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# Human resource management and performance

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The study of human resource management (HRM) has been invigorated by the promise that there is a best-practice, high-involvement management (HIM) that can guarantee superior organizational performance. None the less, there remain concerns that contingency theory still rules, that is, that the fit between the human resource systems and their context, and particularly the organization's business strategy, is all important and, thus, that HIM will only outperform other systems in certain circumstances. In the 1990s, there has been a spate of research that has sought to test whether HIM is indeed universally relevant. This paper reviews these studies. The paper first introduces the conceptual dimensions of the debate concerning HRM and performance. This shows that the issues go beyond a simple competition between universalism and contingency theory. There are more complicated hypotheses linking human resource practices beneath the surface of the recent literature. The second part of the paper overviews the studies in the light of these hypotheses, revealing that they present an uneven picture. Firstly, there are conceptual differences underlying the studies and, secondly, the results vary between them, and the effects of HIM vary between performance measures even in particular studies. Though a fair number of the studies claim to support universalism, their claims are not always unequivocally supported by their research evidence, and it is premature to conclude in its favour. If anything, there is more support for the 'lean production' argument that stresses the interaction effect between HIM and total quality management on performance.

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## Introduction: internal versus strategic fit

Synergy, fit and integration are the key concepts in modern human resource management (HRM) theory. Attention has been given to one or more of the following three fits: (1) that between human resource (HR) practices, (2) that between these practices and more specifically between HR systems – coherent sets of HR practices – and other systems within the organization, (3) that

between HR systems and the business or competitive strategy of the organization. There has been in the recent literature little direct consideration of a fourth fit, that between the HR system and the organization's environment, though this is captured indirectly through the concept of the organization's strategy, this being the management's posture towards the environment (Youndt *et al*. 1996, 87). Throughout this paper the first fit will be called the internal fit of the HR system, the second the organizational fit, the third the strategic fit, and the fourth the environmental fit.

The bedrock of all recent discussion is the first, internal fit. It is argued (see, for example, Baird and Meshoulam 1988, 122) that certain HR practices blend better than others do, and it is sensible to select practices in conjunction with and not in isolation from each other. Consequently, when they are found together, the pay-offs will be greater than the sum of those from their individual elements. It is even argued (Barney 1995, 56) that individual practices ''have limited ability to generate competitive advantage in isolation'' of other synergistic practices. The implication is that individual HRM practices should be viewed as part of a wider system – a HR system – and a key criterion for judging such systems is whether their individual components, the HR practices, fit together in a coherent manner. A corollary of this is that part of the explanation for the observed differences in organizational performance lies in the differential usage of these synergistic combinations of HR practices. The first issue is, then, whether it is simply sufficient to adopt an integrated set of practices or whether certain combinations are better than others.

Recent discussion has in fact focused on the particular set of practices that is associated with high commitment and involvement. It includes practices such as job flexibility, teamworking and minimal status differentials that are assumed to reverse past Taylorist methods. These are assumed to generate high performance through their enhancement of the commitment and skills of employees. Variously designated as high-commitment, high-involvement or simply innovative work practices, the term high-performance practices is increasingly being used to label them, as if their performance-enhancing qualities can be taken for granted, in the way that a drug might be labelled by the disease it is known or purports to cure. None the less, while there is an apparent widespread ''agreement about what constitutes high-performance practices'' (Pfeffer 1997, 169), somewhat paradoxically given the label, there is no consensus about whether they represent the one best way of approaching HRM.

More specifically, the debate is whether high-performance systems will universally outperform all other systems or whether the optimal system is relative to the circumstances of the firm (Becker and Gerhart 1996; Becker and Huselid, 1998a; Fenton O'Creevy 1998, 7–13; Youndt *et al*. 1996). In discussions on the contingent nature of HR systems, the significant context of the system is generally taken to be the organization's strategic posture (Youndt *et al*. 1996, 87), the implication being that it is the organization's approach to its environment rather than this directly that is crucial. Thus, the contingency theory of HRM implies that, in general, HR systems with internally fitted practices that match the strategy of the firm will

perform best. In contrast, strong advocates (e.g. Pfeffer 1994) of the high-performance management system argue that it outperforms all other systems in all contexts. Thus, the high-involvement practices to which they now give the label high-performance indeed have the right to be given this status, while, from a contingency perspective, such labelling is misleading. This debate is thus reducible to whether high performance is associated with a specific set of internally consistent (high-involvement/performance) practices or rather with the strategic fit of HR systems. Accordingly, it can be resolved empirically. The burgeoning empirical literature on the HRM–performance link has indeed focused on testing whether high-involvement/performance systems are universally the best (the best practice hypothesis) or only in certain circumstances (the best-fit hypothesis).

This review will concentrate on this literature. It will, however, show that issues raised by the literature cannot be reduced simply to a matter of whether the validity of the high-involvement/performance system is universal or contingent. First, there are conceptual differences underlying the different terms being used to label the specific bundle of involvement practices that has been at the forefront of HRM, and these imply different conceptions of the relationship between HR practices and performance. Second, the literature addresses issues that extend beyond a simple competition between the contingency and universalistic perspectives, with its emphasis on testing the significance of strategic fit. In particular, there is an issue running through the literature concerning the importance of organizational fit. Initially, this focused on the specific link between high-involvement systems and total quality management or lean production. Is it the case that high-involvement systems are the personnel side of such manufacturing strategies and, hence, are only likely to be found when organizationally fitted to these, or is it simply that, when high-involvement and total quality systems are used together, the performance effects of each will be magnified? More recently, attention has been given to whether the HR system is organizationally fitted in general and not simply whether it is fitted to the particular organizational logic of lean production or total quality management (TQM). The argument is that high-performance systems that are integrated with the wider organization will yield stronger results than those that are not. Third, the results of the empirical studies are not uniform, not least because their underlying concepts and designs differ. Overall then, the terrain of debate is more open and muddier than is often presumed.

The paper is divided into two parts: the first part introduces the conceptual discussion surrounding the studies of high-involvement/performance management, and the second part reviews the studies themselves.

## Theoretical Developments in the Human Resource Management and Performance Debate

### *The Terminology Surrounding High-involvement Management*

The common element in all the talk of high-commitment, high-involvement and high-performance management is the contrast with a Taylorist, control type of

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management. The prime purpose of this section is to assess whether the proliferation of terms to describe this non-Taylorism entails differing conceptions, or whether it is simply a matter of semantics.

High-commitment management, following Walton (1985), is generally characterized as entailing (a) a particular orientation on the part of employers to their employees, based on an underlying conception of them as assets to be developed rather than as disposable factors of production, and (b) the combined use of certain personnel practices, such as job redesign, job flexibility, problem-solving groups, teamworking and minimal status differences.

A literal definition of high-commitment management would (a) only include in its designated combination of practices those that are known to affect organizational commitment, and (b) assume that their impact on organizational performance is only because of their effect on organizational commitment. A less literal version would not limit it to practices with verified effects on commitment, but rather would include all practices either hypothesized to impact on commitment and/or associated with organizations known to be forsaking Taylorist methods. It would also extend the ways in which these practices enhance performance beyond organizational commitment and, in particular, would emphasize the role of knowledge and skill acquisition. In addition, organizational commitment might be treated as an umbrella term for a whole set of interrelated attitudes and orientations, such as having a flexible role orientation, strong group-orientation, a business and quality consciousness and a willingness to accept change and contribute to innovation.[1]

Walton (1985) (as seemingly do others, e.g Wood and Albanese 1995) tends to use the term 'high-commitment management' in the less restrictive way, and his characterization of high-commitment practices draws heavily on observations of leading-edge developments in organizations in the USA that have been attempting to abandon their Taylorist heritage. Job design theory is, though, particularly significant to his thinking. Moreover, despite the emphasis on commitment, Walton's presentation does not rule out the possibility that high-commitment practices might impact on performance through their having an effect on the competencies of employees.

The term 'high-involvement management', as popularized by Lawler (1986), is equivalent to the less restrictive interpretation of high-commitment management. Lawler has certainly drawn attention to the importance of enlarging the skills and knowledge of all employees, as well as to psychological processes other than intrinsic motivation such as goal-setting, and even suggesting a role, at least in some circumstances, for money motivation.

### *High-performance Management*

'High-performance management' is the most recent term used to describe the non-Taylorist form of organization. Yet, paradoxically, in the 1990s, as writers have increasingly gravitated towards the term 'high-performance work systems', different perspectives underlying its usage have become more visible.

First, it may be used as a synonym for high-commitment or -involvement management, particularly in order to

highlight its benefits when marketing HR models to managers who appear increasingly oriented towards bottom-line results. This usage may also reflect a growing confidence in its economic effects as research began to demonstrate positive outcomes.

Secondly, it is treated as a broader notion, as the unity of this high-involvement management (HIM) and TQM or lean production (Womack *et al.* 1990). Lawler, himself, has begun to use the term 'high-performance management' in this way (Lawler *et al*. 1995). Definitions of TQM and HIM methods typically overlap as teamworking, quality circles and the sharing of performance data are included in both. But Lawler *et al*. go further and argue that the two sets of practices are ''complementary in their impact on organizational performance''. They thus recommend that TQM and employee involvement ''should be treated as an integrated approach to organizational transformation'', since ''employee involvement without TQM practices is less likely to affect performance positively and vice versa'' (Lawler *et al*. 1995, 144).

This second notion of high-performance management is similar to the concept of flexible production systems used by MacDuffie (1995) and other industrial relations specialists (e.g. Kochan) close to the MIT auto project (where the term 'lean production' originated). To MacDuffie's (1995, 198) mind, Womack *et al*. (1990) defined lean production largely in operational management terms, as they focused on the minimization of buffers associated with just-in-time, and thus neglected ''the *expansion* of work force skill and conceptual knowledge required for problem-solving under this approach''. Since the application and development of such skills depends on workers being motivated to contribute their discretionary effort to resolving problems, organizations must ''make a reciprocal investment in their well-being''. Consequently, flexible production is characterized by a ''bundle'' of high-commitment (MacDuffie 1995, 201) or high-involvement (Pil and MacDuffie 1996) practices, as well as the operational methods emphasized by Womack *et al.*

The third use of the term 'high-performance management systems' has arisen out of a desire on the part of some to broaden the focus away from employees' attitudes and commitment, so that such factors as skill formation, work structuring, performance management and pay satisfaction are included in the list of mechanisms through which HR practices may impact upon performance. Hence, high-performance management is not just associated with high-commitment management. Taken to its extreme, this means a management in which high performance is targeted directly, not indirectly via attitudinal structuring. Its core would be the use of performance management methods that are centred on the setting of goals and the linking of pay to their achievement. It is certainly the case that two of the foremost users of the term high-performance management, Becker and Huselid (1998a, 78), accord ''performance-contingent incentive compensation systems'' a significant, if not pivotal, role in their characterization of the term. This does set the concept of high-performance management apart from earlier concepts of high-commitment management, since many of its proponents (e.g. Beer *et al*. 1984, 114) – as well as advocates of TQM (see e.g. Deming,

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1986) – associate it with the control strategy and are deeply critical of performance-related pay. (See Wood (1996a) for a review of pay systems and high-commitment management.)

None the less, merit pay is, as Foulkes' (1980) research showed, used in high-profile non-union companies such as IBM, which are often thought to practice high-commitment management. Consequently, to the extent that the model of high-commitment/performance management is based on observation of leading-edge developments rather than a theory of commitment, it is likely that merit pay will be included in its elements. Lawler (1991, 519) in fact does not reject performance-related pay, as he sees money as a potential motivator; none the less his emphasis is on group-based incentives and profit sharing (as well as incentives for training – skill-based pay) as he treats individual incentive plans as not very supportive of the commitment strategy (Lawler *et al*. 1995, 20).

It has been shown that there are clear differences in the perspectives underlying the various terms for the non-Taylorist organization and, moreover, that the same terms can be used in differing ways. This variety is particularly pronounced in the case of high-performance management. If the intention is to draw attention to the importance of performance management, goal-setting and performance-related pay, then its usage does reflect a different perspective from that underlying the earlier conceptions of high-commitment management, which stressed commitment as a particularly important route through which involvement practices impact on performance. The implication of the term 'high-performance management', no matter in which of the three ways it is being used, is that it has the potential to outperform all other types of management. The danger is that it promotes a particular model of management before its performance effects have been adequately proven. In what follows, the term 'high-performance management' is used in either the second or third of the above three ways and only then when referring to specific writers who adopt the concept. The term 'high-involvement management', which does not necessarily assume that its effects are established and can readily admit of non-commitment routes such as skill acquisition, will be used to refer to the less restrictive model of high-commitment management.

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*Universalistic vs. contingent best practice*. Underlying all three concepts is the notion of the HR system as a synergistic set of personnel practices and the importance of internal fit of performance. Moreover, regardless of which concept of the human resource system authors work with – high-commitment, -involvement or -performance – most acknowledge the possibility that it could, at least theoretically, be universally or contingently relevant. This is so even though the term high-performance management would appear to carry an implication that it is a best-practice model. Certainly advocacy of any of the three models carries this implication. Proponents of univeralism and contingency theorists differ in terms of the *additional* criterion to internal fit by which they judge HR systems. The former, universalists,

concentrate on judging personnel management by the extent to which it fosters employee involvement and the human capital of the organization, on the assumption that a synergistic set of practices that reverses key features of the past 'command' Taylorist organization is the best way of managing employment. This general argument can be formulated thus:

> *High-involvement/performance HR systems will have positive effects on organizational performance* ($H_1$).

By contrast, for contingency theorists, strategic fit – the integration of HR systems with the overall strategy of the organization – is the additional criterion. It is aligned HR systems that will perform best. The principle that HR systems should be designed in the light of the organization's strategy means that they would be derived from the corporate strategy. Human resource planning would be downstream from the corporate strategy, yet incorporated into the mainstream of business planning. Porter's distinction between two generic strategies, cost minimization and innovative/quality strategies, is often used as the basis on which to differentiate contexts (e.g. Hoque 1999; Schuler and Jackson 1987), and it is argued that the Taylorist system fits the former strategy, while HIM is more appropriate for the latter. Human resource theory mirrored the development of generic strategies by specialists in business strategy and sought to provide HR strategies that fitted each of these. Schuler and Jackson (1987) provide the best example of this, as they articulate the link between the control approach and Porter's cost-minimization, and between HIM and his quality-oriented strategy. The availability of such generic fits provides a user-friendly way to incorporate the human factor into strategy formulation and ensure a role for personnel managers in this process, as they have the expertise to advise on the most appropriate HR system for a particular situation. This approach accords with a central tenet of all HRM that "human resources must … become an integral component of the strategic planning process" (Guest 1987, 512). What it does not do, however, is guarantee that the HR will be accorded a high status in the competitive strategy or that it will be treated as a major asset to be developed. If the firm is adopting the cost-minimization strategy under this alignment approach, a Taylorist low-involvement approach is appropriate. The second, contingency, thesis can be stated thus:

> *Strategic factors will moderate the relationship between high-involvement HR systems and organizational performance* ($H_2$).

The dispute within the area between those who think the non-Taylorist organization – regardless of how constituted – is a best-practice model, and those who view its relevance as dependent on the organization's strategy and context, is fundamental. The main axis of debate in recent literature has indeed become the two competing hypotheses ($H_1$ and $H_2$).

### *The High-involvement-TQM/Lean Production Link*

Yet the issue cannot be laid to rest here. First, underlying the second definition of

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high-performance management is the implication that high-involvement and total quality or lean production methods ought to go together and that, when they do, the pay-off from each is increased. It is in fact based on a particular perspective on TQM, which assumes that it ''cannot be successful without employee involvement'' (Lawler *et al*. 1995, 45). At a minimum, employees will receive a substantial amount of information on quality and training in TQM methods but, more significantly, they will be involved in monitoring the quality of their own work as well as in the design of ''work methods and work procedures that influence quality'' (Lawler *et al*. 1998, 7). Such involvement was a key feature of the pioneering of quality methods in Japanese manufacturing. Womack *et al*.'s (1990, 91–93) documentation of the Japanese successful pursuit of this ''lean production'' suggests that the pursuit of quality and cost minimization are not mutually exclusive, and that its distinctiveness is precisely that it can achieve both simultaneously.[2]

The implication is that Porter's (1985) dichotomy between cost-minimization and quality-oriented competitive strategies is no longer valid and, hence, it takes us beyond the contingency argument that high-involvement is only of relevance to organizations with a quality-enhancement or innovative strategy. All organizations have to compete on both price and quality and, by tending to quality, they should be able to reduce costs. The implication is that high-performance management defined as the combination of HIM and total quality methods is universally relevant. High-involvement management thus gets defined as part of a wider concern, the elevation of TQM or lean production to the status of a strategy and not just a tactic of operational management. This is certainly the approach taken by Beaumont (1995, 40) and is consistent with many of Kochan's (e.g. Kochan 1992; Kochan and Osterman 1995, 50, 79–89) writings. In Beaumont's (1995, 40) terms, an organization with a strong commitment to HRM ''competes on the basis of product quality and differentiation as well as price'' and adopts personnel polices that include a high investment in training, employment security guarantees and functional flexibility. This overall approach has sometimes been labelled the high road (Fenton O'Creevy 1998, 10; Osterman 1994) to sustained economic performance, and is often put forward as the only viable option for modern organizations, at least in OECD countries. Its significance is derived partly from the inability of such countries to compete with the wage rates of less developed countries, but more importantly because the Japanese adoption of the lean production approach has shown that quality and cost minimization are not antithetical.

This approach thus sees HIM as a necessary but not sufficient basis for high performance. Organizational fit is the additional element and, more specifically, the fit between HIM and TQM. It can be formally stated thus:

> *Organizations adopting high-involvement management in alignment with total quality management should outperform all other organizations and there is an interaction effect between the adoption of high-involvement management and total quality management on performance* ($H_3$).

### *The Importance of a Strategically Fitted High-involvement Management*

Guest, though he initially wrote (1987) before the lean production vogue, effectively goes one step beyond this argument, proposing that all elements of the organization's strategy must be integrated. Thus, though HIM is for him superior to other methods, its effects will be moderated by whether it is – in Guest's terms – strategically integrated into the business strategy. At first sight, this appears to be melding the impossible, i.e. the external fit of contingency theory with a universalistic treatment of HIM as best practice. None the less, Guest marries the two by implying that HIM is compatible with any strategy; it is the fact that there is a strategic approach to personnel in the organization that is important, not that the HIM is linked to a particular strategy. He thus differentiates a strategically aligned HIM from one without such a strategic underpinning. He defines this as HRM, thus treating both HIM and strategic fit as core components of it, the latter being defined in a way that implies that the elevation of HR to the strategic level and the strategic integration of personnel management go hand-in-hand (Guest 1987). Guest's point of departure is not, though, to assume that HIM and strategic fit will coexist.

If HRM is defined as strategic HIM, then all HRM entails their coexistence, but not all HIM is HRM. High-involvement management is best practice but, where it is strategically integrated, its benefits will be greater than where this underpinning does not exist. In Guest's later writings, he labels the former ''good'' HRM, while those managements that have arrived at HIM by default rather than by design – perhaps ''through outside guidance, … emulation, or … following fads'' (Guest and Hoque 1994, 17) – are labelled ''lucky''. The lack of an underlying strategic orientation in these lucky organizations is then assumed to reduce or even undermine the potency of the high-involvement model. We would then expect HIM to have a significant impact on performance in all circumstances, but that the extent of this will depend on the degree of strategic integration. Taking this to be Guest's line of argument, it can be formally stated thus:

> *High-involvement management has a positive effect on organizational performance, but in addition there is an interaction effect between high-involvement management and strategic integration on performance* ($H_4$).

Nowhere in his writing does Guest really spell out why there is the added effect from strategically integrating high-involvement systems. He seems to have in mind the commonly observed phenomena of the powerless personnel department, which is disconnected from mainline business concerns. Strategic integration is, then, the institutional integration of personnel management. This may lead to human resources being given more weight in the organization (though it may be a cause of this) and the tailoring of high-involvement practices to the organization's requirements. Business strategy thus enters the HR system through its operation, not through its design. We can illustrate how this might work with the case of the appraisal process; in general it may be aimed at involvement and identification,

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but it achieves the strategic integration of the individual through the alignment of personal goals with the strategic goals of the organization, an outcome achieved within the appraisal process. Such adaptations of HR practices ensure the strategic integration at the individual level, so that employees have a clear concept of the organization's goals and how their own tasks fit into their achievement (Guest 1987). This kind of argument mirrors that of Pfeffer (1994, 65), in which HIM is best practice but the way in which it is implemented may be affected by contingent factors.[3] Following this rational reconstruction of Guest along these lines, it should be said that there is an overlap between his approach and the lean production-based argument. In his initial framework paper, he gives some weight to the importance of the goals that underpin management's design of the HR system and, in particular, associates HRM with the pursuit of quality and flexibility.

### *Human Resource Management as the Driver of Competitive Advantage*

Becker and Huselid, in several papers in the 1990s (Becker and Gerhart 1996; Becker and Huselid 1998a,b; Huselid 1995; Huselid and Becker 1996) take the argument another stage further. Their emphasis is on the elevation of the HR to a central role in the organization's strategy. The HR strategy is integral to the corporate strategy, and, it is no longer downstream of business strategy as in contingency theory, or even, as in Guest's work, simply integrated with it. The logic of their argument is that HR matters are upstream of the product market strategy. Much as Schuler and Jackson in the 1980s reflected the Porterian developments in the strategy literature, so Huselid and Becker mirror developments in business strategy and particularly the advent of the resource-based theory of the firm. In this, the strategy of the firm is no longer viewed in terms of businesses and products, but as founded on core competencies. Since these are both reflected in and created by the skills and talents of the individuals in the organization, HR becomes a major input to the organization's strategic initiatives. Moreover, it is argued that competitive advantage depends on inimitable resources and since the ''traditional sources of competitive advantage (quality, technology, economies of scale ...) have become easier to imitate'' (Becker and Huselid 1998a, 54), a premium is now placed on the skills, knowledge and aptitudes of an organization's workforce as a source of inimitable assets. The implications of this are, firstly, that managers must focus on ''identifying and solving the human capital elements of important business problems'', defined as ''problems [that] are likely to impede growth, lower profitability, and diminish shareholder value'' (Becker *et al*. 1997, 39), and, secondly, that top management treats the HR system as a potential strategic lever for the organization, an essential element of the firm's ''strategic infrastructure'' (Becker *et al*. 1997, 39–40).

First, the HR system plays a strategic role in ensuring the effective implementation of the organization's strategy by delivering behaviours that are necessary for its achievement. Secondly, the HR system facilitates the development of the human capital that defines the core competencies that are required to give the organization a sustained competitive

advantage based on unique assets. To fulfil its role successfully, the HR system must, according to Becker and Huselid (1998a), be internally coherent, externally aligned, and effectively implemented and it too must not be easily imitated. The HR systems should be highly idiosyncratic and tailored to each firm's individual situation. Moreover, if they are successful at maintaining and producing inimitable human assets, the logic is that business strategies will be increasingly distinctive. Idiosyncratic HR systems will thus be coexisting with a range of distinct strategies and themselves creating this increasing diversity. So, rather than seeing high-performance management as the model fit for the quality-enhancing or product-differentiation strategy *à la* contingency theory, the differentiation and distinctive quality of the organization's offerings are seen as a consequence of high-performance management.

Becker and Huselid work with the third concept of high-performance management, including as it does a strong role in performance-related pay, writing that it is ''generally thought to include rigorous recruitment and selection procedures, performance-contingent incentive compensation systems and management development and training activities linked to the needs of the business'' (Becker *et al*. 1987, 40). High-performance management is presented as if it were the only internally consistent approach that can have a strategic impact. The specific set of high-performance practices Becker and Huselid identify is, by implication, unique in being able to link the employees' behaviour to the strategy of the firm. In particular, it sends ''consistent signals regarding valued behaviors in the organization'' and produces the tacit knowledge that constitutes a major invisible asset of the firm that is difficult to imitate (Becker and Huselid 1998a, 58). None the less, Becker and Huselid's definition appears consistent with the universalism of high-performance management, but this clashes with the principle that the high-performance system must be fitted to the strategy, or at least the strategic intent, of the organization, in order for it to foster the distinctive competencies on which strategies are founded. Becker *et al*. (1997, 41) are, furthermore, wary of the notion of best practice, as it is not consistent with the emphasis on the inimitability of assets in the resource-based theory. Were there a best practice, it could be easily copied through benchmarking. They are also concerned that the contingency theory (with its model of strategic integration as external fit) only produces a ''limited range of strategy-HRM matches'' so that following it will not produce any substantial competitive advantage (Becker and Huselid 1998a, 58).

Becker and Huselid in fact argue that a reconciliation of the universalistic and contingency theses is possible, and, somewhat confusingly, conclude that high-performance management both is and is not a ''best-practice'' model (Becker and Huselid 1998a, 59). There are, however, two different arguments discernible in the growing body of their work. First, Huselid (1995, 644) argues, along the lines of Guest, that high-performance practices should lead to positive outcomes for all types of firms but contingent, firm-specific factors enter through their implementation. Successful tailoring of them so as to elicit behaviours that are in line with the two

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strategic requirements of the organization should ''at the margin'' (Hueslid 1995, 644) achieve extra performance. This reconciliation first implies that high-performance management is the main effect and that there is a weak interaction effect between it and strategic integration ($H_4$ above).

Secondly, Becker, first writing with Gerhart (Becker and Gerhart 1996) and then with Huselid (Becker and Huselid 1998a,b), goes further and argues that contingencies enter the determination of the practices themselves. Distinguishing practices from principles (which they call the architecture of a HR system),[4] Becker and Gerhart (1996, 786) argue that principles are generalizable and universal, but contingencies and firm-specific aspirations enter into the design of practices (and policies), and any idea that there are ''best-practice'' practices is mistaken, since they must be ''very firm specific and idiosyncratic''.[5] For example, linking rewards to performance is a high-performance principle. According to this line of argument, universalism is unequivocally (and perhaps only) applicable to the higher levels of the HR activity. This second attempt at a reconciliation of universalism and contingency theory implies that the link between high-performance practices and performance is moderated by strategic integration and the interaction effect dominates. None the less, in Becker and Huselid's (1998a, 87) latest work, the HPM system remains the main effect, this and strategic alignment (or what they call the broader ''supporting organizational logic'') are treated as two separate elements in a high-performance organization, rather than as ''substitutes''. Borrowing MacDuffie's concept of organizational logic, they argue that a supportive organizational logic is ''required to leverage the HRM system'' (Becker and Huselid 1998b, 2). This is operationalized as meaning that it is the ''complementarities between the HRM system and other organizational policies'' that enable the high-performance system to have a strategic impact. In the terms of this paper, it is the organizational fit of the HRM system that is crucial, the hypothesis is that an organizationally fitted high-performance management system should outperform all others.

The first part of this review has exposed the differing concepts underlying recent discussion of HRM, and in so doing has identified differing concepts of the HRM–performance link: (a) it may be treated as a general relationship ($H_1$), though there is still the issue of whether it is mediated principally by its effects on employees' commitment and sense of involvement or their skills; (b) it may be treated as contingent, i.e. moderated by a third factor, namely corporate strategy ($H_2$); (c) it is affected by whether the HRM is embedded in lean production ($H_3$); or (d) it is moderated by the integration of the HRM within the overall organization at either the institutional or the cognitive level ($H_4$).

## Empirical Study of the Human Resource Management–Performance Relationship

Ideally, research that aims to assess the competing hypotheses identified in the first part should include data on the following variables: high-involvement practices, total quality practices, the extent of strategic integration, the extent to which the HR is

central to the firm's competitive strategy, and organizational performance measures. It might also include data on whether the firm is pursuing one or other of Porter's generic strategies of cost minimization or high quality. In the cases where it is following a hybrid, further information would be required to gauge whether this reflects a hesitant or ambiguous strategy or is an attempt to combine high quality and cost minimization in the manner of the lean production model. Finally, the latest terminology of Becker and Huselid implies a need to differentiate between high-performance principles and practices, and to test their impact on performance separately so that data on at least the principles, if not philosophy of management, would be required in addition to those on HR practices.

No one data set includes all such information. The studies that have attempted to assess the impact of HRM systems on performance have concentrated on Hypothesis 1 (universalism) either alone or in conjunction with one or other of Hypothesis 2 (contingency theory) or an investigation of lean production (Hypothesis 3) or strategic integration (Hypothesis 4). They have focused on collecting data on the use of HR practices in order to construct a measure of the HR system and to assess whether there is an association between this and certain performance measures. Underlying all the studies is a concern for practices that develop either employee involvement or skills, i.e participation and human capital. Beyond this though, because authors have worked with differing terminology and underlying concepts, there is no consistent relationship between the terms and the bundles of practices used. Consequently, they are best discussed separately. They will be grouped according to the hypothesis(es) that they seek to test.

The review only covers studies that measure HR systems by a broad range of practices and have organizational performance measures. It thus omits research that (a) has a limited number of HR practices (e.g. Dunlop and Weil 1996), (b) assesses whether high-involvement practices tend to coexist as one would expect if they are synergistic, but does not go on to examine their performance effects (e.g. Wood 1999; Wood 1996b and Albanese 1995), or (c) examines the effects of HIM on individual attitudes (e.g. Godard 1999; Guest and Conway 1999; Parker *et al*. 1997). It describes the studies largely in their own terms. An element of rational reconstruction is, however, inevitable, but this will be largely a matter of putting the studies in the context of the debate and terminology set out in the first part.

### *Studies that Test Hypothesis 1, the Universal Hypothesis*

*Betcherman, McMullen, Leckie and Caron's study of the Canadian workplace in transition*. Betcherman *et al*. (1994) report the results of a questionnaire survey of 714 establishments (a response rate of 42.4%) in four sectors of the Canadian economy – wood products (representing a resource industry), fabricated metal products (a traditional manufacturing industry), electrical and electronic products (a high value-added manufacturing industry), and selected business services (a dynamic service sector). Information was acquired on 12 HR practices, which include formal job design, formal employee-participation programmes,

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vacancies filled by internal promotion, variable pay and family-car benefits. The list also included a measure of what we have been referring to as the strategic integration of human resources, namely ''formal human-resource planning'' that is ''integrated into overall business planning'' (Betcherman *et al*. 1994, 50). Betcherman *et al*. find a strong correlation between many of the 12 practices and so use cluster analysis to identify three HR systems: traditional, which is characterized by the absence of any of the 12 practices, though there is a medium use of three practices, internal promotion, merit promotion and high wages; compensation, in which there is high use of 10 practices but no use of job design or participation programmes; participation, in which there is a high use of many of the practices and particularly job design and participation but a low use of high benefits, high wages, flexible scheduling and merit promotion. In some respects, the compensation cluster is even less traditional than is the participation cluster, though it lacks two of the core non-Taylorist practices associated with HIM. Betcherman *et al*. (1994, 66–67) assessed the relative performance of the three clusters by the reported improvements over a 5-year period (between 1988 and 1993) on 11 measures. The participative system is superior to the two other systems on two labour outcomes (lay-offs and accidents), while both it and the compensation cluster are superior to the traditional one on quits. The improvement in unit costs is the only other performance measure on which both clusters outperform the traditional. The other performance measures – labour productivity, customer complaints, product/service quality, sales, market share and profits – are not statistically different between the clusters. So, the high-involvement model as measured by the participation cluster is found to be superior to traditional management on some measures, most of which are most directly related to the HR.[6]

*Arthur's steel study in the USA*. Arthur's (1994) study concentrates on the US steel industry, the sample being 30 mini-mills. Using cluster analysis, he identified six types of HR systems (or what he calls in one paper (1992) industrial relations systems), defined by their differential use of 10 practices: pure type cost reducers, conflictors, inducers, collective bargainers, involvers and pure commitment maximizers (this is reported in depth in Arthur 1994). He then classified these in terms of the control–commitment dichotomy, the former – control strategy – being, in his terms, oriented towards reducing direct labour costs and compliance with specified rules and procedures, the latter – the commitment strategy – towards ''forging psychological links between organizational and employee goals'' (Arthur 1994, 672). Pure-cost reducers, conflictors and inducers are forms of control systems, and collective bargainers, involvers and pure-commitment maximizers are commitment-maximizing systems. Mills using the control model have significantly lower levels of productivity (measured by the labour hours to produce the finished product) and higher scrap rates (the number of tons of raw steel that had to be melted to produce 1 ton of finished product) than were the commitment maximizers. The statistical significance level is, however, only between 5 and 10%. Labour turnover is

twice as high in organizations using the control model. Moreover, the expected negative relationship between labour turnover and the performance indicators, labour productivity and scrap rate, is stronger in commitment HR systems than in control systems.

The study is limited by the sample size and the results may be specific to the steel industry, or manufacturing situations akin to it. Moreover, no attempt was made to establish the nature of the relationship between the commitment strategy and turnover when other factors are controlled for, and the control variables are limited where multivariate analysis is used. Arthur notes that, because of the small sample size, he was not able to test for the performance effects of the fit between business strategy and HR strategy. None the less, his equations linking productivity and scrap rates to HR systems include a measure of business strategy, which is based on classifying the mills by their competitive strategy, defined in terms of Porter's dichotomy of cost leadership versus differentiation. This variable is not significantly related to the performance measures, thus the commitment model has positive pay-offs regardless of the business context in which it is implanted. We are, however, unable to say whether this is the case for labour turnover. In addition, the results of Arthur's research (1992, 504) linking the two HR systems to business strategy show that, while only one plant with a cost-leadership business strategy used the commitment model, 40% of those with a strategy of differentiation did not have the commitment model. This suggests that, were a test of contingency theory conducted, at least in Porterian terms, it would not be supported, so verifying Arthur's universalistic conclusions. What we cannot be sure about, however, is whether the combination of a commitment HR system and a differentiated business strategy performs better than the use of such a system under a low-cost business strategy (since there is only one case). If it does, and the former combination also implies the use of TQM, then such a result would support Hypothesis 3, according to which high performance reflects the use of a total lean strategy and not just the HR system.

*Ichniowski, Shaw and Prennushi study of steel finishing lines in the USA*. This study used a variety of observational methods to collect data on a range of HR practices, technical aspects and performance measures for 36 steel production lines across 17 US companies. The articulated starting point is ''recent incentive contract theories'', which Ichniowski *et al*. (1997) view as arguing that ''complementarities often exist among a firm's employment practices'' and that the adoption of these clusters of practices ought to lead to superior organizational performance. The implication of this is that it is the internal fit between practices that is significant and that marginal changes in any one employment practice will have little benefit. Ichniowski *et al*. then couch their argument in terms of a specific ''complement of practices'', which is made up of high-involvement/performance practices, these being incentive compensation plans, extensive selection procedures, work teams, skills training and labour–management communication. They do not acknowledge the high-involvement language or literature, referring simply to articles from the economics of the firm (e.g. Milgrom and Roberts 1995); but they do conceive these practices as being

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innovative, as distinct from the 'traditional' steel system, which operated on strict work rule and narrow job responsibilities. They differentiated four types of HRM systems on the basis of the seven types of HR practices, though for some of these more than one practice was included in its measurement, e.g. teamworking was measured by whether there were formal work teams, whether there were problem-solving groups, and, if they existed, whether the majority of operators were involved in one or other of these.

The first cluster is the traditional system, in which none of the practices was present. The second is where some information sharing and communication is done, and teams have been introduced, but the extent of participation throughout the line is low; the third, is similar to the second, but the level of participation in the teams is high, and there is also extensive skills training; while the fourth system is characterized by the usage of all practices. The classes represent, in the terms of this paper, a progression from low- to high-involvement management. Ichniowski *et al*. acquired data on productivity on a monthly basis, and thus they were able to conduct econometric analysis on a panel data set of 2190 monthly observations of productivity.

The results show a hierarchical pattern in the productivity differentials of HRM systems, with the highest productivity corresponding to the fourth, high-involvement system, and further tests controlling for a range of technical and managerial factors confirmed that HIM is associated with high levels of productivity. Moreover, the contribution of individual practices in isolation of the others is small, relative to the effect of using them in conjunction with each other. Similar results are found for quality, measured by the percentage of total production that met the standards for designation as ''prime'' finished steel (prime-yield), as for productivity. Ichniowski *et al.* thus show that HIM can produce simultaneously high productivity and high quality, as those who associate it with lean production prophesy. They did not attempt to establish whether the workplaces that are using high-involvement practices are also using the production procedures associated with lean production or TQM, such as just-in-time stock control. Instead, they argue that greenfield sites are more likely to adopt the innovative HR and that there are non-pecuniary costs that inhibit traditionalists from adopting it, though these are not spelt out in any great detail. This research clearly supports the universalistic perspective on HIM but, especially given its positive effects on both productivity and quality, we cannot rule out the possibility that the results are consistent with the hypothesis that links performance to both HR and quality/production concepts (Hypothesis 3).

*Kalleberg, Knoke, Marsden and Spaeth's national study of organizations in the USA.* Within a national study of around 650 establishments in the USA, Kalleberg *et al*. (1996) collected data on what they treat (p. 115) as the ''four basic dimensions'' of a ''model of a 'high performance work organization'''. The main elements they included in their measure of high-performance systems are the existence of decentralized decision-making, investment in training, performance-based compensation and internal labour markets. Kalleberg *et al*. found that, on these four items, workplaces clustered into three

groups: the first they labelled high performing on the basis of their having all four elements of the model; the second, trainers that invested in training but had none of the other three; and the third, they call (somewhat misleadingly) low-performance work organizations, which neither invested in training nor had internal labour markets, but did have higher scores on both the compensation and decentralization scales than did the trainers, though not as high as the high-performing class.

Analysis was confined simply to assessing whether the mean scores were significantly different between the three groups on a range of performance measures. Performance was measured by asking the respondent to compare (on a four-point scale ranging from much better to worse) their organization's performance over the past 3 years with that of other organizations that do the same kind of work. The performance indicators used were quality of new products, services or programmes; development of new products, services or programmes; ability to attract essential employees; ability to retain essential employees; satisfaction of customers or clients; relations between management and other employees; relations between employees in general; marketing; growth in sales; profitablility; and market share. There may be problems of accuracy with some of these measures, especially those that require knowledge of the inside workings of competitors, such as the relations amongst employees. Kalleberg *et al*., none the less, show that the high-performing group scored highest on all dimensions of performance except customer satisfaction, where they are in fact second to the low-performance grouping. They conclude that the practices associated with high-performance management do in fact enhance organizational performance, thus in line with the universalistic hypothesis. Leaving aside questions about the adequacy of the performance measures, the main weakness of the study is that there are no controls included in the analysis of the relationship between high-performance practices and performance. Consequently, the results may have been consistent with hypotheses other than universalism, had other variables been included in the analysis.[7]

*Wood and de Menezes's analysis of UK government survey data.* Wood and de Menezes (1998) assessed the effects of a range of practices associated with HIM, using the 1990 British Workplace Employee Relations Survey and its sister survey, the Employers' Manpower and Skills Practice Survey. They both covered a representative sample of workplaces across the whole economy, private and public sector. Together, they form a rich data set that contains information on a range of high-involvement practices, including direct communication practices such as quality circles and teambriefing, skill formation methods such as training needs analysis, appraisal, no clocking-on or -off, monthly pay, cashless pay and information sharing. The study first assessed whether these tended to be used in conjunction with each other, that is whether they form a unity as the theory of high-involvement systems assumes. This was done using an appropriate latent variable model, which, since the practices were measured dichotomously, meant either a latent trait (where the underlying latent variable is continuous) or a latent

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class (the latent variable is categorical) model. A four-class latent class model fits the data, direct communication and information disclosure is the main source of discrimination at the bottom end of the scale and appraisal the main one at the top. There is an ordered progression from the first to the fourth; the first class can be characterized as low-involvement management (using present terminology, though in the paper it is referred to as ''low HCM'') and the fourth as HIM. The second and third (the two medium) groups are distinguishable first by the latter's higher probability of having all the high-involvement practices and, secondly, by its use of monthly and cashless pay, which can be taken as indicators of salaried status or white collarization, to use Koike's (1987) terminology.

The identification of the four classes of HIM suggests that there is some logic to the use of high-involvement practices. The researchers then went on to assess whether they are associated with different levels of performance and, more particularly, whether the high-involvement group consistently outperforms the others. The results show that this group does not perform better than all others on any of the eight performance criteria in the data set. Its level of employment growth and overall financial performance is, however, superior to that of the two medium-involvement classes but not greater than the low-involvement group. The medium-involvement management groups do, however, have significantly lower levels of absenteeism than did the HIM class. The medium-to-high (third) group has, on average, a significantly higher level of labour productivity than all other groups, while the rate of change of labour productivity, labour turnover and employee relations climate do not significantly vary between the four classes. The lack of variation on the employee relations climate reflects the fact that the bulk of the variation to be explained is at the top end of the measures, between the scores 4 and 5 on a five-point scale. The results are thus mixed, showing that practicising HIM in its total form does have some effects on some outcome variables but that these effects are not unique to those organizations that do this.

Caution is necessary about concluding that HIM does not work on the strength of this analysis. First, the finding that the two extremes, high- and low-involvement classes, do better than the two medium classes on the overall financial performance measure and employment growth may support the principle of internal fit, assuming that the low category represents a coherent Taylorist or authoritarian management. Second, the data sets do not contain data on contingent factors, so if contingency theory were right, and all the high performers have successfully fitted their HRM to their context, the results could reflect the fact that some of the high performers are operating in a stable environment. Finally, the coverage of high-involvement practices was not complete, the most notable omissions involving elements of job design – teamworking, functional flexibility and conscious job design to enrich jobs.

*Patterson et al.'s study of single-site companies in UK manufacturing.* A study by Patterson *et al*. (1997) has been widely reported in the UK as demonstrating the value of HRM (see, for example, Patterson *et al*. 1997, Preface by M. Emmott, vii). In

order to get round the problem that better financial performance data are publicly available at the company level but collecting data on HR practices is likely to be more reliable at the establishment level, the researchers concentrated on manufacturing firms with single sites. Sixty-seven manufacturing companies were included in the study of HR practices and performance. Two main performance indicators were used: the rate of change in profitability and in productivity. The HR practices of the firm were measured by three groups of variables: (a) the comprehensiveness of the selection, induction, training and appraisal systems; (b) the extent of skill flexibility, job responsibility, job variety and formal teamworking; and (c) the use of quality improvement teams, direct communication methods, harmonized terms and conditions, incentive compensation systems, and high relative pay. Factor analysis revealed that the first and second sets of variables form two independent factors (this being similar to Huselid's (1995) study, which is reviewed later). The researchers initially treated the first group as measuring the firm's concern for what they call ''acquisition and development of employee skills'' (hereafter skill), the second as a concern for ''job design'' (Patterson *et al*. 1997, 15). The practices in the third group are treated as independent (though we are not told the extent to which any of them co-vary with each other or with the skill or job design factors). Both factors are significantly related to each measure of performance, while none of the independent practices is. Nineteen per cent of the variability in profitability change is accounted for by HR practices, the bulk of which is the combination of the skill and job design factors, while 18% of the productivity change is predicted by these.

Patterson *et al*. go one stage further than other writers and attempt to assess what they call other managerial practices to see whether they affect performance. They concentrate on four such practices, which they term strategy, emphasis on quality, use of advanced manufacturing technology and research and development (R&D) investment. The first of these, which fits uneasily under the umbrella of a managerial practice, was measured in Porterian terms by whether the firm adopts a cost leadership or a differentiation business strategy. We are not, however, told what the expected relationship is between this variable and performance. As it happens, neither it, nor the quality or technology variables, is significantly related to either performance measure. R&D investment, in contrast, explains 6% of the variation in productivity change and 8% in that of profitability change. Patterson *et al*. thus highlight that ''HRM practices are far more powerful predictors of change in company performance'' than other areas of management (Patterson *et al*. 1997, 19). Given the centrality of skill acquisition and job design to HIM, the research lends support to the universalistic theory – though the sample is limited to firms in one area of the economy and are of one type, publicly quoted single-site companies. Patterson *et al*. do not, however, attempt to test the full HIM theory as they could have done through seeing whether there is an interaction effect between the two dimensions. There is also the problem that other dimensions of HIM – harmonization, quality-improvement teams and direct communication – are not linked to the skill

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or job design practices nor do they affect either performance indicator. Yet, insofar as incentive compensation systems are neither connected to the other practices nor affecting performance, this offers support for high-involvement rather than high-performance concepts. Moreover, the lack of a strong performance effect from quality practices offers little support for the theory underlying the second conception of high performance, though the researchers do not assess whether there is any interaction between quality and their HR factors.

### *Studies that Test Hypotheses 1 and 2, Universalism versus Contingency*

*Delery and Doty's study of US banks.* Delery and Doty (1996) differentiate two ideal types of employment systems, an internal system and a market-type system. The first type approximates to the high-involvement model, as it includes internal recruitment, extensive formal training, feedback for development purposes, performance measured by behaviour-oriented measures, few incentive systems, employment security, and participation in decisions (although jobs are very tightly defined in their characterization). The second, the market type, is contrasted with the internal type above all else by its reliance on the external labour market for recruitment, but it has the key non-Taylorist practice of loose job definitions. It also includes profit sharing and appraisals geared to assessing results in quantifiable terms, which, as we shall see, are included in Huselid's high-performance model. In a study of 1050 US banks, Delery and Doty concentrated on the management of one occupation, the loan officer. They acquired information on the HR practices and business strategy from the bank's senior HR manager and further ''general information'' (Delery and Doty 1996, 814) about the bank and its strategy from the bank's president.

Delery and Doty tested the universal and contingency thesis firstly by examining the effects of individual practices on performance. The finding is that results-oriented appraisal, profit sharing and employment security have positive effects on the return on average assets, regardless of the strategy, while two of these, results-oriented appraisal and profit sharing, have an effect on the return on equity; the effect of the results-oriented appraisal on both measures of performance is subsequently found to vary, depending on the strategy, though it still has a pay-off in all circumstances. In addition, the effects of internal career opportunities and participation/voice are contingent on the strategy of the organization, though participation only affected the return on average assets.

In order to test the contingency theory, Delery and Doty relied on Miles and Snows' (1984) trichotomy between prospectors, analysers and defenders to categorize ideal type strategies and measured these by 13 items, including the rate of product innovation, technological progress, active marketing and a proactive management style. The market-type employment system was deemed appropriate to the prospector strategy and the internal type to the defender. In this way, the internal system is seen more as a conservative rather than innovative style, which contrasts with most authors, and particularly those who associate HIM with lean production and continuous

improvement. The employment system deemed appropriate for the analysers is labelled the middle-of-the road approach. The ideal types are scored first by specifying the middle-of-the-road strategy as the mean value of the seven HR practices, then the score for the market-system was set at plus one standard deviation from the mean of each variable and that for the internal system at minus one standard deviation.

Delery and Doty assess universalism by measuring the extent to which the firm's employment practices are similar to each of the ideal types and assessing the association between this measure and performance. (It is not specified whether the ideal types are simply the two extremes of the market-based and internal strategies or included the middle-of-the-road strategy.) It is found that the more closely an organization's employment system resembles the market-based type, the better its return on average assets and equity. In contrast, the greater the proximity to the internal ideal type, the lower the performance on these two measures.

Contingency theory is assessed in three ways. First, Delery and Doty analyse whether organizations that conform to one of the three ideal type are more effective relative to those (hybrids) banks that do not conform to one of these (in their terms this is the ideal-type fit hypothesis). In our terms, this assesses the importance of internal fit, assuming that the ideal-types posited are the internally fitted sets of practices and exhaust the possible internally fitted sets. Secondly, they examine whether those organizations that have the appropriate ideal type for their strategy outperform others (in their language, the contingency ideal-types fit hypothesis). Thirdly, they assess the extent to which organizations have the appropriate degree of each HR practice for their particular location on the prospector–defender continuum (the contingency hybrid types fit). The second and third tests involve strategic fit. None of the three tests supports contingency theory for the return on either average assets or equity.

Delery and Doty are cautious about inferring that the market ideal type is absolutely superior since, when they put the individual HR practices together in regressions on performance, they collectively explain more of the variance in performance than did the market-type ideal system. They conclude that this means that the market-type system is best treated as the starting point for constructing ideal types rather than as a model of best practice. Yet, the superior explanatory power of the equation containing the individual practices may simply reflect the fact that the ideal type is measured by a fixed point from the mean of the seven variables. Thus, if the market-based system is treated as a variable and not as an absolute concept, the research seems to suggest it is superior. The problem, though, is how the concept relates to the high-involvement or performance terminology, since it contains the non-Taylorist job design but relies on an external labour market and is characterized by low degrees of training and participation. Furthermore, there is no attempt to assess whether the practices co-vary or the clusters form natural clusters.

*Youndt, Snell, Dean and Lepak's study of US metal-working plants.* Youndt *et al*. (1996) set out to test the universal versus contingency theory. They start from the

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premise, however, that they are not necessarily mutually exclusive, since it is possible that there may be a best-practice model but that its impact is ''further enhanced when practices are matched with the competitive requirements inherent in a firm's strategic posture'', an argument that is consistent with Hypothesis 4 (Youndt *et al*. 1996, 853). They treat what has been termed here the high-involvement strategy as the contender for best practice, preferring the label human capital-enhancing HR system and characterize it as consisting of two types of practices: those aimed at enhancing the skill base of employees and those concerned to promote empowerment, problem-solving and teamwork. They focus on manufacturing strategy as the contingent factor since this has a ''more direct relationship to what managers and first-line employees do daily'' (Youndt *et al*. 1996, 861). This is, none the less, connected to the classifications of competitive or business strategies that have derived from Porter, as they identify theoretically three main types of manufacturing strategy – cost, quality and flexibility. Youndt *et al*. associate a human-capital-enhancement strategy with both the quality and flexibility strategies. They ally the cost strategy to what they call an administrative HR system, based on notions of command and control (Youndt *et al*. 1996, 843), which involves the use of selection oriented towards immediate needs, training procedures that are geared to physical skills and general information, results-based appraisal, and compensation systems based on individual incentives and treating manual workers as hourly paid. The issue Youndt *et al*. test is whether any impact that the human-capital-enhancement system has on performance is a main effect or, rather, is a function of the performance enhancement obtained when it is linked to a quality manufacturing strategy. In addition, they test whether those firms with a cost strategy that have an administrative HR system do perform better than those without it.

The research was conducted in 97 manufacturing plants in the metal-working industry, drawn from a sample of 512 across the USA. Initially, a mail questionnaire was sent to the general manager of each plant. This dealt with the HR system and plant performance. A second questionnaire, concentrating on the HR practices, was sent to managers in four functional areas, operational, quality, production and human resources. Finally, 18 months later, another questionnaire was sent to all those who had responded in the first round; this asked about the manufacturing strategy and current performance. Cases were only included in the final sample if at least two managers had responded to the questionnaires. Mean values across each respondent per plant were used in the analysis.

Performance was measured by a range of indicators, which factor-analysed into three factors: machine efficiency (measures of this included equipment utilization and scrap minimization), customer alignment (e.g. product quality, on-time delivery), and what Youndt *et al*. call employee productivity (which included employee morale as well as employee productivity). The measure of performance used in the analysis was based on an average of the performance scores from the two questionnaires. Thirty-one items were used to measure manufacturing strategy, and the factor analysis revealed four stable factors: the quality and cost items form one factor,

but the flexibility items loaded on two, the first, labelled delivery flexibility by Youndt *et al*., included items such as releasing new products and making deliveries on time, and the second, termed scope flexibility, contained items relating to the adjustment of product mix and the handling of non-standard items. The HR practices were grouped into two indexes. The first measured the human-capital-enhancing HR system, and consisted of selective staffing, selection for technical and problem-solving skills, developmental and behaviour-based performance appraisal, external equity, group incentives, skill-based pay, and salaried compensation. The second measured the administrative system by the following items: selection for manual and physical skills, policies and procedures training, results-based performance appraisal, individual equity, individual incentives and hourly paid status.

The results support the contingency argument. The human-capital-enhancing HR system had a strong main effect on employee productivity and a weaker, but still significant, effect on customer alignment and equipment utilization. When, however, the interaction between it and the quality manufacturing strategy is included in the analysis, this is no longer the case for all performance measures, but the interaction term is significant, thus the main effects are predominately a reflection of the external fit between the human-capital-enhancing HR system and the quality strategy. Moreover, the interaction between a cost strategy and the administrative HR system significantly predicts equipment efficiency and delivery-flexible strategy, and the administrative HR system is related to customer alignment. The first result supports the contingency argument of Youndt *et al*., but the second is counter to what they expect, as they hypothesize that flexibility strategies should be linked to a human-capital-enhancing HR system. They conclude that ''the moderation results provide strong evidence that manufacturing strategy influences the HR–performance relationship'' (Youndt *et al*. 1996, 855). This is largely based on the fact that the interaction between quality strategy and human-capital-enhancing system is related to all the performance measures. Thus, to Youndt *et al*., the research supports a contingency theory of HIM, but the lack of strong effects for the other interactions means that it does not support wholesale a contingency theory of HR systems. This may, though, reflect conceptual and measurement problems, particularly surrounding the notion of an administrative HR system, and perhaps the two flexibility manufacturing strategies. Taken at face value, the results in the terms of this paper are supportive of the third hypothesis, that combining high-involvement and quality management may be universally successful.

*Becker and Huselid's company-level surveys in the USA.* Becker and Huselid, working at the firm level, base their analysis on a measure of high-performance management developed by Huselid, which entails a set of practices including: information sharing; formal job analysis; internal recruitment; attitude surveys; quality of work life measures or quality circles; incentive, profit-sharing and gain-sharing schemes; grievance procedures; employment tests; performance appraisal; basing pay on performance appraisal; and merit (as opposed to seniority) as a

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promotion criterion. Two other measures are included in the set: (1) the average number of hours of training received by a typical employee over the last 12 months (this would appear to mean formal off-the-job training, though this is not specified); and (b) the number of qualified applicants on average for the five positions that the firm hires most frequently. The precise nature and coherence of Huselid's list of practices is questionable, since it includes a number of items that could legitimately be associated with either traditional industrial relations (grievance procedures) or professional personnel management (formal job analysis and selection tests). He did not simply ask whether the organization uses the practice, but asked for the proportion of the workforce to whom the usage is extended, e.g. in the case of quality circles, the percentage who participate in them. This procedure is required because of the company level at which Huselid is operating. As it results in a set of 13 continuous variables, he is able to use factor analysis, the best-known latent variable model, to test whether they tend to co-vary.

In Huselid's first study (1995), a questionnaire constructed from Compact Disclosure was mailed to a sample of 3452 US publicly owned companies with over 100 employees; 968 firms (28%) responded. The respondent was the senior HR professional. First, the factor analysis reveals that the 13 items fall into two factors – Huselid labels the first ''motivational'' and the second ''employee skills and organizational structures'', since they appear to him to be practices that affect the skills of people and the way they are able to do their jobs. The extent of the coherence of either list, and hence the precise meaning of each of the two factors, is far from clear. The incentive, profit-sharing and gain-sharing scheme measure falls in the skills and organization factor, while the pay linked to appraisal falls in the other.

Secondly, there is found to be a link between high-performance management and three performance measures. Labour turnover is found to be negatively related to the skills and organization factor but not the motivation factor. The explanation given for the lack of association in this case is weak, as we are told (Huselid 1995, 656) that ''the use of incentive compensation systems may actually encourage employees who are performing poorly to leave a firm''. The incentive system here presumably refers to the linking of pay to appraisal, but it begs the question of why the incentive pay measure in the first, skill and organization, factor does not have the same effect. Productivity, measured by sales per employee, in contrast, is related to the employee motivation rather than the skill and organizational factor. Corporate financial performance, measured by Tobin's *q*, a measure of value added that is calculated by dividing the market value of the firm by the replacement cost of its assets, is significantly related to both factors, while that measured by the gross rate of return on assets is only related to the skills and organization factor. Thirdly, it is shown that the effect of high-performance practices on financial performance is mediated by their effect on both labour turnover and productivity. In other words, a significant proportion of the impact on high-performance practices on financial performance is attributable to these more direct HR outcomes.

Finally, tests for the importance of strategic fit were conducted. It was measured in two ways: (a) using Porter's categories of the extent to which the firm is using a differentiation or focus strategy relative to a cost-minimization one; and (b) behaviourally by asking the firm about the degree of emphasis it places on ''aligning its human resource management practices and competitive strategy''. The results are reported for only the financial performance measures. They reveal only one interaction effect: the product of the behavioural strategy measure and the employee motivation factor is significantly related to the return on assets measure. A test of the interaction effect between the two high-performance factors on the financial measures is negative.

In drawing his conclusions from the results, Huselid (1995, 667) skates over the unevenness of the results – ''my results were consistent across diverse measures of financial performance'' – and argues that high-performance practices appear to have a universal effect. The one result supporting some contingent effect is left aside. Huselid also neglects the significance of the differences between the results for the two factors, in so doing almost denying the significance of the factor analysis. He, in fact, does not differentiate between them when making his overall conclusion that ''a one standard-deviation increase in such (high-performance) practices is associated with a relative 7.05 per cent decrease in turnover and, on a per employee basis, $27,044 more in sales and £18, 641 and $3,814 more in market value and profits, respectively''.

Significantly, Huselid ends up combining the two factors in his later work (Huselid and Becker 1996, 413) on the assumption that, because they have the same effects on performance, they are identical. In one paper (Becker *et al.* 1997, 42), this combined index is treated as a measure of what he calls sophisticated HR architecture, even though it appears to be based on a set of practices and, as we have seen, was viewed in this way when first introduced. This measure is consistently shown to be related to the key performance measures used in Becker and Huselid's studies.

Becker *et al*. (1997) observe in some of their studies that the relationship between high-performance management and financial performance of the firm – measured by market value per employee – is non-linear. They argue that this is indicative of the ''linkage between best practices and strategic alignments'', that is, that the high-performance practices are ''directly aligned with business priorities and operating initiatives [that are] most likely to create economic value'' (Becker *et al*. 1997, 42). This implies that HIM is the main determinant but that, at higher levels of it, an interaction effect comes into play, although the effect of strategic integration might be treated as independent of this. This is never directly tested. This non-linear relationship could simply be a reflection of the synergistic effect of the practices, and indeed an exponential relationship between a measure based on a coherent bundle of practices is precisely what we would expect.

In their latest work, Becker and Huselid (1998b, 2) do, however, tackle head-on the issue of the strategic fit of the high-performance system and test their claim that it is the ''complementarities between the HRM system and other organizational

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policies'' that enable the high-performance system to have a strategic impact, that is, regardless of the level of high-performance management. The sampling frame consisted of all US public companies with more than 100 employees and sales of $5 million or more, the total being 3840. Seven hundred and two firms responded to a mail survey, a response rate of 18%. We are not told who within the firm completed the questionnaire, but the implication is that it was a single person. Missing data reduced the sample to 533. The HRM system was measured by a similar set of practices to the earlier studies, though the number was increased to 21.

Organizational fit was measured not by the interaction of the HRM system with measures of other organizational policies, as in Lawler *et al.*'s studies discussed below, but rather by a direct measure of what Becker and Huselid (1998b, 6) call implementation alignment. It aims to measure the extent to which the organization is oriented towards treating the HR as a strategic asset and supporting high-performance management (organizational fit) as well as strategic fit. In practice, Becker and Huselid focus on: (a) the functional proficiency of the HR system; (b) the fit of the HR strategy to the larger corporate strategy of the firm (what Becker and Huselid call adaptability); and (c) ''the role of the senior management in recognizing the intrinsic value of organizational resources'' (Becker and Huselid 1998b, 6) – in their terms, ''strategic insight''. They developed a measure of implementation alignment based on multiple measures of each of these. Functional proficiency was measured by questions about how effectively the organization pursues a particular high-performance principle, e.g. ''to what extent does your firm effectively hire qualified employees?'' or ''to what extent does your firm's performance management and appraisal system effectively reward employee behaviours that are consistent with the firm's competitive strategy?'' Adaptability (strategic fit) was measured by two main questions: ''to what extent does your firm make an explicit effort to align business and HR strategies'' and ''to what extent is the HR department involved in the firm's strategic planning process''. The measures of strategic insight include ''to what extent is HR (i.e. the people side of the business) seen primarily by senior management as a source of value creation versus cost to be minimized throughout the organization?'' and ''to what extent does your firm have a clear strategic mission that is well communicated and understood at every level throughout the firm?'' The items load on one factor ($\alpha$ = 0.90) and thus implementation alignment is the mean of the standardized values for 16 questions. Though the proficiency measures concentrate on how effective the organization is at high-performance management, and the measures of the HR system are concerned with the extent to which high-performance practices are used, there may have been some overlap between the two types of measures, at least in the minds of the respondents. No assessment of whether they are independent is reported. The scores on the overall implementation alignment index are correlated with the HR system measure (0.54).

Becker and Huselid (1998b, 8) used cluster analysis to identify firms according to both their HR system and their implementation alignment. Four clusters are identified: the two extremes of low on

both dimensions (termed personnel cluster, i.e. non-strategic HRM) and high on both dimensions (the high-performance cluster); a low on HR systems and medium on alignment (termed alignment); and an above average on HR systems and well below average on alignment (called the compensation cluster, because the score on HR systems reflects the high usage of high-performance compensation elements). In a regression on the market value of the firm, when the two continuous measures of HR system and implementation alignment are included, both are significant, though the impact of the former is greater. The results remain the same when the interaction between the two is included, this being not significant. This confirms that high-performance management systems have an effect independently of whether they are internally fitted to the organization. It is, none the less, the case in this study that, as organizations develop these systems, they tend to become more aligned (which may be an artefact of the measurement system in this case, and may bias the equations that include the interaction term). An analysis comparing the effects of cluster membership allows for this, and reveals that the high-performance cluster significantly outperforms all others. The compensation and alignment clusters also perform significantly better than the personnel cluster, as one would expect from the regression results using the continuous measures. The compensation measure has stronger effects on performance than does the alignment cluster. The ranking of the effect that each cluster has on performance confirms that high-performance management is crucial, though it is not, to use Becker and Huselid's (1998b, 13) words, ''the only piece in the puzzle''. There is additional leverage from high-performance management if it is organizationally aligned. Moreover, those organizations that are organizationally aligned but do not practice high-performance management will get some performance benefits from this. Those that are highly aligned but are not practising high-performance management will, however, perform no better relative to those that strongly practice it and are weakly aligned, as one would expect from the analysis of the interaction effects. In addition, part of the poorer performance associated with membership of the compensation cluster is derived from its lack of complete alignment. Becker and Huselid (1998b, 14) tentatively conclude that the compensation cluster represents ''an evolution in the firm's capability to compete based on their human capital'', perhaps because strengthening the pay–performance link is the easiest initial change an organization can make.[8]

Overall Huselid and Becker's research, therefore, supports a universalistic thesis of high-performance management, rather than a contingency theory that, in this research, would have meant that implementation alignment was the dominant predictor of performance. None the less, it shows that there are additional benefits if the high-performance system is organizationally and strategically fitted; organizational fit complements the HRM system (Becker and Huselid 1998b, 15), rather than moderates its effects on performance. As such, there is no support for Hypothesis 4.

Regardless of whether the relationship between high-performance management and performance is linear or non-linear (or whether its power is affected by

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organizational fit), it is difficult to square such a strong relationship with the authors' overall emphasis on the importance of both inimitability and contingent adaptation. If there is such a need to develop unique configurations of practices (or architectures), we would not expect to find a general association between a set of practices and performance (though in Becker and Huselid's terms we would expect this to be the case for high-performance principles). Indeed, this could only be the case if the set were a best-practice model and all organizations that follow it design their practices so they fit both with high-performance principles and with their strategic aspirations. There does, however, appear to be a discrepancy between Becker and Huselid's research results and their underlying theoretical arguments.

*Hoque's study of UK hotels.* Hoque (1999) researched UK hotels along very similar lines to his earlier work with Guest. Through a questionnaire completed by a single managerial respondent from a sample of 209 hotels with 25 or more employees, he collected data on the use of 22 high-involvement (called HRM by Hoque) practices and a range of outcome variables. The majority of these practices corresponded to those in his earlier greenfield-site study with Guest (Guest and Hoque 1994), which is discussed below and itself drew on those used by Wood and Albanese (1995). The outcome measures were of two types: ''human resource outcomes'', which all pertained to lower grade staff – the commitment, job satisfaction, flexibility of staff, job mobility, quality of work and quality of staff – and ''performance outcomes'', namely labour productivity, quality and financial performance, which were all judged relative to the perceived average in the hotel industry. Information was also gained on the business strategy of the hotels so that they could be classified in terms of whether their competitive strategy was, in Porter's terms, based on cost reduction/price competition or quality enhancement. A third ''other'' category of those hotels with an ambiguous strategy was also included.

Hoque tests the contingency argument by dividing the sample into three groups on the basis of the hotel's business strategy and then examining the relationship between HIM (in his terms HRM) and performance for each subset, rather than by including the cross-product of HIM and business strategy or dummies for each type of strategy in a single equation. Controlling for union presence, size, UK ownership, price of a standard room, and the age of the hotel, he finds that, amongst the quality enhancers, commitment, job satisfaction, quality of work, quality of service and financial performance, as perceived by the respondent, are all strongly related to the use of HRM practices (measured as a simple aggregation of the 22 practices). Both job mobility and the flexibility of staff are related to HIM, though the relationship was not very strong in either case. The quality of staff and labour productivity are not related to HIM. In contrast, amongst the cost minimizers, HIM affects only commitment and job satisfaction of the HR outcomes and has no effect on the three performance variables. Within the ambiguous (termed other) group, HIM is related to the same outcomes as in the subsample of quality

enhancers. It is, however, also related to all other variables, the quality of staff and labour productivity. The strength of the relationship between HIM and staff flexibility is stronger for the 'other' category than it is for the quality enhancers, though that between HIM and quality of service is considerably weaker within the former than the latter. Hoque is inclined to treat the ''other'' category as similar to the quality enhancers, arguing that from their effects on outcomes their emphasis is on quality and not cost minimization.

Hoque (1999, 437) concludes that his results support the contingency theory. Having done this, he then addresses the question of whether it is indeed the case that organizations that both have a quality enhancement strategy and practise HIM outperform all others in the sample. He concludes that they do, on the basis that, across the range of performance measures, they perform better than any other single type (based on classifying the firms by their business strategy and degree (low, medium, or high) of HIM). For example, they outperform others on five of the other eight categories on commitment and job satisfaction, and they perform significantly better than all categories of hotels on at least one of the three measures of performance, but it should be noted that the high-HIM ''other'' category performs as well as the high-HIM hotels on all indicators except for the quality of work (which, if they truly are aspiring ''lean producers'', may reflect the greater standards they have). This conclusion, rather than confirming the contingency theory, supports Hypothesis 3, which is that the high (quality and involvement) route should result in high performance in all circumstances. Moreover, the effect of HIM on commitment and job satisfaction is universal; there is an effect in all three types of hotels, though the strength of the relationship is slightly weaker in the cost reducers than in the other two categories.

In Hoque's terms, it is the effects of the commitment and satisfaction generated by HIM that are seemingly not universal, since in cost-minimizing contexts it does not seem to be having much effect on organizational performance or, to be more accurate, the commitment and job satisfaction it generates does not seem to translate into organizational performance. There is no attempt to assess the link between these two HR outcomes and the performance measures, but perhaps the reason that commitment and satisfaction have no effect is that total quality systems are not in place and/or individual discretion is low. While the implication of the results for the HIM hotels is that the quality enhancers are getting better financial performance, not through superior productivity but through their better quality (price having been controlled for), the ''others'' are getting it through a combination of labour productivity and quality.

It is safe to conclude that a strategy based on cost reduction or price competition leads to suboptimal performance within the industry, as Hoque concludes (1999, 439), but it may be that the other category is superior, as might be the case if Hypothesis 3 is correct. It is not entirely clear what is included in the category – it could include those with an ambiguous strategy or those that are genuinely oriented towards the simultaneous pursuit of quality and cost minimization, or even those that have no

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real strategy (*ad hocism*). Hoque's starting point seems to be Porter's association of hybrid strategies with prevarication and, hence, ultimate failure and, on finding that the ''others'' are doing as well as the quality enhancers, he treats them as equivalent by putting primacy on quality. This may be misleading for, following the lean production notion, a strategy that combines quality and cost minimization could be interpreted as the most sophisticated. Given that the strength of the relationship between HIM and productivity in the other category is greater than that between HIM and quality, they may be giving more or at least as much weight to costs as to quality. The results, then, may well be consistent with the argument that lean production is universally successful, that is, an argument that places emphasis on the importance of methods aimed at the simultaneous pursuit of quality and cost. The superior financial performance of the ''others'' and the quality enhancers does not appear to rest on their being able to charge a price premium, since price is controlled for in the analysis. We would need more information on the extent to which the HIM practices are being used in association with other practices. If they are not, the results could still be interpreted as supporting an argument that combines contingency and lean production notions: HIM is most successful in those firms that treat leanness as their strategy, while it can successfully achieve the objectives of those managers that emphasize quality enhancement, and reduce the 'alienation' of those working under cost-minimization regimes without this translating to higher performance, as one would expect if there were little attempt to design jobs with discretion.

### *Studies that Test Hypothesis 3, the Combined Effect of High-involvement Management and Total Quality Management*

*Lawler et al.'s surveys of high-performance practices.* Lawler *et al.* (1995), like Huselid, conducted a company-level survey. The sample frame was the Fortune 1000 largest manufacturing and service companies, and 279 usable responses were received (a response rate of 28% as 985 companies received questionnaires). Given their conception of high-performance management as the combination of high-involvement and TQM, they acquired information on both employee involvement (EI) and total quality practices. Total quality practices were grouped into two main categories: core and production oriented. Core practices were quality-improvement teams, quality councils, cross-functional planning, process re-engineering, work simplification, customer satisfaction monitoring, direct employee exposure to customers; while production-oriented practices consisted of self-inspection, statistical control method used by front-line employees, just-in-time deliveries, and work or manufacturing cells. Information was collected for four types of EI practices, as in Huselid's studies, by asking for the percentage of employees covered by a practice. The first type, information sharing, asked for the percentage of employees who received information on each of such items as the corporate operating results, business plans/goals, and competitors' performance; the second type, training and skills, asked about the extent of training in areas such as group decision-making/problem-solving

skills, leadership skills, teambuilding skills and cross-training; the third referred to reward practices associated with EI and included the whole range of variable systems such as knowledge/skilled based pay, profit-sharing, individual incentives, work-group/team incentives, as well as all-salaried pay systems, and employment security and open pay information; finally, the fourth, labelled power sharing, included suggestion system, survey feedback, job redesign, quality circles, employee participation groups, union-management QWL committees, minibusiness units, self-managing work teams and employees policy/strategy committees.

Lawler *et al*. used simple pairwise correlations to examine the relationship between the individual TQM measures and the four indices of EI, as well as an overall index based on the average scores across the indices. The correlations on a high proportion of all pairs involving the information-sharing skills, and power-sharing indices are all significantly above zero, though the rewards index is only related to one of the TQM practices, self-inspection, and it is only weakly (0.20) correlated with it. The correlations on the three other indices range from a maximum of 0.47 to 0.08. Lawler *et al*. (1995, 58) conclude that ''most companies have both EI and TQM initiatives'' and that they ''are most frequently co-ordinated or managed as one integrated program''. The size of the correlations between the use of particular TQM practices and the EI indices is, however, not consistently high enough to suggest that the dominant pattern is a fully integrated TQM and EI. Nor is the frequency of use of many of them: while most firms use at least some of the practices, the typical firm uses most of the practices with between only 1 and 20% of its employees. In the absence of multivariate analysis, it is not in fact possible to conclude that TQM and EI practices tend to coexist.[9]

Lawler *et al*.'s analysis of the effects of TQM and EI on performance was also based on correlational analysis. Lawler *et al*. (1995, 87–92) analyse the effects of EI and TQM on measures of economic and financial performance, obtained from Compact Disclosure, for companies in their sample. The measures were total factor productivity, sales per employee, return on sales, return on assets, return on investment and total return to investors. This time, they conducted multiple regression analysis of the effects of EI and TQM (again it is not clear how these are measured) controlling for industrial sector and capital intensity. We are told that these EI and TQM variables are most strongly related to return on equity and return on assets, while all of the other outcome measures are significantly, but weakly, related to their usage, with the exception of the total return to investors. The percentage of corporate performance variance that is accounted for by EI and TQM practices is, though, relatively small; none the less, because of the wide range of performance, a small movement in these practices could translate into a relatively large effect on performance. A one standard deviation increase in EI and TQM practices would, Lawler *et al*. (1995, 92) estimate, mean that an additional 30% of employees within a company would be covered by them, and this would have quite significant effects on five of the six performance indicators.

In addition, Lawler *et al*. examine whether the extent of the use of the various

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practices is related to management's perceptions of the impact of EI and TQM on performance. The majority of the EI practices are found to be related to three measures of performance – an index of direct performance outcomes (made up of productivity, customer satisfaction, quality and speed of response); profitability and competitiveness; employee satisfaction and quality of working life – and a measure of management's satisfaction with EI overall. The correlations again are not consistently strong, ranging from 0.13 to 0.31. None of the power-sharing or reward practices, bar employment security, is related to employee satisfaction, though the overall power-sharing index is. Similarly the majority of TQM practices are related to the perceived impact of TQM on direct performance outcomes, profitability and competitiveness, and satisfaction with TQM. The majority of the practices are, however, not significantly related to employee satisfaction, the exceptions all being core, rather than production-oriented, practices. Further analysis shows that some of the effect of EI is a reflection of the TQM processes that are being used in conjunction with them. The skills, power-sharing and reward dimensions of EI have no significant impact on the performance measures (with the exception of skills, which impacts on profitability and competitiveness) in non-TQM companies (though it is unclear how this is measured). Similarly, in the case of the production-oriented practices, these have no impact without EI (again it is not clear how this is measured). The impact of the core practices is considerably enhanced when accompanied by EI. These results, Lawler *et al*. (1995, 85) conclude, show the intertwined nature of TQM and EI.

In 1996, Lawler *et al*. replicated their 1993 survey, using the same conceptions and measures of EI and TQM, though they also added what they see as a third type of practice concerned with process re-engineering. The sample frame was again the Fortune 1000, but this time the response rate was lower (22%) yielding 212 usable data points. The results, which are reported in Lawler *et al*. (1998), are almost the same as those for the 1993 study. First the pattern of simple pairwise correlations between the TQM measures and the four indices of EI and the overall summary index are almost identical. The main difference is that the rewards index, which was only correlated with self-inspection in 1993, is highly related to work simplification in 1996, and weakly related to cross-functional planning. The power-sharing index in 1993 is strongly related to the use of quality councils but, by 1996, it is only weakly related. Again, the size of the correlations is not consistently high enough to conclude that TQM and EI coexist, though a majority (26 out of 49) of the significant correlations (in 1993 or 1996) had increased with three remaining the same. The use of EI and to a lesser extent TQM practices has increased slightly, but the typical company still uses the practices to a very limited extent.

For the 1996 data, Lawler *et al*. (1998, 142–153) do not report the results of a regression analysis on the effects of the combined use of EI and TQM on financial performance as they did in 1995. It is shown to be the case, however, that the high users of both EI and TQM do in fact perform better on return on sales, return on assets, return on investment and return on equity. A regression analysis of EI usage on its own shows that it is related to sales

per employee and return on assets, as it was in 1993. Additionally, it is related to return on investment. However, it is not, as was the case in 1993, related to return on sales and return on equity. Total quality management usage, when assesssed in isolation of EI, is related to return on sales, return on assets and return on equity, which was not the case for 1993. The strength of the overall conclusion of the studies, that financial performance is affected by the use of EI and TQM, is enhanced by time-lagged analysis, which shows that the use of practices in 1993 is related to financial performance in 1996, though we are not given information to show that financial performance in 1993 was unrelated to the use of practices in 1996.

The results of the effects of TQM and EI on the perceptual measures of performance are again similar to those for 1993. Employee involvement practices are related to all these measures of performance, although again few of the power-sharing or reward practices are correlated with these. Total quality management practices remain correlated with the perceived TQM outcomes, but they have little impact on employee satisfaction, though in 1993 most of the core practices did. There is no attempt to assess the impact of EI practices controlling for the impact of the effect of TQM or vice versa as there was in 1993. None the less, Lawler *et al.* present evidence that shows that the impact of TQM programmes will be greater if they include EI practices.

The additional data on the re-engineering practices, which include process simplification, creation of cross-functional teams, major information system redesign and such cost reduction methods as doing the same work with less supervision, were analysed in a similar way to the EI and TQM data. Their usage is shown to be correlated with EI and TQM practices. The exceptions are the lack of association between any of them and the reward practices and also the cost-reduction methods and information sharing (Lawler *et al*. 1998, 72–73). The use of re-engineering practices also helps both EI and TQM to be more effective when measured by the perceptual measures, but does not contribute to their impact on perceived employee satisfaction (Lawler *et al*. 1998, 130–131), though no such tests are conducted that use the non-perceptual financial measures. A greater use of re-engineering, though, is shown to impact positively on all the financial returns measures except the sales per employee (Lawler *et al*. 1998, 148).

So, overall, Lawler's research, within the limits of its methodology, offers some support for Hypothesis 3. Lawler *et al*. (1998, 138–140) none the less introduce into the 1996 survey some questions on the nature of the organization's change strategy and find that this does moderate the impact of the practices on performance as measured perceptually. Change strategies that emphasize integrated, clearly articulated reasons for the direction of change and are led by top management, mean EI, TQM and re-engineering practices will have more effect. This may be consistent with Hypothesis 4.

*MacDuffie's multi-plant automotive study.* Like Arthur, MacDuffie (1995) conducted a single-industry study, this time based on the 62 final assembly plants in the major car-producing countries, using

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data from the MIT Future of the Auto Industry project, the birthplace of the lean production concept. He differentiated two types of what he calls innovative HR practices, work system practices and HRM practices/policies. MacDuffie measured the former by the existence of work teams, problem-solving groups, job rotation, decentralization of quality-related tasks and an effective system for employee suggestions. The HRM policies included recruitment and hiring criteria geared towards openness to learning, interpersonal and teamworking skills, contingent pay systems, minimizing status differentials, training for new employees, and training of experienced employees. In addition, MacDuffie measured the extent to which the production regime was lean, or bufferless, by the percentage of total assembly area space dedicated to final assembly repair, the average number of vehicles in the work-in-process buffer between the paint and assembly areas (as a percentage of one shift's production), and the average level of inventory stocks for a sample of eight key parts (weighted by the cost of each part). Through cluster analysis, he identified three discrete types of plants. At one extreme are lean plants with few buffers, and the characteristics of both innovative work systems and HR systems; he labelled these flexible production systems. At the other extreme are traditional buffered plants, which make little use of innovative work practices and hire on the basis of a simple match to the job requirements and train very little. Under the influence of Piore and Sabel (1984), MacDuffie labels these mass production, though there is no evidence here or elsewhere to suggest that the lean producers are not mass producers, still producing standardized cars with standardized operating procedures (see Wood 1989, 1993). The third, intermediate group uses buffers and innovative HR practices to an extent that is halfway between the two other systems, while their usage of innovative work systems is at a similar low level to the traditional ''mass'' plant.

MacDuffie finds that both productivity and quality are superior in the lean production plants, while the intermediate plants also perform better than the traditional ones on both these measures, though their quality levels are far closer to the traditional than they are to the lean plants. All the three elements of the lean production system, the non-use of buffers, the work system and HR, are related to productivity and, moreover, there is a strong interaction effect between them. The results for quality are less clear cut, as the low use of buffers is not associated with high quality. Nevertheless, the plants that have low buffers and the work and HR practices associated with lean production do, again, appear to fare better than others. There is no measure of business strategy along the Porterian lines of Arthur's study. But insofar as the three groupings, or at least the two extreme groups, may be seen as having work systems and HR systems that match their production regimes (what MacDuffie (1995, 198) calls their organizational logics), it provides one test of the strategic fit hypothesis with the results clearly lending no support to it. Taking the innovative HR and work system practices as together constituting HIM, the results could be taken as support for the universalistic theory. None the less, the strong interaction effect between these and

the bufferless system on the performance measures confirms the broader hypothesis that links lean production and high-involvement (Hypothesis 3 above). There would appear to be insufficient plants in the study that have high-involvement practices with high use of buffers for the sample to have provided us with a test of whether HIM works within any regime.

### *The Study that Tests Hypothesis 4, the Moderating Effect of Strategic Integration on High-involvement Management*

*Guest and Hoque's UK greenfield-site survey.* Guest's arguments imply that his 'good' (strategic HIM) organizations will perform better than the 'lucky' (non-strategic HIM) ones, and both should perform better than the bad and ugly. If the principle of strategic integration extends to the control organization, then we would expect the 'ugly' to perform better than the 'bad'. Guest tests this argument in a direct way in his research with Hoque (Guest and Hoque 1994), which involved a sample of predominantly greenfield sites. The research instrument was a postal questionnaire completed by the manager responsible for personnel at the workplace. Guest and Hoque (1994) measure HIM (in their terms, high-commitment management) by aggregating the use of what they call HRM practices. These include 21 practices commonly associated with HIM, which both replicates the set developed by Wood and Albanese (1995), e.g. quality circles, no compulsory redundancy, and extends it to include such items as job previews and selection tests. Guest and Hoque also incorporate into their measure of HIM two indicators of what we have been treating as strategic integration, namely the integration of HR policy with business strategy and the integration of HR policies with each other. The measure of strategic integration used by Guest and Hoque is based on a single item constructed on the basis of asking the respondent whether there is ''a human resource strategy formally endorsed and actively supported by the top management team at the establishment''. Having measured HIM by aggregating 23 items (21 practices and two strategy measures), Guest and Hoque divide the organizations into their four groupings – good, lucky, bad and ugly – on the basis of two criteria, a division between plants with 12 or more and those with 11 or fewer of these practices, and whether there is a HR strategy.

Their conclusions are that the results, taken overall, are supportive of the HRM argument: ''the results demonstrate that strategic HRM does pay off'' (p. 11). None the less, according to their analysis, the good perform only better than all other organizations on three of their measures – labour turnover, disputes and quality. In some other cases – the commitment and quality of staff – the good and the lucky fare better than the other two, the bad and ugly variants of the control model; in some others (mobility of labour and productivity), the good and ugly are superior to the two non-strategic variants. Finally, absenteeism is on average lower in all three of good, lucky and bad organizations than it is in the ugly. The results are clearly not consistent across measures, with some suggesting that HIM alone is significant, some that strategic integration is significant, and yet others that the interaction between the two is significant.

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Moreover, Guest and Hoque's inclusion of two items relating to strategic integration in their measure of HIM raises questions about its meaning. It also means that their measure of strategic integration ends up being based on a single item. In an act of collegiality and openness, for which I am very grateful, Guest and Hoque gave me access to their data set to conduct further analysis. First, I reclassified the strategy items that they included in their HRM practice measure as measures of strategic integration. A latent trait analysis of these plus the third measure of whether a HR strategy exists revealed that they do form a unity. I conducted a latent trait analysis of the high-involvement practices, limiting these to the core elements that corresponded to those in my earlier work with Albanese (Wood and Albanese 1995), which revealed that they do tend to coexist. There is, though, an especially strong relationship between merit pay and appraisal, which are both included in Guest and Hoque's set. In statistical terms, they are more correlated than the latent variable model predicts, and this association is explained by a common factor over and beyond that which explains the relationship between the whole list of items. The implication of this is that only one of these practices should be included in any measure, and that, if there is a fair number of workplaces on the border line between high and low in Guest and Hoque's division of this that have both of these, their results may have been misleading.

In a regression analysis of the outcome variables, the measure of strategic integration and the measure of HIM (which excluded merit pay as well as the two strategic integration items) were both included. Also included in order to test the contingency argument was the interaction of these measures. The results offer stronger support for Guest and Hoque's own conclusion than did their own analysis, since HIM is significantly related to 11 of the 14 key performance measures included in the study. Strategic integration is, however, only related to five of these, commitment, and the quality and productivity measures, and in all these cases, less strongly than was HIM. In contrast, the interaction term is not related to any of them. These results suggest that Guest and Hoque's lucky organizations may perform as well as good organizations, questioning whether having a strategic underpinning is in fact important.

### *Discussion*

The studies differ on a range of dimensions. Firstly, they differ according to whether they focus solely on assessing whether the HR system upon which they are focusing outperforms all others in all circumstances (Hypothesis 1), or whether they examine other HR systems as well. Secondly, they vary in their underlying conceptions and in particular whether they are built around the notion of high-involvement or high-performance management with the added complication of the internal versus external labour market contrast, as used by Delery and Doty. Thirdly, they differ in the way that the practices are measured – some being measured continuously, others dichotomously. Fourthly, studies vary according to whether or not they attempt to assess the relationship between the practices before they develop their overall measure of HR systems. Researchers who have not simply aggregated the number of

practices to develop their measure have used one of two methods to analyse the relationship between practices: some form of latent variable analysis (the precise form depending on the level of measurement of the practices) or cluster analysis. Fifthly, the unit of analysis differs between studies, and, in particular, whether it is conducted at the company or workplace/establishment level. Finally, the type of performance measures used in the studies varies, with some concentrating on productivity or other labour-related variables, while others include financial performance data. There is also a difference between the type of measurement of these indices, as some studies rely on published company data and others on the assessment of relative performance by a representative of the organization. Table 1 summarizes the main studies in terms of these dimensions.

The studies vary so markedly between each other that there is not even a pair of studies that differ simply on one or two dimensions. There is no systematic relationship between the dimensions of the studies. So, for example, it is not the case that only those studies that use the concept of high-performance systems include some form of contingent pay in their bundle of HR practices. It is the case, though, that company-level studies tend to use continuous measures of their HR practices, while establishment-level ones use dichotomous measures. It is thus difficult to group the studies.

A consistent picture does not emerge from the studies. First, it is not the case that the marked differences between the results of the studies reflects in any systematic way the underlying concepts or designs of the studies. So, for example, the company-level studies do not reveal a consistent set of results while establishment-level ones show another set. Moreover, it is not possible to prioritize the results of some studies over others, since no one method is demonstrably more valid than another, even though some studies may be more sophisticated than others and have fewer weaknesses than others. Secondly, what can be concluded from some of the studies is uncertain, for within several studies the effects of HR systems vary between performance indicators and/or the results might be consistent with more than one hypothesis. Thirdly, there is some uncertainty about what the various indexes of HR systems measure and, more significantly, the nature of the underlying concepts. For example, in the case of Delery and Doty (1996), the index that is positively related to performance is more a measure of a market employment relation than the organizational-based relation implied by the concept of high-involvement, but in this case there is the added problem that non-Taylorist job flexibility is included in the market index rather than the internal one. Some of Huselid and Becker's measures, and particularly their emphasis on the pay–performance link, could be construed as indictors of a market-based model, a contractualization, not an internalization, of the employment relation.

Earlier reviews of the field (Ichniowski *et al*. 1996, 322; Guest 1997) have none the less tended to conclude that high-involvement or performance management does have positive performance effects. This partly reflects the fact that some of the less conclusive studies that are included in this survey were published after the earlier reviews were written. But,

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it also reflects a glossing over the unevenness in the results. The focus of the reviewers' attention has been on whether the effects of high-involvement/performance systems are universal or contingent, and finding little or no support for contingency theory, they have felt justified in proclaiming that ''innovative human resource management practices can improve business productivity'' (Ichniowski *et al*. 1996, 322). This neglects the conclusions of Delery and Doty in favour of the contingency theory. It also overlooks two possibilities: first, that had those studies that demonstrated universal effects but did not measure contingent factors been able to do this, it may have turned out that the effects were not as strong in certain circumstances as in others; and secondly, that the lack of a universal effect in some studies (e.g. Wood and de Menezes 1998) may be because of the importance of contingent factors that were not included in the data set. Furthermore, the tests of the universal effects of high-involvement/performance management have been limited. Proof of their synergistic effects would ideally require (a) analysis showing that they do tend to coexist and (b) that the relationship between the measure of high-involvement/performance management and performance is exponential. Huselid's study is the one that gets closest to this ideal, but there are questions about his measures and the interpretation of his factor analysis, and many of his performance tests assume linear relations. Similarly, in my study with de Menezes, the high-involvement measures are limited. The tests based on identifying a group of high-involvement/performance organizations and then assessing whether they outperform others are suitable. In the case of cluster analysis, however, one cannot be sure about what the cluster represents, since there is no test for an underlying latent variable that explains the association between the practices (as there is in Wood and de Menezes 1998). Moreover, it is not an appropriate method for testing synergy.[10]

Past reviews have also made light of any conceptual differences, yet the overview in the first part of this paper highlighted that the debate was founded on a range of potentially conflicting concepts and extended beyond a straight competition between the universal or contingent nature of high-involvement/performance systems. A key issue is the extent to which high-performance systems accentuate pay systems, and whether, if this is the case, it is to the neglect of the fundamentals of Walton's high-commitment management – job redesign, minimal status differentials and job security guarantees. That is, it is a truly distinctive concept, even its opposite, the market-relations as in Delery and Doty's terms. Or is Becker and Huselid's argument more about the importance of high-involvement systems (as recognized by Walton and others) that are oriented towards the performance requirements of the organization, the key issue then becoming more about whether they are a necessary but not sufficient condition for organizational effectiveness, the additional element being organizational fit. The review of the empirical studies shows that, as yet, there has been no serious attention to the sensitivity of the results to what is in the bundle of practices (though if they are highly inter-correlated this may be difficult to detect). Insufficient attention has also been given to Hypotheses 3 and 4, which partly reflects limitations on data

**Table 1.** Overview of Studies of the HRM – Performance Link

| *Study*: | Betcherman *et al*. (1994) | Arthur (1994) | Ichniowski *et al*. (1997) | Kalleberg *et al*. (1996) | Wood and de Menezes (1998) | Patterson *et al*. (1997) | Delery and Doty (1996) |
|---|---|---|---|---|---|---|---|
| **Hypothesis(es) tested** | Universalism | Universalism | Universalism | Universalism | Universalism | Universalism | Universalism and contingency |
| **Underlying conception** | Participative/ traditional | Control/commitment dichotomy | Contract theory | High-performance work organizations | Control/commitment dichotomy | HRM? | Market type vs. internal employment system |
| **Unit of analysis** | Establishments | Plant | Workplace | Establishment | Establishment | Company | Company |
| **Sample** | 714 Canadian establishments with more than 40 employees in 4 sectors | 30 US steel plants | 36 steel finishing sites in 17 US steel firms | 629 establishments in the USA | 1693 sample of representation sites across UK | 67 UK firms Manufacturing firms with single plants | 1050 US banks |
| **Measures of HR practices** | 11 practices plus HR in business plan | 10 practices | 13 innovative practices falling under 7 categories corresponding to high-involvement practices | 4 main features of high-performance work organizations: decentralization, job training, PRP, internal labour markets | 7 key commitment practices. Latent class model used to identify 4 classes. | 2 main factors: Job design Skill acquisition Other individual practices | 7 HR practices |
| **Pay system in HR system** | Variable pay | High overall wages Non-incentive schemes | Profit-sharing, incentives with quality bonus | Bonuses for performance, profit sharing or stock options | Salaried payment style Pay not included | High pay Incentive pay as individual item | Performance-based compensation |
| **Measure of HR system** | 3 clusters: traditional, compensation and participation | Clusters of practices | 4-fold classification of systems from traditional to innovative | 3-fold classification based on cluster analysis | 4 progressive latent classes | 2 scales based on factors | 3 ideal types – market, middle of road, internal |
| **Outcome/ performance variables** | Labour quits + Lay-offs + Accidents Grievances + Unit costs + Labour productivity Customer complaints Product/service quality Sales Market share and profits | Labour efficiency + Scrap rate + Labour turnover + | Productivity + Quality + | Performance on range of indicators over last 3 years: including Quality+ Profitability + Relations between managers and employees+ Customer satisfaction | Financial performance Job creation Employee relations Climate Labour turnover Absenteeism | $\Delta$ Profitability + $\Delta$ Performance + | Return on assets[a] Return on equity[a] |
| **Measures of strategic integration/business strategy** | None | Porter's cost-minimization and quality dichotomy | None | None | None | None | Miles and Snow's prospector, analyser and defender trichotomy |
| **Moderators** | None | None | None | None | None | None | Fit tested |
| **Supported hypothesis(es)** | $H_1$ on some outcomes | $H_1$ but maybe $H_3$ | $H_1$ but maybe $H_3$ | $H_1$ on all but 1 outcome | No unique effect for high-involvement management | $H_1$ for some practices | $H_2$ |

**Table 1** (*continued*)

| *Study*: | Youndt *et al*. (1996) | Huselid (1995) | Becker and Huselid (1998a,b) | Hoque (1999) | MacDuffie (1995) | Lawler *et al*. (1995) | Lawler *et al*. (1998) | Guest and Hoque (1994) |
|---|---|---|---|---|---|---|---|---|
| **Hypothesis(es) tested** | Universalism and contingency | Universalism and contingency | Universalism and contingency | Universalism/ element of contingency | Universalism plus interaction with quality practices | Universalism plus interaction with TQM | Universalism plus interaction with TQM | Universalism and (mild) contingency theory |
| **Underlying conception** | Human-capital-enhancing HR system (HCS) | High-performance management | High-performance management | HRM as commitment and strategic integration | Lean production | High-performance work systems | High-performance work systems | HRM as commitment and strategic integration |
| **Unit of analysis** | Workplace | Company | Company | Workplace | Plant | Company | Company | Workplace |
| **Sample** | 97 manufacturing plants | Publicly quoted US firms | 702 publicly quoted US firms | 209 hotels in the UK with 25 or more employees | 62 car assembly plants in major car-producing countries | 279 US companies in Fortune 1000 | 212 US companies in Fortune 1000 | 390 UK greenfield sites mainly manufacturing |
| **Measures of HR practices** | 9 HR practices for HCS<br>6 for alternative administrative HR system | 13 HRM practices – factor analysis revealed 2 factors – skills and motivation | 21 HRM practices | 22 high-commitment practices building on Wood and Albanese and Guest and Hoque | High-commitment HR practices plus flexible work system practices and bufferless (lean) systems | Range of practices classified into four groups: information sharing, training and skills, reward, and power sharing | Range of practices classified into four groups: information sharing, training and skills, reward, and power sharing | 21 practices – 19 high-commitment, two concerned with strategic integration |
| **Pay system in HR system** | Group incentives, Skill-based pay, External equity, Salaried compensation (all in HCS) | 1 item covering incentive profit-sharing and gain-sharing plans | Merit or incentive pay based on performance appraisal<br>Firm's target rate for total cash compensation,<br>Cash incentive, profit-sharing or gain-sharing plans,<br>Deferred incentive, profit-sharing or gain-sharing plans | | Contingent pay system | Various forms of non-day rate or salaried pay | Various forms of non-day rate or salaried pay | Merit pay |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Measure of HR system** | Aggregate-index of HCS based on 9 practices | 2 scales from factor analysis | Aggregate index of 21 items based on standardized means | 3-fold classification of HRM – based on practices | Clustering of practices | 4 measures corresponding to types of practices | 4 measures corresponding to types of practices | 4 groups on basis of median of aggregation of 21 practices and measure of whether have HR strategy |
| **Outcome/ performance variables** | Machine efficiency[a]<br>Customer alignment[a]<br>Employee productivity[a] | Labour turnover<br>Productivity<br>Corporate financial performance<br>Tobin's *q* + | Firm's market value + | Commitment +<br>Job satisfaction +<br>Flexibility of staff[a]<br>Job mobility[a]<br>Quality of work[a]<br>Quality of staff[a]<br>Labour productivity[a]<br>Quality of service[a]<br>Financial performance[a] | Productivity +<br>Quality + | Total factor productivity +<br>Sales per employee +<br>Return on sales +<br>Return on assets ++<br>Return on investment ++<br>Total return to investors | Sales per employee +<br>Return on sales +<br>Return on assets +<br>Return on investment +<br>Total return to investors | Labour turnover[a]<br>Disputes[a]<br>Quality[a]<br>Commitment +<br>Quality of staff +<br>Labour mobility<br>Productivity<br>Absenteeism |
| **Measures of strategic integration/ business strategy** | Manufacturing strategy – quality, delivery flexibility, scope flexibility, and cost | Strategic integration measure used to validate scale | Organizational and strategic fit measured within index of implementation alignment | Quality enhancers<br>Cost reduction/ price competition | None but extent of quality practices measured | None | None | 3 measures – 2 included in measure of high commitment management, other separately |
| **Moderators** | Interactions between manufacturing strategy and HR systems | Interactions tested | Interaction between HP system and implementation alignment tested | Business strategy | Interaction between HR, work systems and quality/stock practices tested ++ | Interaction with quality practices tested ++ | Interaction with quality practices and re-engineering practices tested ++ | Interaction effect important on three measures |
| **Supported hypothesis(es)** | $H_2$ claimed, maybe $H_3$ | $H_1$ for some outcomes | $H_1$ and strategic fit shown to have an independent effect | $H_1$ on some outcomes, $H_2$ on some, may support $H_3$ | $H_3$ | $H_3$ | $H_3$ | $H_1$ on some outcomes, interaction effect with strategic integration on some outcomes, strategic integration alone has effect on some others |

Note: + High-involvement management significantly related to outcome.
[a] Significant contingent relationship between high-involvement management and outcome.

collection but also the way these hypotheses have emerged in the debate as it has progressed. This suggests that the issues are far from fixed.

## Conclusions

This paper has concentrated on overviewing the recent studies on HR systems and performance largely in their authors' own terms. Thinking in terms of the onion metaphor, I have concentrated on taking off the top few layers of skin. The review has shown that beneath the top layer of universalism vs. contingency are a number of more complicated hypotheses linking HR practices to performance. The debate is firstly a matter of differing routes between these and performance, and how one constitutes one's HR system depends on which of these one deems as most significant. The empirical work, none the less, has concentrated on assessing the link between practices and performance, with an increasing disregard for the mechanisms linking them. This has meant that there has been no systematic examination of the link between different performance measures and particularly between HR outcomes and performance. Moreover, there has been an increasing neglect of the psychological processes that mediate or moderate the link between HR practices and performance. This may be a reflection of the ascendancy of the strategy over social psychology literature, in which so much of the early foundations of HRM were based. The issue has been treated as an organizational-level matter, when it is in fact a multi-level question.[11]

Secondly, the debate is about the importance of organizational fit and, in turn, about the relative importance of either TQM (an organizational logic of quality) or the significance given to the HR (an organizational logic of HRM or high-performance in Becker and Huselid's terms). Both conceptually and empirically, this aspect of the area is underdeveloped. It is at this point that it particularly needs to connect with the critical literature on HRM. More specifically, a central claim is that lean production and even high-involvement management, at least in practice, leave intact the basic Taylorist design of the majority of jobs, which is assumed to deskill workers. A corollary of this is that if they have any effect on performance it is through work intensification, perhaps in conjunction with the wage system if this is matched by pay increases. In contrast, Becker and Huselid's drive to show that HRM has a direct ''bottom line'' effect is based on an assumption that a skilful contribution is required of all members of the organization. Once technological factors and product differentiation dominated competition, but now human capital dominates, thus creating the space for personnel management to prove its worth and for all to be involved in the organization. As a narrative, it works as long as there are no Taylorist jobs. But the evidence critics draw on is that Japanese-style high-involvement and quality management in manufacturing settings is more about procedural changes in the way jobs are designed and less about their substance (Babson 1995; Berggren 1993, 22–55; Wood 1993). In the extreme, the worker is involved in perfecting the design of his/her routinized work (thus breaking the Taylorist divide between conception and execution but making his/her execution even more Taylorist). Becker and Huselid,

in arguing that all employees can have a strategic impact, either romanticize the role that workers can have or genuinely believe that high-performance is only possible with well-designed jobs. The latter is though a psychological, not a business strategy argument. This takes us back to the origins of high-commitment management in job design theory, the implication being that any further onion-peeling will lead to the long-standing debate about the conditions in which job design is required or will work. The HRM message about the importance of internal fit is then first and foremost about the practices that either make up or complement good job design.

If one's arm were twisted to make an ''overall'' conclusion on the balance of the evidence so far, one in favour of Hypothesis 3 or even 4 would be just as justified as the universal, first hypothesis. The thrust of this review is, though, that any such conclusion would be premature because of conflicting research results but, more importantly, because the debate is still in its infancy. Taking the terrain within its own terms, there are four priorities. The first should be to acquire more comprehensive data sets. The second is to assess more the relationships amongst both the HR practices and the various performance measures, which should include the overall health and stress of employees and measures of rates of change, not least because of TQM's emphasis on continuous improvement. Thirdly, more attention should be given to the psychological mediators and moderators. Fourthly, the issue of environmental fit should be addressed directly and not reduced to strategic fit. Thus, both contextual variables and measures of strategy, or better still, dimensions of strategy, will be included in the analysis. Going beyond the existing terms of the debate particularly requires more thought being given to the implications of the variety of TQM systems that we find in practice, and particularly to two distinctions that have emerged in the literature. First is the differentiation between TQM systems that are focused on controlling processes and add little involvement and those oriented towards organizational learning (Sitken *et al*. 1994). The second distinction is between those that rely on heavy supervision and those based on self-managed teams (Appelbaum and Batt 1994; Wood 1990, 181). Attending to such nuances will itself require that consideration is given to the neglected fourth, environmental fit, and hence back to the original basis of the contingency theory of organizations, variation in uncertainty, but it may equally lead us to the issue of values, and ultimately away from best-practice thinking.


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## Notes

1 See Parker *et al*. (1997) for a discussion of what they term the key strategic and role orientations assumed to be central to new production methods.

2 Womack *et al*. (1990, 91–93) show that there are car plants in Japan, which through the use of lean production methods were able to have high quality and low unit costs.


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3 Kanter (1989, 12), in a similar vein, reconciled her advocacy of the benefits of a new post-entrepreneurial model with her long-standing adherence to contingency theory by arguing that the former referred to ''broad strategies that hold across many industries'', but that ''the specific ways the strategies are interpreted and used clearly depend on each company's history, environment, and current situation''.

4 Becker and Huselid (1998a, 59), in the fullest statement of their developing framework, follow Schuler (1992) and break down what they call strategic HRM into five elements: HRM philosophy, HR policies, HR programs, HR practices and HR processes. In these terms, the philosophy drives the design of the other four elements, and there is a 'best practice' philosophy: it is one that approaches the design of HR systems according to the principles of internal and external fit. Strategic contingencies enter at the practices stage.

5 Becker and Huselid (1998a, 59) do not entirely rule out ''best practice'' practices since, once ''the requirements of a particular firm's policy in that area have been developed based on strategic considerations it may well be that a 'best practice' for such a policy exists''.

6 In addition to the measure of HR in business planning, Betcherman *et al*. (1994, 21) also included a measure of the business strategy of the firm: differentiating between those that concentrate on process, cost or product improvements. The process strategy increases the probability of adopting the participation model and, to a lesser extent, the compensation one, while decreasing the probability of having a traditional approach (Betcherman *et al*. 1994, 58). Betcherman *et al*. do not, however, look at whether the strategy moderates the effects of the HR system or whether those firms that have the participative HR system and adopt a process strategy outperform all others.

7 Delaney and Huselid (1996) did an alternative analysis of the National Organizations Survey, which confirms the association between high-performance practices and performance.

8 My research in UK manufacturing plants (Wood 1996a) suggests that as managements adopt HIM pay systems tend to lag HIM practice, both conceptually in the minds of managers when planning change and temporarily in the implementation process.

9 My research (Wood 1999), which uses a data set for US workplaces, suggests that quality and high-involvement practices may well tend to coexist.

10 It could be claimed that the assumption that the practices have synergistic effects is not necessarily being made in the studies that aggregate practices. That they form a family (i.e. there is some internal fit), is, however, assumed; the main assumption then made is that each practice has the same effect on performance, so firms on the lower and middle range of the index may use a variety of practices. Becker and Huselid (1998a, 64) present this as a virtue. The underlying project of all writers, though, does appear to assume that the whole is greater than the sum of the parts, diversity between writers (if it exists) being more about the extent to which the practices individually or, when used sparsely, have any effect at all. Most authors do not though write sufficiently about this for one to make a definitive judgement.

11 The increasing neglect of the individual level means that the results of commitment research at this level have been insufficiently taken on board. In addition, the importance of employee perceptions of justice and management's motivations for adopting practices (highlighted by Koys' 1988 study) have been largely ignored. A concern for justice would provide space for the re-entry of industrial relations institutions and a fuller treatment of the added value of having partnership relations with either unions or works council when following HIM that is assumed by Kochan and other industrial relations specialists.

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