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Abstract

Over the past few years, criticisms, that many of the management accounting techniques of the last decade lack integrated theories that provide a deeper explanation of the technical phenomena constructed, have been levelled by management accounting researchers. The implications of the conclusions drawn by Ittner and Larcker (2001) and Zimmerman (2001), that research relating to practitioner-oriented techniques has neglected the broader theoretical context, is challenged by reference to existing theoretical concepts that provide this underpinning and through this a more complete understanding of the technique. One recent technique developed has been Kaplan and Norton's strategic balanced scorecard, to which this paper relates the theoretical concepts of cybernetics, specifically the work of Maruyama. Three fundamental characteristics of cybernetics theory are identified; causal relationships, communication and change. These are compared to the practical formulation of the strategic balanced scorecard. It is argued that these characteristics are common in the theory and in the practice and fit the contemporary description of theory as they explain and predict the reality of the strategic balanced scorecard, create meaning, are well constructed, and link the subjective and objective realms of experience.

Key words: Cybernetics, strategic balanced scorecard, managerial accounting theory.

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Introduction

Drawing on Systems Theory and in particular the contribution of Maruyama, this paper relates the theoretical concepts of cybernetics to provide a conceptual underpinning for the balanced scorecard. In doing so the paper argues that the relationships between the four perspectives in the recently developed strategic balanced scorecard (Kaplan and Norton, 2001a) can be explained through the concepts of mutual reciprocal causality, and positive and negative feedback articulated in the ideas of amplified heterogeneity (Maruyama, 1963; 1982). The paper contends that the increased management requirements of today's complex business environment, as depicted in the development of the strategic balanced scorecard, and expressed through the feedback loops and causal relationships, parallel the reciprocal causal loops on specific aspects of the ongoing rationalisation process of learning and inter-action development of cybernetics theory

Motivation

In a review of research in managerial accounting, Ittner and Larcker (2001) made several general observations regarding empirical managerial accounting, as presented in both mainstream and practitioner-oriented accounting journals. These observations included

> "…the research is driven by changes in practice…", "…many papers are motivated purely by the fact that a certain topic has received considerable attention in the business press, with little effort to place the practice or study within some broader theoretical context…" and "…we are left with an underdeveloped body of research that fails to build on prior studies to increase our understanding of the topic…".

Zimmerman (2001) supports this argument when he states,

> "The literature has failed to move from describing practice to developing and testing theories". He continues, "…one reason that the empirical managerial literature has failed to produce a coherent body of knowledge is because the literature's objective is not to test theories".

While this may be so with respect to practitioner-oriented journals, it does not explain the lack of theory development in mainstream managerial accounting journals to provide a theoretical underpinning for recent accounting innovations in general, and the strategic balanced scorecard in particular.

Therefore, the motivation for this paper springs from Zimmerman's (2001) challenge that without theory development our stock of knowledge in all areas of accounting inquiry will suffer. The challenge is to provide a conceptual lens that examines the practical-theoretical dualism which is currently impeding a conceptual understanding of practical or practitioner-oriented techniques.

Conceptual Development and Purpose

Research within the discipline of accounting is concerned, in part, with interesting relationships and with building a body of knowledge. Much of what has informed accounting research has developed within the natural and social sciences and, as such, provides what Llewelyn (2003, 663) refers to as "a bewildering array of theoretical forms". To negotiate a conceptual path this study draws on the insights of Bennett (1991) and Llewelyn (2003). Bennett (1991) identified four basic levels of research: description, classification, explanation, and prediction. It is the third level, explanation, which focuses this study. Explanation is seen as an attempt to make sense of observations, by explaining the relationships observed and attributing causality based on some appropriate theory (Smith, 2003). The notion of explanation fits well with Llewelyn's notion of 'concept theories'. As

Llewelyn (2003, 672) states, concepts constitute theories of practice, which provide "fundamental tools used in social practice (and in social science) both to observe and represent the world".

This notion of what is theory is also seen by Mautner (2000, 562) as "a set of propositions which provide principles of analysis or explanation of a subject matter". Alternatively, Jary and Jary (1991, 658) provide as a more formal view;

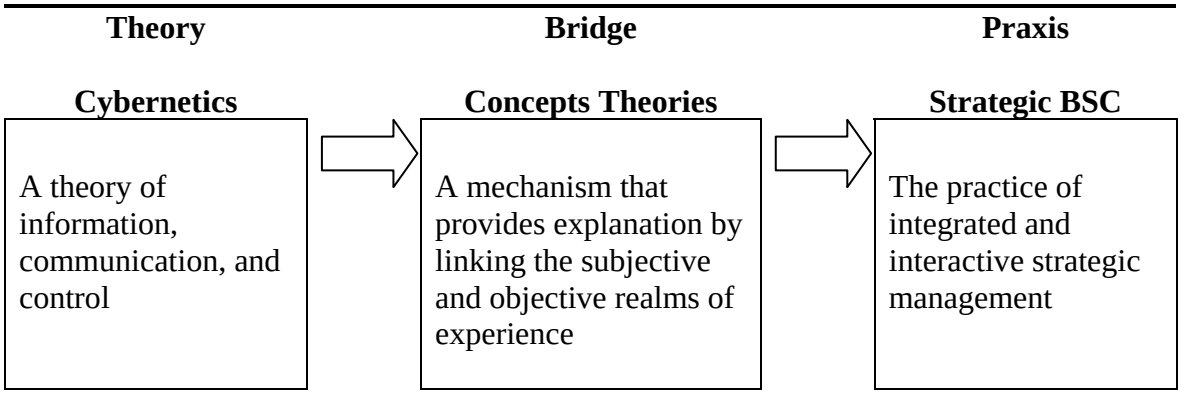
> "any set of hypotheses or propositions, linked by logical arguments, which is advanced to explain an area of empirical reality or type of phenomenon".

While the procedural, strategic, and visionary aspects of the balanced scorecard have continued to revive and/or develop a comprehensive framework of organisational improvement, there has been little development of a complementary conceptualisation that underpins this phenomenon. Therefore, the purpose of this paper is to provide a bridge between the theoretical aspects of cybernetics, in particular that based on the work of Mogorah Maruyama, to the practices of the strategic balanced scorecard. This bridge is provided using Llewelyn's (2003) notion of concepts theories.

This paper predicated on Llewelyn's (2003) concept that theory reflects meaning and meaning reflects how something is connected or related to something else. Consequently, cybernetics, which was seen by Morgan (1986) as a theory of information, communication, and control, provides an understanding of the integrated and interactive management practices contained in the strategic balanced scorecard. Therefore, using the principles of Llewelyn's (2003, 674) concept theories which "provide meaning and significance through linking the subjective and objective realms of experience"; this paper will argue that cybernetics provides a legitimate conceptual face to support the praxis of the balanced scorecard. This process is depicted in Figure 1

Figure 1

Linking Theory and Praxis through Concepts Theories



Cybernetics

Historically, cybernetics can be traced to the writings of Plato, who in the *Republic* used the term *Kybernetike*, a Greek term to describe the art of steersman-ship, both in its literal sense of piloting a vessel and as the metaphorical sense of piloting the ship of state. The link from Plato to organisational theory is through the works of thinkers such as Wiener (1949), Forrester (1968), and von Bertalanffy (1968). Such thinkers defined the academic domain we describe as Systems Theory, which demonstrates the self-regulating aspects of the firm together with the use of feedback from the consequences of activities to reshape processes and to facilitate the attainment of the vision or goal (Marx, 1970). The concept has been described as an "interdisciplinary science focusing upon the study of information, communication and control" (Morgan, 1986, 84), and more recently, as "a discipline for seeing wholes … a framework for seeing interrelationship rather than

things, for seeing of change rather than static snapshots" and the cornerstone for the healthy, proactive, and learning organisation (Senge, 1991).

The understanding of cybernetics in the 1950s focused on the system's ability to engage in self-regulating behaviour and was dependent upon the process of information exchange involving negative feedback. Systems of negative feedback, engage in error detection and correction automatically, so that movement beyond specified limits in one direction initiates movement in the opposite direction to maintain a desired course of action (Morgan, 1986). Therefore, cybernetics leads to a theory of communication and learning stressing four key principles. Specifically:

- Systems must have the capacity to sense, monitor, and scan significant aspects of their environment.
- They must be able to relate this information to the operating norms that guide systems behaviour.
- They must be able to detect significant deviations from the norm; and,
- They must be able to initiate corrective action when discrepancies are detected (Morgan, 1986, 86-87).

Therefore, the principle characteristic of this self regulating system is the presence of a control loop, whereby system components may be modified on the basis of information inputs regarding performance, and comparison of performance with criterion value.

The Second Cybernetics

It is the extension of the 'single loop' model to that of a 'double loop' learning system, the process of questioning the role of the framing and learning systems that underlie the actual organisational goals and strategies, that provides the concept of Maruyama's (1963) 'second', and more complex, cybernetics system. Such a development allows changes in the governing variables and causes ripples of change through the system. This process is referred to by Maruyama (1963) as deviation-amplifying and deviation-counteracting causal relationships. A similar mechanism is supported by Argyris' (1974, 1982) model where double-loop learning allows modifications to an organisation's policies and objectives through detection and correction of error and the detection and replication of positives.

While the 'first' cybernetics and the 'second' cybernetics are systems of mutual causal relationships, or systems of mutual feedback, it is the deviation-amplifying model, rather than the deviation-counteracting model, that distinguishes the 'second' cybernetics from the 'first'. The central component of Maruyama's (1963) model is the realisation that the elements in the system influence each other either simultaneously or alternately. The major development flowing from the first cybernetics was the inclusion of mutual positive feedback between its elements. Thus the second cybernetics identifies both the negative elements, the stagnation of development, or the obstruction to the development of the system, and the positive elements, the dynamics or strategic improvements to the system, thereby providing the interaction between the feedback loops, and through the concept of mutual causality, the effect this has in determining the system development.

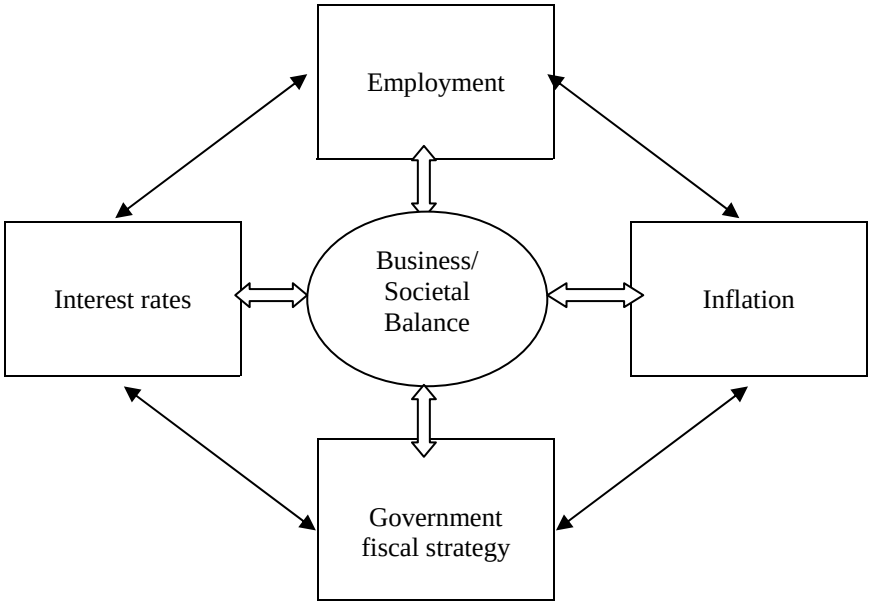
Whereas Maruyama's (1963) primary theme was the identification of mutual causality his secondary theme was the process associated with mutual causality through the action of positive and negative feedback loops, which amplify the effects of the initial change or "kick". In economic terms this would be seen as the multiplier effect. According to Maruyama (1963, 164) "all processes of mutual causal relationships that amplify an insignificant initial kick build up deviations and diverge from the initial condition". The underlying rule is that only when the size of influence in one direction has an effect upon the size of influence in the other direction, and is in turn affected by it, is there a mutual causation.

In this model, interactions continuously generate heterogeneity and new patterns of mutual beneficial relations among heterogeneous elements. The development may be gradual or rapid. While changes need not occur in leaps, they do usually occur continuously and gradually. However, leaps may occur because of either very rapid change, the exceeding of a threshold or a major change in strategy (Maruyama, 1980). Further, Maruyama argues that the "kick" can be induced, as in the strategic balanced scorecard, through an understanding of the value propositions. Maruyama theorises that to break a particular syndrome it is necessary to break the link by introducing, or removing, a positive or negative influence into the loop. The effect of this would be to turn the deviation-amplifying process into a deviation-counteracting process which should lead to stabilisation, or at least oscillation.

Relating the 'second' cybernetics to industry, management, business and government Maruyama (1982) suggests that within society, particular activities affect, or are affected by, one another. Maruyama (1982) places these activities within four groupings: employment, inflation, interest rates, and government surplus/deficit, each of which impact on the business/societal balance required. Equilibrium is obtained when the four characteristics are in balance, thus producing a strategic balanced scorecard for society. This is depicted in Figure 2.

Figure 2

Maruyama's Characteristics of the Second Cybernetics Model



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The Balanced scorecard

While the balanced scorecard has been described in great detail in the management accounting literature, a brief description will serve to reinforce its importance as a management technique designed to improve an organisation's values, strategies, process, and success.

Kaplan and Norton's (1992, 1996a, 1996b, 2001a) balanced scorecard approach enables managers to view performance from four important perspectives. First, the financial perspective, which includes profitability measures such as cash flow, sales growth, and operating income by division, increased market share and return on equity. Second, the customer perspective that encompasses such measures as market share, response time, on time performance, product reliability, percent of sales from new products, percent of sales from established products and on-time delivery. Third, the innovation and learning perspective measures such things as new patents, number of new product launches, process time to market, and time taken to develop next generation products. Finally, the

internal business perspective, which focuses on quality, time and efficiency measures, direct materials efficiency variances, effect yield, manufacturing lead-time, head count and inventory.

The balanced scorecard forces managers to focus on the handful of equally important (balanced) measures that are assumed to be critical success factors to sustain and improve performance in the chosen competitive environment (Lipe and Salterio, 2000). Causality is therefore an important aspect of the balanced scorecard concept. The balanced scorecard also denotes a commanding top-down approach to its formulation. The measures on a balanced scorecard are used by executives to articulate the strategy of a business, to communicate the strategy of the business and help to align individual, organisational, and cross departmental objectives to achieve a common goal (Kaplan and Norton, 1996b). In this way the balanced scorecard is a means of communication, information, and learning that puts the business strategy at the centre. These strategic measures are translated into diagnostic measures at the operational level of the business. It is in the use of the innovation and learning perspective that the balanced scorecard extends the focus of internal descriptive objects over traditional management accounting techniques.

The Strategic Balanced scorecard

Moving from the balanced scorecard to the strategic balanced scorecard requires moving from concepts that improve performance measurement systems to a system of integrated and interactive strategic management. Fundamental to the success of this enhanced system is the alignment of management processes and the focus of the entire organisation on the implementation of long-term strategy. Central to this are three key characteristics: (i) mutual cause-and-effect linkages; (ii) double-loop learning: and (iii) the identification of a strategic initiative (the ‘kick’) (Kaplan and Norton, 1998b).

The chain of mutual cause-and-effect relationships should pervade all four perspectives of the strategic balanced scorecard. Therefore, every strategy identified for a strategic balanced scorecard should be an element in a chain of mutual casual relationships. It is these elements that communicate the strategies through each perspective by amplifying the effect of the action throughout the organisation (Kaplan and Norton, 1996b). This chain of cause-and-effect relationships represents senior management’s assumptions about the relationship of processes and decisions enacted today that were expected to favourably impact on various core outcomes in the future (Kaplan and Norton, 1996a). However, what is often overlooked in the practitioner literature is the reality that amplifying cause-and-effect relationships are also capable of amplifying unfavourable as well as favourable outcomes. It is here that the second principle, double-loop learning, in particular double-loop learning about strategic issues, becomes so critical.

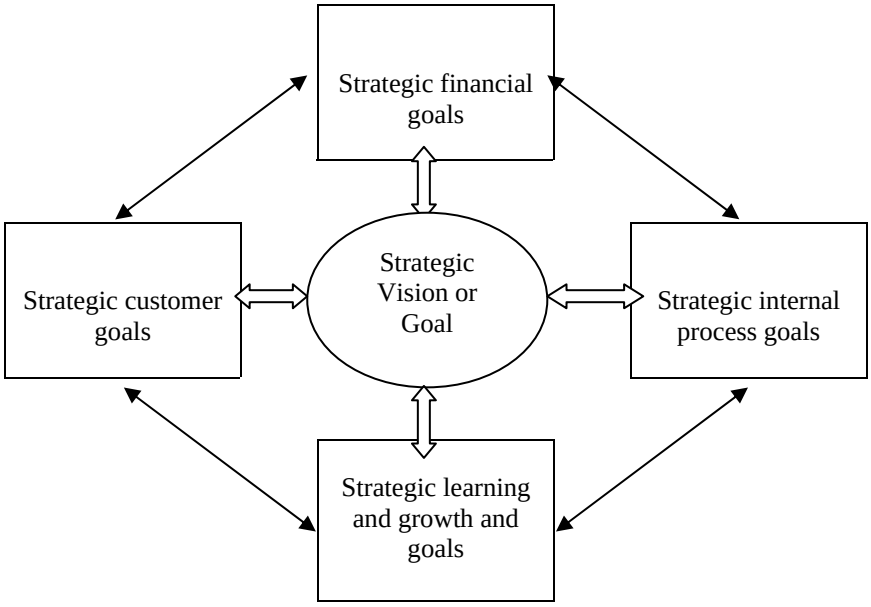
Double loop learning, or the process of learning to change underlying values and assumptions, occurs when managers question their underlying assumptions and reflect on whether the conceptual foundations under which they formulated their strategies remains consistent with current evidence. This process acknowledges the need to adjust existing strategies, or devise new strategies, to capitalise on new opportunities, or to counter new threats, not anticipated when the initial strategies were implemented. This process mimics what Argyris and Schon (1974, 18) refer to as ‘form, test, and modify’, or a hypothetico-deductive process. Such a process requires feedback about whether the planned strategy remains a viable and successful strategy, or to question the governing variables themselves. Therefore, double-loop learning occurs when error is detected and corrected (or a positive is detected and replicated) in ways that involve the modification of an organisation’s norms, policies and objectives (Argyris and Schon, 1978). In terms of a strategic balanced scorecard the process “serves as the linchpin of the strategic learning process, linking the operations control process with the learning and control process for managing strategy” (Kaplan and Norton, 2001b, 274-275).

The third characteristic, innovation, or the 'kick', comes from the ability to improve business processes, consistent with a customer value proposition, and depends on the ability of management to change behaviour and focus their knowledge on the organisations strategic vision or goals (Kaplan and Norton, 2001b). Within the strategic balanced scorecard concept this principle is located in the learning and growth perspective and innovations flowing from this perspective are considered to be the ultimate drivers of strategic outcomes. Never the less, such initiatives still require an initial "kick", which in the case of the strategic balanced scorecard, comes from an understanding of the value propositions contained within the knowledge strategies of customer intimacy, product innovation, and operational excellence.

The evolution from balanced scorecard to strategic balanced scorecard results from a desire to achieve a revitalised strategic focus and alignment. This process is supported by five common principles: (i) translate the strategy to operational terms, (ii) align the organisation to the strategy, (iii) make strategy everyone's everyday job; (iv) make strategy a continual process, and (v) mobilise change through executive leadership (Kaplan and Norton, 2001b). The strategic balanced scorecard is depicted in Figure 3.

Figure 3

Kaplan and Norton's Strategic Balanced scorecard



Discussion

The linkage of the systems theory approach, through the second cybernetics, and the practical application of the strategic balanced scorecard can be observed at a number of levels. Conceptually Maruyama's (1963, 1978) theory construct supporting his second cybernetics, considered deviation-amplifying and deviation-counteracting mutual causal relationships at the biological, social and business levels. The reconciliation of the practical aspects of the second cybernetics (Maruyama (1980) to a practical organisational/business situation compared the biological/social theory to American business attitudes, which in Maruyama's (1979) view manifested themselves as a pervasive malaise. This, he contended, was due to reciprocal causal change amplifying loops acting upon a set of fallacious assumptions, specifically; (i) the zero sum game assumption; (ii) the assumption of the desirability of homogeneity and standardisation; and, (iii) the belief that equilibrium is desirable. The conceptual and practical aspects of the second cybernetics were drawn together to produce an application to a business environment by the inclusion of a new set of characteristics that acknowledged cultural, social and political factors, technological innovations

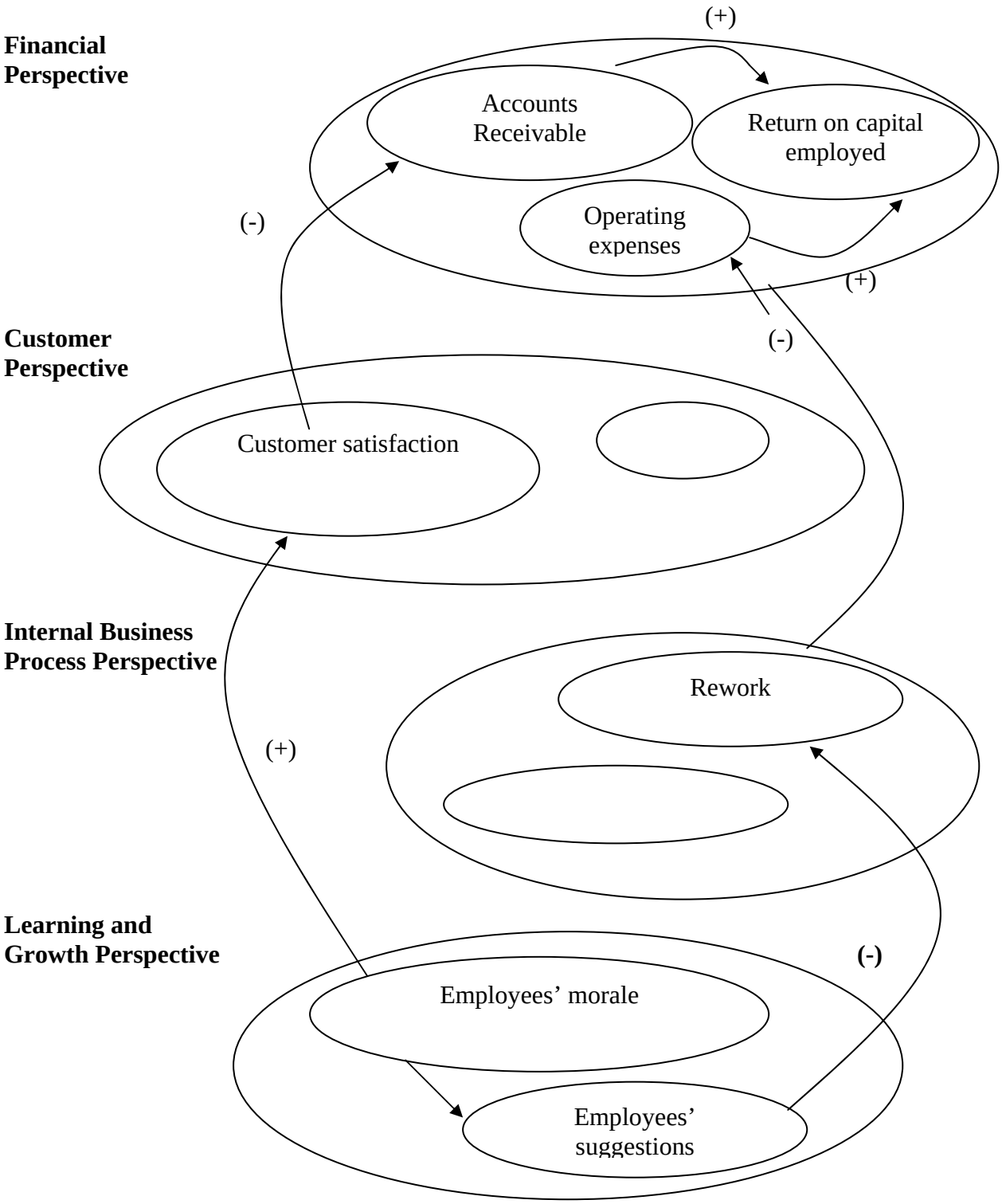
that facilitate de-standardisation of production, ecological problems, and a new generation of labour with a new philosophy about work (Maruyama, 1982). It is this last incarnation of the second cybernetics that provides the positive/negative feedback model. This relationship is shown in Figure 4, which provides a balanced relationship between business and societal goals – a strategic balanced scorecard for society.

Kaplan and Norton's (1996a) strategic balanced scorecard can be conceptualised in the same manner as Maruyama conceptualised the second cybernetics, through a series of deviation amplifying and deviation-counteracting mutual causality loops. Specifically, Kaplan and Norton's structure would correspond to Maruyama's (1980) morphogenetic (negative or positive) causal loop model, in which probabilistic or deterministic causal loops can increase heterogeneity, generate patterns of mutual beneficial relations among heterogeneous elements, and raise the level of sophistication of the system.

This process is depicted in Figures 4 and 5. Figure 4 represents Kaplan and Norton's strategic balanced scorecard.

Figure 4

Strategic Balanced Scorecard



Source: Kaplan and Norton, (1998b, 208)

Figure 4 depicts the cause and effect relationships in the strategic balanced scorecard by considering the effect of the linkages among outcomes in different scorecard perspectives. In this example Kaplan and Norton (1998b, 207) found,

> "Significant correlations between employees' morale, a measure in the learning and growth perspective, and customer satisfaction, an important customer perspective

> measure". This, in turn, was "correlated with faster payment of invoices – a relationship that led to a substantial reduction in accounts receivable, and hence a higher return on capital employed".

The study also found,

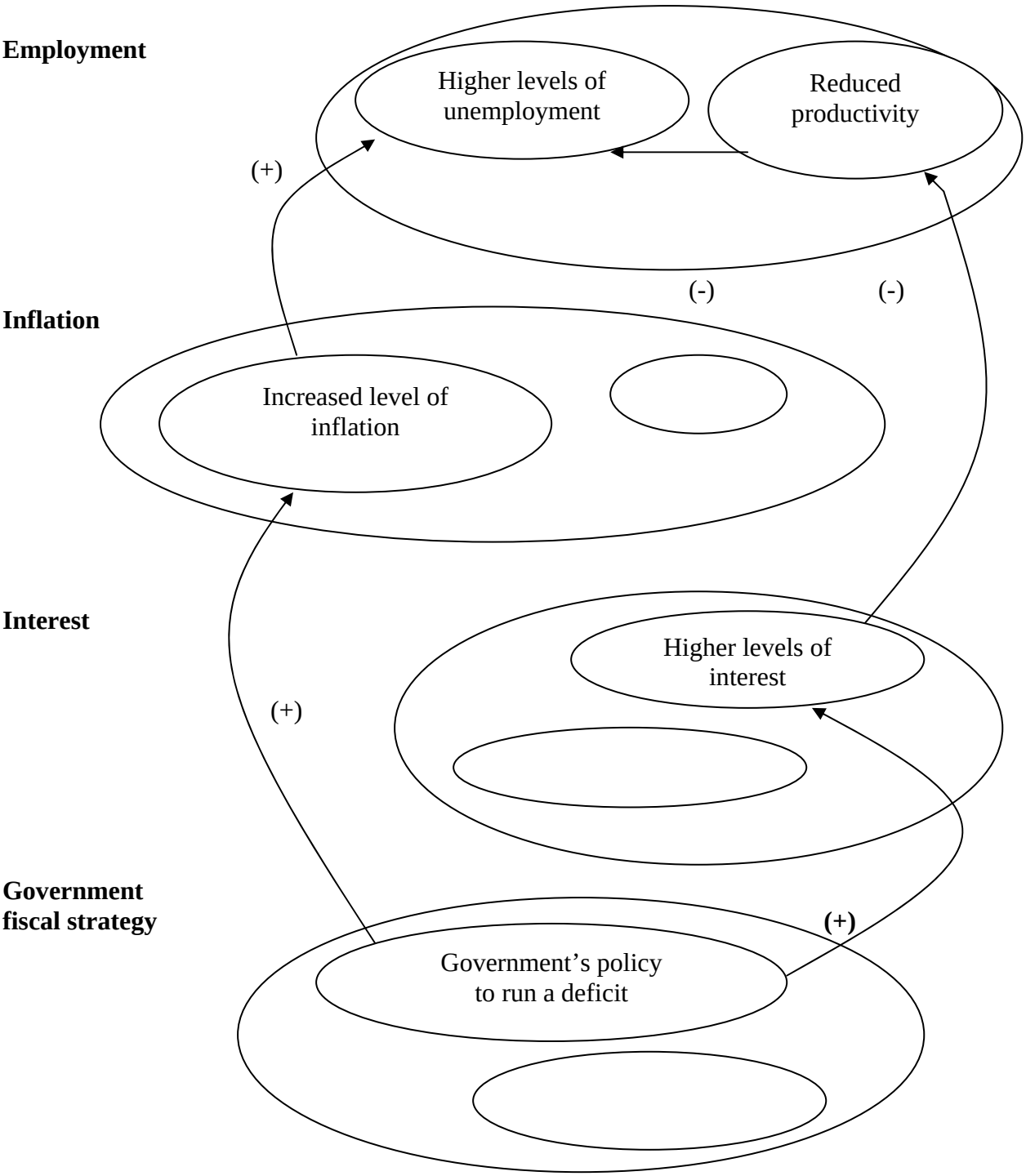
> "Correlations between employees' morale and the number of suggestions made by employees" (two learning-and-growth measures) "as well as between an increased number of suggestions and lower rework" (an internal-business-process measure).

Kaplan and Norton's (1998b) diagram also reports a correlation between lower rework and a reduction in operating expenses, which, through increased profit leads also to a greater return on capital employed. This increased return of capital employed provides additional resources to invest in improvements in the other perspectives.

Comparing this to Maruyama's 'strategic balanced scorecard for society' (see Figure 5) common patterns of relationships can be observed. A government's decision to run a deficit could generate an increase in the level of inflation, which, in turn may lead to higher levels of unemployment as industry retrench staff. This impacts by reducing productivity. At the same time the decision to run a deficit may lead to higher rates of interest, which also impact on productivity. This will, in time, cause the government to rethink its fiscal strategy.

Figure 5

Maruyama's Strategic Balanced Scorecard for Society



While the concept of double loop learning systems and mutual causal feedback relationships is common to both Kaplan and Norton's practical model and Maruyama's theoretical construct, it is the concept of the need for an initial 'kick', or innovation, which is the compelling feature.

In both the practical model and the theoretical model the interaction between the positive and negative amplifying loops is through an initial 'kick' which amplifies the deviations and diverges

from the initial condition. In earlier incarnations of the first cybernetics this was seen as natural selection, however, in his development of the second cybernetics Maruyama (1963) proposes the notion of 'cultural selection' where the kick could be applied by man, as the selection is processed through a man made environment. In the strategic balanced scorecard (Kaplan and Norton, 2001b) the kick is also applied by man, although this time through innovation.

This new conceptualisation of the kick provides the link between Maruyama's (1963) 'cultural selection' and Kaplan and Norton's (2001b) innovative inputs. Unlike the 'natural selection', where the kick is always accidental and required at the initial developmental stage, the 'cultural selection' provides a mechanism to insert a kick at any stage and in any of the perspectives.

The fundamental characteristics of the theory and the practice are summarised in Figure 6.

Figure 6

Summary of Fundamental Characteristics

	Theory Maruyama	**Practice Kaplan and Norton**
Characteristic	Displayed as	Displayed as
Causal relationships	Mutual relationships with positive and negative amplifying deviations measured by significance	Mutual cause and effect relationships validated by correlation measurement
Communication	Learning through double loop systems – primarily considered to be self correcting	Learning through double loop systems – self correcting in part, but relying on forming, testing and modification of strategies
Change	Cultural selection	Innovation

Conclusion

The purpose of this paper was to consider a conceptual model that would align the theoretical aspects of Maruyama's second cybernetics to the practices of Kaplan and Norton's strategic balanced scorecard, thus providing a theoretical underpinning for a practical application. In this way the challenges of Zimmerman (2001), and to a lesser degree Ittner and Larcker (2001), were addressed, that is to provide a theory that supports practitioner-oriented techniques. The first step was to translate the focus of a practitioner technology that is used to describe, implement and measure strategy, into the concepts and language of cybernetics theory which provided the framework for organising the insights derived from the practice. This was carried out by a review of the strategic balanced scorecard and the second cybernetics.

The second step was to construct a conceptual model that would provide the theoretical rigor required by the critics. To do so the paper considered the notion of "theory" and the definitional constructs used by various authors to posit cybernetic theory within the "theoretical" landscape. Bennett's (1991) explanatory research model that attempts to make sense of observations by explaining the relationship observed and attributing causality based on an appropriate theory provided a vehicle for the comparison. The paper also draws on Jary and Jary (1991) and Mautner (2000) who descried theory as the logical reasoning underlying a statement of a belief that is accepted when (i) it explains and predicts reality, (ii) , or a proposition which is advanced to explain

a type of phenomenon, and (iii) provides principles of analysis or explanation. This view supported the work of Llewelyn (2003, 674), whose notion of conceptual theory is that it provides a base that "creates meaning and significance through linking the subjective and objective realms of experience".

Both steps provide the translation of the practitioner-oriented technique into the concepts and language of cybernetics and the construct of a conceptual model that provides the theoretical framework. How this addresses the concerns of Ittner and Larcker (1998, 2001) as to whether the balanced scorecard represents solutions to real problems or is simply a fad promulgated by consultants, and if it places the practice of the strategic balanced scorecard within some broader theoretical context, depends on the importance placed on theory by the reader. However, the paper has endeavoured to meet its stated purpose of filling the gap, or at least raising the interest, in "developing and testing theories explaining observed practice" (Zimmerman (2001).

References

ARGYRIS, C., 1974. *Behind the Front Page*, San Francisco: Jossey Bass.

ARGYRIS, C., 1982. *Reasoning, Learning, and Action: Individual and Organizational*, San Francisco: Jossey Bass.

ARGYRIS, C., & SCHON, D., 1974. *Theory in Practice: Increasing Professional Effectiveness*, San Francisco: Jossey Bass.

ARGYRIS, C., & SCHON, D., 1978. *Organizational Learning: A Theory of Action Perspective*, Reading, MA: Addison Wesley.

BENNETT, R., 1991. How is management research carried out? in Smith, N. C. and Dainty, P. (eds) *The Management Research Handbook*, London: Routledge.

FORRESTER, J., W., 1968. *Principles of Systems*, Cambridge, MA: Wright-Allen.

ITTNER, C., D., & LARCKER, D., F., 2001. Assessing empirical research in managerial accounting: A value-based management perspective, *Journal of Accounting & Economics*, 32.

JARY, D., & JARY, J., 1991. *Collins Dictionary of Sociology*, Harper Collins: London.

KAPLAN, R., S., & NORTON, D., P., 1992. The balanced scorecard – measures that drive performance, *Harvard Business Review*, (Jan-Feb).

KAPLAN, R., S., & NORTON, D., P., 1996a. *The Balanced scorecard: Translating Strategy onto Action*, Boston, MA: The Harvard Business School Press.

KAPLAN, R., S., & NORTON, D., P., 1996b Linking the balanced scorecard to strategy, *California Management Review*, (Fall), 39(1).

KAPLAN, R., S., & NORTON, D., P., 1998b. Putting the balanced scorecard to work, in *Harvard Business Review on Measuring Corporate Performance*, Boston, MA: Harvard Business School Press, 147-181.

KAPLAN, R., S., & NORTON, D., P., 1998b. Using the balanced scorecard as a strategic management system, in *Harvard Business Review on Measuring Corporate Performance*, Boston, MA: Harvard Business School Press, 183-211.

KAPLAN, R., S., & NORTON, D., P., 2001a. Transforming the balanced scorecard from performance measurement to strategic management: Part 1, *Accounting Horizons*, 15(1).

KAPLAN, R., S., & NORTON, D., P., 2001b. *The Strategy-focused Organization*, Boston, MA: The Harvard Business School Press.

LIPE, M., G., & SALTERIO, S., E., 2000. The balanced scorecard: Judgmental effects of common and unique performance, *The Accounting Review*, 75(3).

LLEWELYN, S., 2003. What counts as "theory" in qualitative management and accounting research? *Accounting Auditing & Accountability Journal*, 16(4).

MARUYAMA, M., 1963. The second cybernetics: Deviation-amplifying mutual causal processes. *American Scientist,* 51.

MARUYAMA, M., 1978. Heterogenistics and morphogenetics. *Theory and Society,* 5.

MARUYAMA, M., 1979. Goal moratorium syndrome. *Technological Forecasting and Social Change,* 15.

MARUYAMA, M., 1980. Mindscapes and science theories. *Current Anthropology,* 21.

MARUYAMA, M., 1982. Mindscapes, management, business policy and public policy. *Academy of Management Review,* 7.

MARX, N., (ed.) 1970. *Learning: Theories,* London: Collier-Macmillan Ltd.

MAUTNER, T., (ed), 2000. *The Penguin Dictionary of Philosophy,* Penguin Books; London.

MORGAN, G., 1986. *Images of Organizations,* CA: Sage Publications.

SENGE, P., M., 1991. Learning organizations, *Executive Excellence,* 8(9).

SMITH, M., 2003. *Research Methods in Accounting,* London: Sage Publications.

VON BERTALANFFY, L**.,** 1968. *General Systems Theory,* New York: George Braziller.

WIENER, N., 1949. Cybernetics: Or Control and Communication, in *The Animal and the Machine,* Cambridge, MA: Massachusetts Institute of Technology.

ZIMMERMAN, J., L., 2001. Conjectures regarding empirical managerial accounting research. *Journal of Accounting and Economics,* 32.