and reconfiguring the remaining data set as either 0 (for scores of 5 or below—short-term) or 1 (for scores of 7 or above—long-term). The net number of respondents was 111 (61 were short-termist and 50 were long-termist according to this measure). The results of the logistic models mirrored those of the multiple regression; significant results were obtained for both the individual dimension and the organizational dimension of the work group but not for the remaining variables. Sixth, as the research draws respondents from a single (albeit large and geographically dispersed) organization, there is a danger that the analysis may be vulnerable to a cultural effect (Schein, 1985), in that similarities of behavior may exist across the organization that are not detectable using the measures employed in the study. We tested for this by using analysis of variance (ANOVA) and an analysis of frequency distributions in order to confirm differences among managerial work groups and business units for the direct measure of short-termism. ANOVA is significant in both instances: $F_{28, 147} = 6.92$ ($p < 0.001$) for analysis by work group, thus reinforcing the finding that work groups are sites for norms associated with short-termism, and $F_{3, 147} = 9.45$ ($p < 0.001$) at the strategic business unit level. Individual work group means range from 3.89 to 8.09, while a review of frequency distributions also confirms the presence of differences among work groups and SBUs. Seventh, given the possibility of relational demographic characteristics such as age similarity (Tsui, Egan, and O'Reilly, 1992), and tenure similarity (Chattopadhyay *et al.*, 1999), Euclidean distance scores were computed in line with Chattopadhyay *et al.* (1999) and included in the full regression model. No significant results were found for the relational demographic characteristics tested. Finally, Laverty (1996: 847) argues that 'addressing the interaction among the individual, organizational, and economic dimensions presents the greatest challenges and promises the greatest hope for progress in understanding economic short-termism.' We therefore examined the extent to which short-termism was associated with theoretically justifiable combinations of economic, individual, and organizational dimensions. We tested

interactive effects through a nested approach, but found that none had a significant effect on the explanatory power of the overall model.¹⁰

In examining the analytical robustness of our direct measure of short-termism, we also undertook further examination of Hypotheses 1 and 2. Hypotheses 1 was reexamined by testing the extent to which short-termism may be related to hierarchy in a manner that does not assume contagion. Research by Vera and Crossan (2004) suggests that the effects of leadership may 'skip' one or more hierarchical levels. To test for this possibility, we undertook a comparison of means for the direct measure of short-termism, using independent two-tail *t*-tests, controlling for differences in group size by taking 'unequal' values as the measure of significance. Results show significant mean differences between levels 1 and 2 ($p < 0.05$), and between levels 2 and 3 or 4 ($p < 0.05$), but not between levels 1 and 3 or 4. This suggests a 'distant leadership' effect (Vera and Crossan, 2004). In the case of Hypothesis 2, we examined the extent to which the other communication channels examined in our study were predictive of short-termism by replacing factor 2 with factors 1 and 3 (see Table 2) in turn in the regression analyses. No significant results were obtained, suggesting that formal communication is not associated with short-termism.

DISCUSSION AND CONCLUSIONS

The study reported in this paper expanded the debate on short-termism in line with Laverty's (1996) suggestion that organizational and individual factors may be important determinants. We have developed hypotheses for each of four explanations for intrafirm short-termism: that managers are influenced by capital markets; that managers are influenced by performance measurement systems; that managers are short-termist because of

¹⁰ We tested several theoretically plausible interactions (for example between accounting information and role ambiguity—managers might conceivably focus on accounting information as a (short-term) performance measure as a means of coping with the experience of role ambiguity. The interaction of these factors may therefore explain managers' intertemporal bias in favor of the short term). None of these interactions yielded a significant *F*-score at the 5 percent level. Given this, plus the number of interactions that could be included on a theoretical (and analytic) basis, and the aims of this study, results involving interaction terms are omitted from the article, but are available on request.

an individual dimension centering on role ambiguity; and that managers are short-termist because of an organizational dimension based upon norms located within work groups and SBUs. The results of our study suggest that understanding short-termism will not be promoted by debates about the impact of capital markets and performance measurement systems alone; short-termism must be understood in the context of an expanded debate that includes individual and organizational dimensions.

The evidence we provide to suggest that short-termism may be determined at the work group level is important, given the emerging significance in organizations of networks of autonomous teams (e.g., Quinn, Anderson, and Finkelstein, 1996; Miles *et al.*, 1997). Supporting the autonomy of the team is particularly important to knowledge creation (Nonaka and Takeuchi, 1995: 75–78), and therefore autonomy should not be infringed where knowledge creation is an essential strategic component. Firms may therefore face a dilemma; changing the behavior of short-termist groups may be necessary to long-term performance, and yet seeking to impose change may be seen as an infringement of autonomy. Alternatively, the tension implied by a mix of groups, some of which are short-termist while others are long-termist, might provide a vital response to the challenge for the firm to perform well *both* in the short *and* the long term. Balance may be achieved through diversity. In either case, we suggest that further understanding of both the functional and dysfunctional consequences of autonomous teams provides a valuable source of future research. Short-termism appears to have a strong social dimension that is worthy of further investigation in this regard. In particular, context holds important implications for social influence theories (Fiss, 2006), while research into social networks may prove to be insightful for the understanding of referent choice (Ho, 2005). Extending our research beyond in-group conformity provides opportunities to build upon our work group finding so that the sources and processes associated with social influence can be elaborated.

Results at the level of the individual demonstrate a significant association between experience of role ambiguity and short-termism. This is the case for both direct and indirect measures of managers' temporal orientation, and suggests nontrivial implications for researchers and practitioners.

Practical consequences center on role ambiguity's subjective and objective elements (King and King, 1990). The subjective element in role ambiguity implies that short-termism could be addressed through recruitment policies, especially given that people with a high 'personal need for structure' (Moskowitz, 1993) are vulnerable to role ambiguity (Elovainio and Kivimäki, 2001), and, thereby, short-termism. The objective element refers to actual, verifiable conditions in the work environment (King and King, 1990), which implies that formal changes at the level of role could change an individual's temporal reference points. These formal changes should, as far as is feasible, focus on reducing or changing the nature of the role ambiguity confronting the manager. As it is, the determinants and consequences of role ambiguity remain a potent and researchable topic for investigation (Elovainio and Kivimäki, 2001), thus suggesting that extending research questions to include organizational-level issues such as short-termism could provide the means to improving our understanding of both short-termism and of individuals.

Understanding can be further improved by exploring the interplay between short-termism and myopia. Our study focused on short-termism, or the pursuit of short-term success to the detriment of long-term performance—which we differentiated from myopia, defined as limitations in foresight. Short-termism and myopia can be clearly differentiated, and yet remain interlinked, so that the nature and interrelationships between these facets of organizational life may benefit from future research. For instance, the concept of myopia may be broadened beyond the temporal dimension to include spatial myopia, which, for instance, pertains to limitations in managers' awareness of technologies available outside the firm (Miller, 2002), and collective myopia, where managers are able to make joint sense of their immediate context, but are unable to assess the broader consequences of their actions (Chikudate, 2002). Myopia in general may be a determinant of short-termism; for instance, collective myopia may imply the ability to make sense of the present or the immediate future, but the inability to monitor emerging patterns of events such that current actions lead inadvertently to detrimental outcomes in the longer-term future. The definition of temporal myopia may additionally be defined more tightly in terms of the responsibility time span of the role (Jaques, 1990), which is

the time required to complete the longest project or task assigned to the role. The possibility that senior managers may need to manage projects of twenty years duration or more presupposes a different level of foresight than that of the supervisor who is only required to foresee events one day into the future.

The exploratory nature of the research implies that there are limitations. First, the use of respondents from a single organization limits the generalizability of the results. Testing the hypotheses across a range of companies provides a research opportunity. Second is the use of certain research instruments for the first time. These require further development and the instruments should be linked to alternative forms of measurement that are not as susceptible to inflation in correlation results as the self-report measures used here. Third, our use of self-report questionnaire data introduces potential common method bias into the analysis. Fourth, certain of the constructs investigated may be better studied using longitudinal data, rather than the cross-sectional data used in this study. Finally, no attempt was made in this study to investigate mediating variables, including personal need for structure (Elovainio and Kivimäki, 2001) and performance (Miles and Perrault, 1976), which have been associated particularly with role ambiguity. The strength of finding for the consequences of role ambiguity for short-termism should encourage other researchers to build more elaborate models to explain this complex variable and its relationship with organizational outcomes, including short-termism.

The limitations provide concomitant scope for other researchers to build upon the findings presented here, and also to address areas where we were largely unable to support our hypotheses. Our results suggest no capital market effect on intrafirm short-termism, as measured through hierarchical influence and managerial level. However, we did find evidence of a 'distant leadership' effect (Vera and Crossan, 2004), in that tradeoff decisions at lower management levels in favor of the short term more closely matched top management's temporal preferences than they did upper middle management's. These findings suggest that the association between short-termism and hierarchy may not be straightforward. The results of our explorations point to the need for a more sophisticated analysis of the relationship between short-termism and hierarchy.

We found no association between short-termism and the importance attached to accounting information within the performance measurement system. Further, we found no association between short-termism and the other formal methods of communication that supported performance measurement. Short-termism may therefore be a manifestation of the 'organization mind,' which relies upon tacit understanding (Ropo and Parviainen, 2001), as opposed to the kinds of values and attitudes that can be articulated in explicit terms. More precisely, given the differences that we encountered across the firm, short-termism may be associated with multiple collective identities, represented by competing values and preferences (Shamir *et al.*, 1998). It follows that there are practical implications if short-termism is to be brought within the province of hierarchy and formal communications. The implications are closely related to Berson and Avolio's (2004: 641) findings, which suggested that where senior managers develop strategic responses, 'their "translation" and dissemination depends in large part on subsequent levels of management and their leadership style.' Berson and Avolio found greater agreement as regards strategy within hierarchies where leaders pursued a particular leadership style. Senior managers may thus choose to diffuse their temporal preferences through appropriate leadership, with concomitant implications for the training of managers at all levels; since the skills associated with particular leadership styles can be taught (Dvir *et al.*, 2002).

A *McKinsey Quarterly* report (Felton and Fritz, 2005) continues to repeat Porter's (1992: 71) message that, given current corporate governance structures, the directors of firms in the United States do not have adequate knowledge to allow them to move away from potentially short-termist financial concerns to deliver long-term strategy that is based upon detailed knowledge of the firm. Two solutions are offered by Felton and Fritz: one based upon revising the range of metrics reported within firms and the second based upon boards challenging and negotiating strategy, which, it is argued by the report, should be developed through interactions between directors and managers. Our findings support recommendations consistent with the second of the two Felton and Fritz (2005) solutions since short-termism appears to derive from social and personal factors that depend upon intrafirm interactions. The

fundamental practical consequence of our study is the need to reinforce the importance of the social psychology of the firm to strategic leadership.

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