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Article *in* The Academy of Management Journal · August 1996

DOI: 10.2307/256712

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Brian Becker; Barry Gerhart

The Academy of Management Journal, Vol. 39, No. 4. (Aug., 1996), pp. 779-801.

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© Academy of Management Journal
1996, Vol. 39, No. 4, 779–801.

THE IMPACT OF HUMAN RESOURCE MANAGEMENT ON ORGANIZATIONAL PERFORMANCE: PROGRESS AND PROSPECTS

BRIAN BECKER
State University of New York at Buffalo
BARRY GERHART
Vanderbilt University

We describe why human resource management (HRM) decisions are likely to have an important and unique influence on organizational performance. Our hope is that this research forum will help advance research on the link between HRM and organizational performance. We identify key unresolved questions in need of future study and make several suggestions intended to help researchers studying these questions build a more cumulative body of knowledge that will have key implications for both theory and practice.

A rapidly changing economic environment, characterized by such phenomena as the globalization and deregulation of markets, changing customer and investor demands, and ever-increasing product-market competition, has become the norm for most organizations. To compete, they must continually improve their performance by reducing costs, innovating products and processes, and improving quality, productivity, and speed to market. With this Special Research Forum on Human Resource Management and Organizational Performance, we hope to contribute to a better understanding of the role of human resource decisions in creating and sustaining organizational performance and competitive advantage.

The conceptual and empirical work relevant to this question has progressed far enough to suggest that the role of human resources can be crucial (Arthur, 1994; Cutcher-Gershenfeld, 1991; Huselid, 1995; Huselid & Becker, 1996; Gerhart & Milkovich, 1990; Ichniowski, Shaw, & Prennushi, 1994; MacDuffie, 1995). However, given the importance and complexities of the issue, this body of work is relatively small, and most of the key questions are sorely in need of further attention. We hope that the publication of this special forum will encourage and reinforce interest in this area, as well as

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The authors contributed equally and are listed in alphabetical order.

We thank Lee Dyer, Mark Huselid, Susan Jackson, Charles Trevor, and Patrick Wright for comments on an earlier version of this article.

help researchers in their decisions regarding what to study and how to study it. We also hope that it will demonstrate to senior human resources (HR) and line managers that their HR systems represent a largely untapped opportunity to improve firm performance.

How do human resource decisions influence organizational performance? In the simplest terms, they must either improve efficiency or contribute to revenue growth. Human resources, both as labor and as a business function, has traditionally been viewed as a cost to be minimized and a potential source of efficiency gains. Very seldom have HR decisions been considered a source of value creation, or what Hamel and Prahalad (1994) termed "numerator management." Labor costs continue to be the single largest operating cost in many organizations (Saratoga Institute, 1994), and reductions in employment continue to be a major aspect of strategies to restructure operations and reduce these costs (e.g., Uchitelle & Kleinfield, 1996). Do these decisions create value, or just reduce costs? Empirically, the challenge is to distinguish between staffing reductions that are purely cost-cutting measures and restructurings that require fewer employees but create value because the new structures are more appropriate for the firms' particular strategies. The positive stock market reactions to employment reductions reported in Davidson, Worrell, and Fox (this issue) are consistent with both interpretations.

The new interest in human resources as a strategic lever that can have economically significant effects on a firm's bottom line, however, aims to shift the focus more toward value creation. This new perspective, addressed by special issues and forums in this journal and in others (*Industrial Relations, Journal of Accounting and Economics*), suggests that HR (both the function and the system) contributes directly to the implementation of the operating and strategic objectives of firms.[1] This new strategic role for HR has attracted interest in the subject beyond the traditionally narrower boundaries of human resource research. The strategic approach draws heavily on psychology, economics, finance, and strategy, and we feel that the best research will likely come from taking an interdisciplinary focus.

Reflecting this multidisciplinary interest, the mechanisms by which human resource decisions create and sustain value are complicated and not well understood. Early efforts, such as utility analysis, sought to quantify the dollar value of improvements in employee selection and other human resource activities (Boudreau, 1992; Brogden & Taylor, 1950; Cascio, 1991; Schmidt, Hunter, McKenzie, & Muldrow, 1979). However, these estimates typically have rather broad confidence intervals (Alexander & Barrick, 1987) and are not always as robust as one would like in the face of changes in assumptions (e.g., those regarding the standard deviation of performance in

[1] Indeed, it can be argued that this is one of the remaining core roles left for HR in organizations as much of the transactional work of the HR function is outsourced (Corporate Leadership Council, 1995).

dollars). Moreover, there is some doubt regarding whether managers' decisions are particularly responsive to information about the estimated dollar value of alternative decisions, especially as the estimation procedures become increasingly complex and difficult to understand (Latham & Whyte, 1994).

Empirical research on the subject of this special forum will likely encounter some similar obstacles in making the translation from research to policy implications. However, a potential advantage in this respect is that most of the papers herein look directly at the impact of HR decisions on performance outcomes that have clear meaning and relevance to managers, such as stock performance, productivity, profits, quality, and organizational survival. In addition, this research suggests that HR can go beyond its traditional organizational role to become a strategic partner in most organizations. The subject of this special forum should be of equal interest to senior line executives and senior human resource executives. Indeed, creating this strategic impact very likely requires a system focus and a degree of attention to alignments both within HR systems (internal fit) and with operating and strategic objectives (external fit) that necessarily involves a closer relationship between HR and line managers.

In the remainder of this article, we review theoretical work suggesting that an HR system can be a unique source of sustained competitive advantage, especially when its components have high internal and external fit (Baird & Meshoulam, 1988; Lengnick-Hall & Lengnick-Hall, 1988). This review leads us to a discussion of issues in assessing fit. Next, we make some suggestions that we hope will aid in building a cumulative body of knowledge, something that is crucial for advancing theory and for making more meaningful and influential policy recommendations. Specifically, we focus on addressing the significance of findings, the relative emphases on theory and empirical research (and replication), and the measurement of effectiveness. We also describe some of the typical specification errors research in this area is susceptible to and some thoughts on how to avoid such errors. Finally, we summarize some of the key policy and research implications of the special forum and the broader body of work on human resources and organizational performance.

HR AS A UNIQUE SOURCE OF SUSTAINED COMPETITIVE ADVANTAGE

Recent theoretical work in business strategy has given a boost to the prominence of HR in generating sustained competitive advantage. According to the resource-based view of the firm (e.g., Barney, 1986, 1991, 1995), firms can develop sustained competitive advantage only by creating value in a way that is rare and difficult for competitors to imitate. Although traditional sources of competitive advantage such as natural resources, technology, economies of scale, and so forth, create value, the resource-based argument is that these sources are increasingly easy to imitate, especially in comparison to a complex social structure such as an employment system. If that

is so, human resource strategies may be an especially important source of sustained competitive advantage (Lado & Wilson, 1994; Pfeffer, 1994; Wright & McMahan, 1992).

The concept of the HR system as a strategic asset has implications for both the characteristics and the effects of such a system. Strategic assets are "the set of difficult to trade and imitate, scarce, appropriable, and specialized *resources* and *capabilities* that bestow the firm's competitive advantage" (Amit & Shoemaker, 1993: 36). Unlike capital investments, economic scale, or patents, a properly developed HR system is an "invisible asset" (Itami, 1987) that creates value when it is so embedded in the operational systems of an organization that it enhances the firm's capabilities. This interpretation is also consistent with the emphasis on "core competencies" developed by Prahalad and Hamel (1990), who argued that conventional measures of economic rents such as the difference between the market and book value of assets (i.e., Tobin's *q*) reflect "core competence—people-embodied skills" (Hamel & Prahalad, 1994: 232).

Why might it be especially difficult to imitate human resource strategies that are deeply embedded in an organization? Two of the key factors are causal ambiguity and path dependency (Barney, 1991; Collis & Montgomery, 1995). First, it is difficult to grasp the precise mechanisms by which the interplay of human resource practices and policies generates value. To imitate a complex system, it is necessary to understand how the elements interact. Are the effects additive or multiplicative, or do they involve complex nonlinearities? As our later discussion of fit and synergy indicates, researchers are a long way from understanding the precise nature of these interactions. Without being able to understand how an HR system works, it is not possible to imitate it (by, for instance, "reverse engineering" it). It is even difficult for a competing firm to imitate a valuable HR system by hiring away one or a few top executives because the understanding of the system is an organizational capability that is spread across many (not just a few) people in the firm.

Second, these HR systems are path dependent. They consist of policies that are developed over time and cannot be simply purchased in the market by competitors. A competitor can understand that a system is valuable but is precluded from immediate imitation by the time required to fully implement the strategy (assuming the system could be understood). Further, there may be limits on management's ability to successfully replicate socially complex elements such as culture and interpersonal relationships.

As Table 1 indicates, the studies contained in this volume are consistent in their support of a link between HR and performance, suggesting that HR decisions do influence value creation. Whether these value-creating HR practices are sufficiently rare and inimitable to create sustained competitive advantage probably depends in part on the nature of their overall configuration and fit, a topic discussed below.

Is There One Best Way, Many Best Ways, or Does It Depend?

Much of the research on the link between HR and firm performance has looked at single HR practices such as compensation (e.g., Gerhart & Milkov-

TABLE 1
Studies Included in the Research Forum, by Key Characteristics

Study	Level of Analysis			Effectiveness Measure(s)	Support for HRM Effects?		Longitutinal Data?
	Firm	Business Unit	Facility		Main	Fit	
Davidson, Worrell, & Fox	Yes	No	No	Stock price	Yes	Not tested	Yes
Welbourne & Andrews	Yes	No	No	Stock price Survival	Yes	Not tested	Yes
Delery & Doty	Yes	No	No	Profitability	Yes	Weak	No
Delaney & Huselid	Yes	No	No	Survey	Yes	Weak	No
Youndt, Snell, Dean & Lepak	No	No	Yes	Survey	Yes	Mixed	No
Banker, Lee, Potter, & Srinivasan	No	No	Yes	Sales Customer satisfaction Profit	Yes	Yes	Yes
Banker, Field, Schroeder, & Sinha	No	No	Yes	Productivity Product quality	Yes	Not tested	Yes

ich, 1990) or selection (e.g., Terpstra & Rozell, 1993). The implicit assumption is that the effects of different HR decisions are additive, an idea that is inconsistent with the emphasis on internal fit in the resource-based view of the firm. With its implicit systems perspective, the resource-based view of the firm suggests the importance of "complementary resources," the notion that individual policies or practices "have limited ability to generate competitive advantage in isolation," but "in combination . . . they can enable a firm to realize its full competitive advantage" (Barney, 1995: 56). This idea, that a system of HR practices may be more (or less) than the sum of the parts, appears in discussions of synergy, external and internal fit, bundles, holistic approaches, configurations, contingency factors, and so forth (Amit & Shoemaker, 1993; Delery & Doty, this issue; Doty, Glick, & Huber, 1993; Dyer & Reeves, 1995; Gerhart, Trevor, & Graham, 1996; Huselid, 1995; Legnick-Hall & Legnick-Hall, 1988; Meyer, Tsui, & Hinings, 1993; Milgrom & Roberts, 1995). In contrast, others are more apt to suggest that there is an identifiable set of best practices for managing employees that have universal, additive, positive effects on organizational performance (e.g., Applebaum & Batt, 1994; Kochan & Osterman, 1994; Pfeffer, 1994; Schmidt, Hunter, & Pearlman, 1981). Youndt, Snell, Dean, and Lepak (this issue) maintain that the two approaches are in fact complementary.

Pfeffer (1994) argued that the empirical support for contingencies is sufficiently weak that a "best practice" perspective should be the preferred approach. However, even within the best practices approach, researchers have much to learn about what constitutes a high performance HR strategy. Studies of so-called high performance work systems vary significantly as to the practices included (see Table 2) and sometimes even as to whether a practice is likely to be positively or negatively related to high performance. For example, Arthur's (1994) high performance employment system, which he termed a "commitment" system, specifies a low emphasis on variable pay, whereas the high performance employment systems defined by Huselid (1995) and MacDuffie (1995) have strong emphases on variable pay. Another example would be HR strategies that rely on internal promotions and provide access to employee grievance procedures. Huselid (1995) and Pfeffer (1994) described such practices as high performance. Other studies (Arthur, 1994; Ichniowski et al., 1994) have included these practices as elements of more rigid HRM systems often associated with less productive unionized environments. Huselid and Becker (1995) termed these two practices "bureaucratic HR" and found them to have economically and statistically significant, negative effects on firm profitability in two different data sets.

The notion of best practices probably requires some clarification as well. The term is typically used in a way that connotes both the level of policy and the breadth of effect. At the level of policy, best practice brings to mind very specific forms of performance appraisal or team incentive systems that might be benchmarked. The implicit asumption of benchmarking is that the *effects* of a best practice are generalizable, and not firm specific. We believe

TABLE 2
High Performance Work Practices, by Authors

Practice	Kochan & Osterman	MacDuffie	Huselid	Cutcher-Gershenfeld	Arthur
Self-directed work teams	Yes	Yes		Yes	Yes
Job rotation	Yes	Yes			
Problem-solving groups/quality circles	Yes	Yes		Yes	Yes
TQM	Yes	Yes			
Suggestions received or implemented		Yes			
Hiring criteria, current job vs. learning		Yes			
Contingent pay		Yes	Yes		Yes
Status barriers		Yes			
Initial weeks training for production, supervisory, & engineering employees		Yes			
Hours per year after initial training		Yes	Yes		Yes
Information sharing (e.g., newsletter)			Yes		
Job analysis			Yes		
Hiring (nonentry) from within vs. outside			Yes		
Attitude surveys			Yes		
Grievance procedure			Yes		
Employment tests			Yes		
Formal performance appraisal			Yes		
Promotion rules (merit, seniority, combination)			Yes		
Selection ratio			Yes		
Feedback on production goals				Yes	
Conflict resolution (speed, steps, how formal)				Yes	Yes
Job design (narrow or broad)					Yes
Percentage of skilled workers in facility					Yes
Supervisor span of control					Yes
Social events					Yes
Average total labor cost					Yes
Benefits/total labor cost					Yes

there may be some confusion regarding the level of analysis (policies and practices) and the generalizability of these effects.

Although HR often focuses on the level of practice, the strategic emphasis implied by the subject of this special research forum would probably have to be a higher-level system characteristic if it were to have a generalizable best practice effect. In other words, if there is a best practice effect it is more likely to be in the "architecture" of a system. Although Pfeffer (1994) referred to them as management "practices," many of the characteristics he identified as part of a high performance work system would fit under this architectural rubric. For example, one architectural element of a high performance HR system might be that employee performance is valued and rewarded. It is this architectural characteristic that would be expected to have the generalizable (best practice) effect on firm performance. Table 3 illustrates the relationship between levels in an HR system and the generalizability of their effect, for one dimension of that system. There may be a best HR system architecture, but whatever the bundles or configurations of policies implemented in a particular firm, the individual practices must be aligned with one another and be consistent with the HR architecture if they are ultimately to have an effect on firm performance. In this sense the best practice and contingency hypotheses are not necessarily in conflict—they simply operate at different levels of an HR system. Case studies of Lincoln Electric and Hewlett-Packard reflect this interpretation (Milgrom & Roberts, 1995). Two companies with dramatically different HR practices arguably have quite similar HR architectures. For example, although the specific design and implementation of their pay and selection policies are different, the similarity is that both link pay to desired behaviors and performance outcomes and both effectively select and retain people who fit their cultures.

We believe that future research on the best practice–fit debate should carefully consider the level of analysis within an HR system. Terms like best practice may have one implication for managers and another for researchers.

TABLE 3
Implications of Best Practice for HR System Structure and Effects

Concept	Example	Effect
System architecture: Guiding principles	Employee performance is valued	Generalizable or universal
Policy alternatives: Mix of policies consistent with architecture and appropriately aligned internally and externally	Mix of performance appraisals, incentive pay, promotions	Contingent on appropriate firm-specific alignments
Practice process: Best-in-class implementation and technique *given* appropriate decisions at architectural level	State-of-the-art 360-degree performance appraisal Team-based incentive compensation	Contingent on particular policy alternatives

Cross-sectional relationships that are interpreted as a best practice effect must be consistent with the conceptual requirements of competitive advantage described above. Otherwise, this research can be misinterpreted by HR and line managers attempting to apply these results to their own organizations. Traditionally, HR managers have focused their efforts largely on the second and third levels of the HR system in Table 3, and within those levels there was little attention to either internal or external alignment. We are concerned that research emphasizing best practice results not be interpreted as suggesting that firms simply extend this traditional focus to HR policies and practices. In short, HR managers should not be misled into thinking that adding (or subtracting) points on the rating scales used in their performance appraisal systems will have a strategic impact on organizational performance.

Thus far, the evidence from research attempting to resolve the best practice–fit debate has been mixed at best (Gerhart et al., 1996) and, as Table 1 indicates, the articles included here tell a similar story. Why is this the case? Although conceptually the notion of fit has been considered more broadly (Venkatraman, 1989), in practice researchers have tended to be fairly simplistic, typically thinking in terms of statistical interactions between only two variables at a time (e.g., pay and business strategy) and specifying that the nonparallel response functions are linear. In a discussion of these issues as they apply to compensation research, Gerhart and colleagues (1996) suggested that although best practices are consistent with institutional theory and efforts to strive for parity, contingency models follow more directly from resource-based approaches and efforts to achieve sustained competitive advantage. They noted the following:

> In some senses, the high potential for resource-based approaches begins where the benefits of institutional approaches end. For instance, after best practices add value to the firm . . . firms may extract additional benefits by adding complexity to the program and integrating it with other firm functions (Gerhart et al., 1996: 153).

Huselid and Becker (1995) provided indirect support for this hypothesis. Using a measure of high performance work systems that increased in value with a firm's above-average ratings on each of 17 characteristics that broadly reflected skill development, performance management, and the strategic role of an HR system, these researchers reported considerable evidence of nonlinearity in the effects of these changes on firm market value. Figure 1 describes these results. HR system was measured in standard units to reflect the notion of relative importance implicit in competitive advantage. The X axis depicts those standard scores as equivalent percentiles. The Y axis expresses market value per employee, so the slope reflects the change in that value associated with a given percentile improvement in a firm's HR system.[2]

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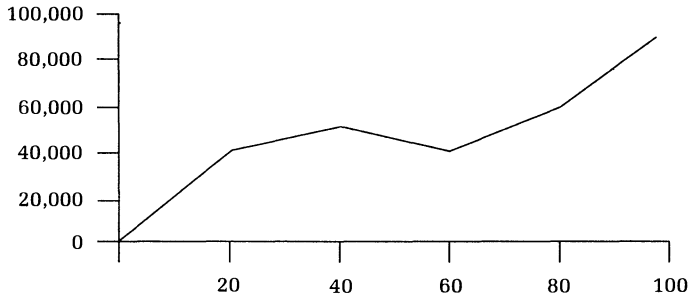
[2] As the origin of Figure 1 is arbitrarily set to zero, the reader should not interpret the market value for firms at the 60th percentile as $45,000 per employee. The sample average for these data is approximately $320,000 per employee.

FIGURE 1
Percent Change in Market Value per Employee



Source: Huselid and Becker (1995).

These findings suggest that firms enjoy considerable gains as they "get in the game." During this phase (0–20th percentile), the HR system is moving from being an impediment to firm performance to being a neutral influence. Firms in the broad middle ground (20th–60th percentile) may concentrate on professionally developed best practices, but these improvements are not what is required for sustained competitive advantage and improved firm performance. The last group, the firms above the 60th percentile, arguably have all the appropriate best practices, but more important, have begun to integrate those practices into a system that fits the firms' operational fabrics. The impact on firm performance is the same as in those HR systems below the 20th percentile, but for different reasons. Unfortunately, this evidence is entirely inferential. Research that directly measures this best practice–contingency continuum and its effects on market value should be an important priority for future work.

Configurational approaches also suggest that the typical approach to fit needs to be revisited (Arthur, 1995; Delery & Doty, this issue; Doty et al., 1993; Meyer et al., 1993). Indeed, when it is realized how simple notions and tests of contingency have been, the distinction between best practice and contingency models begins to blur. Consider, for example, that in the best practice model, the main effect coefficient in a regression equation reflects all contingencies in the sample. In essence the coefficient is the weighted average of those interaction terms not included in the model. A test of the contingency model typically enters the cross-product of an HR characteristic (e.g., degree of variable pay) and a contingency factor (e.g., corporate strategy). A statistically significant cross-product is taken as support for the contingency hypothesis. However, this statistical interaction is also universal (a best practice) because it implies that, all else being equal,

the effect of a change in the HR characteristic on organizational performance is β_i for a given value of corporate strategy. In other words, for a particular corporate strategy, the HR system has a universal, or constant, effect on organizational performance.

In a sense, simply entering cross-products to test fit hypotheses may show just how little is known about systems of HR practices.[3] When one actually attempts to develop specific hypotheses about what staffing, compensation, and several other activities should look like in one or more synergistic effective systems, one quickly realizes that theories are not typically advanced enough to do much more than suggest that some dimensions of staffing, pay, development, and so forth should be "high" or "low."

A related issue concerns the statistical methods used when researchers attempt to derive configurations empirically. Approaches like factor analysis and principal components analysis, which are based on the general linear model, extract linear combinations of variables. Yet configurations may well contain variables that are not linearly related, suggesting that greater consideration should be given to the use of methods like cluster analysis (Arthur, 1992, 1994) or neural network analysis (Woelfel, 1993), which impose fewer restrictions of this sort.

Is There a Downside to Fit?

Lest researchers become too enamored with the advantage of tight fit or alignment of HR practices with internal and external contingency factors, we should note the potential downside of tight fit. Tightly coupled systems, because of their complexity and the high interdependence between system elements, may break down in unexpected ways, and they may not be very adaptable to change (Gerhart et al., 1996; Orton & Weick, 1990; Perrow, 1984).

One example, Schneider's attraction-selection-attraction model (Schneider, 1987; Schneider, Goldstein, & Smith, 1995), suggests that the people in organizations can become somewhat homogeneous over time because people tend to hire in their own image and this process is self-reinforcing. Although this homogeneity may work well under a given set of contingencies faced by an organization, any change in those contingencies may result in a homogeneous organization's having difficulty in adapting because of its lack of diversity in competencies. This formulation suggests that one of the elements of a high performance HR system, under changing circumstances, must be flexibility. Although flexibility is not a hallmark of most organizational systems, if strategic HR systems are genuinely aligned around business problems and operating initiatives, and that perspective is embedded in the system and the organization, all stakeholders will be anticipating system change as they see the business problems evolving.

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[3] There are also methodological problems with entering cross-products. It is well known that the statistical power of significance tests of cross-products is often low. Therefore, more attention needs to be devoted to using tools like LISREL to correct for measurement error carrying out such tests (Gerhart et al., 1996; Jaccard & Wan, 1995).

DEVELOPING A CUMULATIVE BODY OF KNOWLEDGE

In addition to sorting through these important conceptual issues, researchers should address several methodological challenges if empirical progress is to be made. The first of these goes to the fundamental focus of empirical research in this literature and what is required to build a cumulative body of knowledge. For example, Cohen (1994) and Schmidt (in press) have argued that empirical research in psychology should move away from its traditional reliance on statistical significance tests and focus more on point estimates of effect sizes and confidence intervals to build a more cumulative body of knowledge. We believe this same conclusion applies to management research generally, and to the question of the HR–firm performance relationship in particular. We would like to see all studies report raw regression coefficients, which reflect not only the direction, but also the *magnitude* of the effect of HR on organizational performance. The raw regression coefficient helps answer questions such as, What is the change in shareholder return due to a particular change in the HR system? The answer to this question is much more meaningful than the answer provided by a test of statistical significance that poses the question, Is the relationship different from zero?

Cohen (1994: 1001) saw this reticence to discuss results in terms of effect sizes as an implicit indictment of the measures being used. Following Tukey (1969), Cohen suggested that the reason researchers avoid using raw regression coefficients as indicators of effect sizes is because doing so would often confront them with the fact that their measures have no inherent meaning. This problem should be avoidable in HR–firm performance research because the dependent variables, organizational outcomes such as shareholder return, profits, productivity, and organizational survival, are typically directly observable and have meaningful natural metrics. The independent variables, HR activities and systems, can also often be measured in terms of natural metrics that are ratio scales (e.g., the percentage of employees in teams, annual hours of formal training), although rating scales that are at best interval scales (e.g., degree of employment security, focus on participation, value placed on human resources) continue to be used in many studies. All else being equal, ratio scales are to be preferred.

The reliance on statistical significance tests, and similar emphases on explained variance (i.e., hierarchical regression analysis), may also reflect a bias toward theory development, which may come at the heavy expense of not being able to develop a cumulative body of meaningful empirical results. Although theory development is critical to the development of a discipline, a proliferation of theories and concepts can impede the accumulation of knowledge (Pfeffer, 1993). Researchers should focus as much attention on generating a cumulative body of accurate and meaningful estimates of effect sizes as on generating new concepts and theories (Cohen, 1994; Pfeffer, 1994; Schmidt, in press). As our earlier discussion indicates, we believe good theoretical work is needed. However, it might be useful to focus more on

synthesizing and organizing existing conceptual work into a more coherent theory with a greater number of specific, testable propositions to guide empirical work.

We are struck by the difference in emphasis between empirical research in management and that in a related field like labor economics. Both have well-developed theoretical traditions, but there is much more emphasis and respect in labor economics for careful and repeated efforts to improve empirical estimates of a theoretical relationship. A simple example, one analogous to the HR–firm performance question, would be the voluminous empirical literature that focuses on the effect of unionism or education on wages. Though in its best form it is rigorously informed by theory, this work rarely develops new theory. It is respected because when done well it provides a more accurate test of existing theory, and therefore improves cumulative knowledge on the subject. It is also respected because the subject itself is considered important, independent of the theory. The emphasis on unbiased estimates of effects, the inherent meaning of the measures, and the underlying importance of the subject go hand in hand. There is also much research in management that focuses on phenomena of more than theoretical interest. The HR–firm performance relationship is just one example. Theory development is always helpful, but we encourage an equal appreciation for empirical work that provides better and more meaningful tests of the theoretical frameworks already available.[4]

How Should Effectiveness and HR Be Measured?

The preceding discussion makes clear our preference for the use of effectiveness measures that have natural, meaningful metrics (e.g., shareholder return, profits, organizational survival, productivity, cycle time, customer complaints). The appropriate dependent variable will vary with the level of analysis, but in each case the focus should be on variables that have inherent meaning for a particular context. At the corporate level, capital market measures of performance are generally considered more comprehensive than contemporaneous accounting-based measures of profit (return on assets or equity). For example, a firm that has emphasized growth at the expense of current profits might have very different accounting measures than a high-profit company in a mature industry. However, market value measures that reflect the present value of future cash flows would reflect the profit potential of the high-growth company, and the performance of the two companies would be valued more similarly.

[4] We do not wish to overstate the degree of consensus in the union-wage and education-wage literatures. These (and other literatures, such as those on the effects of minimum wage laws) contain considerable debate—reflecting competing theoretical explanations—regarding the actual point estimates, even though the estimated relationships are much more narrowly defined than is the norm in much management research. Our point, however, is that these debates focus on obtaining point estimates in meaningful units, and there is perhaps more of a sense of progress in cumulating results in these other empirical literatures.

Although studies that use the firm as the exclusive unit of analysis provide the most generalizable and direct test of the relationship between HR and firm financial performance (Huselid, 1995; Huselid & Becker, 1996), to date they have provided little insight into the process by which this value is created. Moreover, to the degree that researchers attempt to compare firms that differ with respect to industry, size, and so forth, they need to take pains to control for these and other factors that might be confounded with HR and related to market value. Researchers also need to give careful thought to the meaning of HR measures at the corporate level because HR practices often differ substantially across business units and facilities within a corporation, particularly as diversification and size increase.

Alternatively, multifacility studies within a single industry group (e.g., Arthur, 1994; Delery & Doty, this issue; Ichniowski et al., 1994; MacDuffie, 1995; Youndt et al., this issue) or company (Banker, Lee, Potter, & Srinivasan, this issue), and case studies of single firms or plants (Banker, Field, Schroeder, & Sinha, this issue) provide a clearer, if more narrow, picture of the mechanisms by which HR systems might create value. Capital market measures of performance are not available at the facility level, but there are generally other meaningful measures such as cycle time, customer satisfaction, productivity, scrap rates, and so forth that are conceptually linked with firm performance. Similarly, although capital market measures are not typically available at the business-unit level, measures such as growth, market share, and perhaps profits may be available.

In the absence of capital market measures, however, conducting research in a diverse sample of business units having different objectives may in some cases move a researcher away from a standard metric. Some units may be focused on profitability, but others are striving for market share or growth. If one set of HR practices is very helpful in contributing to profitability, but not very helpful in generating growth, while a second set of HR practices relates negatively to profitability, but positively to growth, an empirical study will probably find little relationship between HR and unit performance if each unit's effectiveness is defined in terms of profitability or growth alone.

Instead, it may be necessary to interject some subjectivity into the measurement of effectiveness to measure how effective a given unit has been in achieving its own key objectives (Campbell, 1977; Kahn, 1977; Mahoney & Weitzel, 1969; Tsui, 1990). Therefore, a unit with low profits and high growth would receive a high score on effectiveness if its key objective was growth. A unit with the same profits and growth could receive a low score if its key objective was profitability. One key to using such an approach would be to demonstrate high interrater agreement in assessments of effectiveness (and in the dimensions of effectiveness that are selected).[5]

[5] We recognize that different constituencies may have very different notions of which organizational goals are most important and therefore, consensus among all constituencies on all goals is not realistic (Perrow, 1961). We also recognize that estimating the utility of attaining different goals in different organizations and making comparisons is subject to numerous pitfalls (Hannan & Freeman, 1977).

We noted previously that researchers do not necessarily focus on the same HR practices when studying HR systems and their links with organizational performance (see Table 2). These differences make it more difficult to cumulate findings. Even when the same HR practices are included in different studies, researchers may still use different measures, further hindering efforts to cumulate findings. For example, although the concept of contingent pay is included in studies by MacDuffie (1995), Huselid (1995), and Arthur (1992), its measurement differs in each case. Huselid used the proportion of the workforce covered by profit sharing, gainsharing, and merit pay, whereas Arthur asked what percentage of employment costs was accounted for by bonus or incentive payments. Although both approaches have merit, and meaningful substantive relationships should not be specific to particular ways of measuring a construct, it may be time for researchers to focus more on standardization and replication in measuring HR. (One means is to have different researchers jointly design measures. See Latham, Erez, and Locke [1988] for an example.)

Obtaining More Robust and Valid Findings

Future work on the strategic perspective must elaborate on the black box between a firm's HR system and the firm's bottom line. Unless and until researchers are able to elaborate and test more complete structural models—for example, models including key intervening variables—it will be difficult to rule out alternative causal models that explain observed associations between HR systems and firm performance. Our call for papers for this special issue laid out a range of effectiveness measures for this very reason, although, as Table 1 indicates, no one study looked at both firm-level performance outcomes and either facility or business-unit performance outcomes. The best we can do is look at the group of studies and say that HR was linked to performance at both the firm and facility level. The fact that none of the studies used business-unit-level outcomes may indicate the difficulty of measuring performance at this level. There is clearly a need to fill in this gap at the business-unit level and to pay attention not only to traditional financial outcomes, but also to intermediate and process-related criteria that indicate how financial results are achieved (see, for example, Kaplan and Norton's [1992] "balanced scorecard" approach).

Without intervening variables, one is hard pressed both to explain how HR influences firm performance and to rule out an alternative explanation for an observed HR–firm performance link such as reverse causation. To take a simple example (indeed, one that ignores internal and external fit considerations), the fact that profit sharing is associated with higher profits can be interpreted in at least two ways: profit sharing causes higher profits, or firms with higher profits are more likely to implement profit sharing. However, if it can be demonstrated that employees in firms with profit sharing have different attitudes and behaviors than those in firms without profit sharing and that these differences also translate into different levels of customer satisfaction, productivity, speed to market, and so forth, then research-

ers can begin to have more confidence in the causal model. Obviously, collecting such data will be a major undertaking because they will need to come from multiple sources. Again, none of the studies included here were able to do this.

Past work has emphasized alignment with corporate or business strategy, although recent reviews suggest that there is not a great deal of empirical support for the existence of such contingencies (Gerhart et al., 1996; Pfeffer, 1994; but see Gomez-Mejia and Balkin [1992] for more supportive findings). In view of Table 1, tests for such contingencies may hold more promise as the focus moves away from a broad corporate strategy to either an industry-specific (Youndt et al., this issue) or firm-specific context.

It may very well be that the source of the HR effect on firm performance and its inimitability is an "idiosyncratic contingency" (Huselid & Becker, 1995). Namely, HR systems only have a systematic impact on the bottom line when they are imbedded in a firm's management infrastructure and help it solve real business problems such as product development cycle times, customer service, and so forth. The particular form of these problems, and more important, the appropriate alignment of the HR system, are much more firm-specific than corporate strategies of cost leadership or differentiation.[6] A properly aligned HR system would represent a core capability (Stalk, Evans, & Shulman, 1992) and become a form of organizational capital (Tomer, 1988). Cappelli and Crocker-Hefter (1996) provided several intra-industry case studies and reported that their comparisons revealed no best practice; rather, each firm had a distinctive HR system that represented a core competency for that particular organization. This argument also implies that the multifirm-multiindustry studies required to capture variation in corporate strategies are not well suited to revealing the presence of these idiosyncratic contingencies.

To the extent that the appropriate alignment of an HR system with a particular firm's business problems is idiosyncratic and complex (i.e., multivariate and nonlinear), there would be no best practice in the sense that the term has been used in this literature. Indeed, this would suggest a very strong contingency that largely turns on the ability of a firm to align its HR system with its unique business problems or operating initiatives. This interpretation suggests the need for deeper qualitative work on the array of contingency factors and the potentially complex and nonlinear interactions among them that determine alignment. It may also imply a different research focus. Prior work tends to measure HR policies and to draw inferences about alignments and contingencies based on the effects of those policies combined with

[6] This discussion is similar to the debate over situational specificity of empirical relationships (e.g., selection predictor validities) in the meta-analysis and validity generalization literatures. Recent work questions the underlying statistical assumptions of the Hunter-Schmidt meta-analysis model and suggests that situational specificity may be found more often using different models (Erez, Bloom, & Wells, 1996).

other policies or strategies (interaction terms). However, if alignments and contingencies are theoretically important, empirical work should measure these theoretical constructs directly. These alignments would be very difficult to measure across firms and industries, but to the extent these contingencies are indeed idiosyncratic, finding a "universal" contingency cross-sectionally would depend on using a measure of this type.

Specification and Measurement Errors

Our emphasis on building a cumulative literature of accurate point estimates of the HR–firm performance highlights the importance of two methodological issues in this research. Specification errors occur when estimation models omit variables that covary with the HR system and also influence firm performance. Depending on the performance measure, these may include industry, size, business strategy, capital structure, and the quality of management in areas other than HR (e.g., finance and marketing). Although the concern typically focuses on estimates that are *positively* biased, it is equally plausible that prior estimates have underestimated the true relationship. These sources of heterogeneity bias are typically addressed through use of a more comprehensive set of control variables. However, if in principle these omitted variables are measurable, they are not always accessible. If these omitted variables vary across firms, but are relatively fixed over time, longitudinal data can be used to produce "fixed effects" estimates that may be more accurate.

An alternative means of controlling for specification error is to select a sample that is homogeneous with respect to potential omitted variables. Although this approach has some costs in terms of external validity, it can be a useful way to avoid comparing apples and oranges. Table 1 indicates that both approaches were used in the present set of studies.

Random measurement error (unreliability) in HR systems measures will also tend to bias regression coefficients. Future research would benefit from the use of multiple raters from each organization, business unit, or facility studied, particularly where subjectivity or judgment is required. To the extent that prior work has been based on measures with less-than-desirable reliability characteristics, estimates of the HR–firm performance relationship are probably understated. Huselid and Becker (1996) illustrated this point. They used a two-period panel to estimate the effects of both heterogeneity bias and random measurement error in HR systems measures and found the two forms of bias largely offset each other. First difference (fixed effects) estimates of the HR–performance relationship were similar to cross-sectional estimates when the former were adjusted for random measurement error.

Another form of specification error, commonly referred to as method bias, can occur if one respondent from each firm provides information on both HR and performance, and firm performance is measured subjectively. The respondent may be systematically biased upward or downward in reporting both (especially as questions become more evaluative or as HR practices come to be viewed as best practices). One way to reduce such problems is

to collect HR and performance information from different respondents (cf. Youndt et al., this issue). Even when firm performance is based on objective financial data, a simultaneity bias may arise if a respondent makes an inference about the nature or value of HR practices in response to the level of firm performance.

Diffusion

At times, there appears to be a major "disconnect" between what the research literature says that firms should do and what firms actually do. If, for example, variable pay, extensive training (in multiple areas), and employee involvement in decisions are associated with positive outcomes, why doesn't everyone engage in such "best practices"? One generic explanation is that there needs to be better communication between the academic and managerial communities so that research findings can have a greater influence on actual policy. This point is undoubtedly part of the explanation. In addition, institutional theories suggest that efficiency is only one explanation for why practices do or do not diffuse.

Another part of the story may be that managers often know something that researchers do not know. A simple implication for researchers, then, is that more effort should be devoted to finding out what managers are thinking and why they make the decisions they do. This suggests a need for deeper qualitative research to complement the large-scale, multiple-firm studies that are available.

It also suggests the need for more attention to studies that have program adoption and survival as dependent variables (Gerhart et al., 1996; Johns, 1993; Kochan & Osterman, 1994; Pfeffer, 1994). It may be that certain HR programs have the potential for high payoffs, but are also risky in the sense that they are prone to failure. It may be that use of convenience samples leads to an overrepresentation of the successes and an underrepresentation of the failures, and thus the risks and expected value, of implementing certain programs. Perhaps managers have better estimates of real risk and factor these into their decisions, which would help explain divergence between research and practice. Again, however, researchers will not know the answer without devoting more effort to studying the factors that influence managers' decisions to adopt and terminate practices.

POLICY IMPLICATIONS

With the exception of executive compensation issues, subjects of direct import for CEOs and other senior line managers have typically not been a focus of HR research. As Table 1 indicates, this situation has changed. The studies included here provide support for the strategic impact of HR on key performance outcomes, and we hope this special issue will hasten the development of a cumulative body of knowledge that offers a new strategic lever for senior management.

What are the policy implications of this work? The most fundamental implication is that the choice of HR systems can have an economically

significant effect on firm performance. Research is just beginning to establish the plausible range of these effects, but early work indicates that reasonable changes in an HR system can affect a firm's market value by $15,000–$45,000 per employee (Davidson et al., this issue; Huselid & Becker, 1995, 1996) and can affect the probability of survival for a new firm by as much as 22 percent (Welbourne & Andrews, this issue). Other research has established strong HR effects on intermediate outcomes (see Table 1) that are consistent with an ultimate bottom line effect. In sum, at multiple levels of analysis there is consistent empirical support for the hypothesis that HR can make a meaningful difference to a firm's bottom line.

Thus, extant research suggests that HR systems have considerable economic potential, but there is little consensus on how to achieve that potential. There appears to be no best practice magic bullet short of organizing a firm's HR system from a strategic perspective. Therefore, both HR system and HR function must have as their principal focus a set of properly aligned HR policies that solve business problems and support the firm's operating and strategic initiatives. Although the empirical research has been less than compelling thus far, the theoretical and practitioner literatures suggest that simply instituting best-in-class HR programs and practices from a functional perspective will not have the type of strategic impact that a properly configured HR system will. A set of practices that have individual, positive effects on performance may be a necessary, but not sufficient, condition for a larger effect on firm performance.

This perspective implies that firms should very carefully evaluate their decisions to outsource HR responsibilities. We have argued that some aspects of the HR function are appropriately judged as cost centers (e.g., benefits administration) but that other elements of an HR system create value as part of a firm's strategic infrastructure. Although a decision with respect to outsourcing might be straightforward at the two ends of the cost-value creation continuum, for many elements of an HR system the decision is not so clear. In some respects, as a firm moves toward a strategic perspective on the HR system, HR activities like recruiting and hiring, which might be considered best outsourced when measured against a cost standard, might well be retained if their alignment with the remainder of the HR system is a critical source of value for the entire system. This situation would be more likely when it is the entire HR system that is the source of value, and the core competencies required to create this value are largely firm-specific and not easily replicated through outsourcing.

With the emergence of a strategic role for human resources, the HR function and indeed the traditional discipline of human resources are at a crossroads. If HR functional managers ignore this opportunity, the HR function will be left with traditional transaction and compliance activities, forced to justify itself on a cost basis, and in many cases will be outsourced (Brenner, 1996; Corporate Leadership Council, 1995; Csoka, 1995; Stewart, 1996). The research that is the focus of this special issue points to the importance of the HR system, not necessarily to the importance of the HR function. If HR

functional managers do not take advantage of this opportunity, firms will no doubt find others in the organization who will.

The leadership of this strategic HR role in organizations will also be reflected in the competition for the intellectual leadership of this emerging area. The recent spate of special issues on the subject reveals not only its prominence, but also the disciplinary range of intellectual interest in the topic. We are concerned that if the traditional HR discipline does not embrace the wider interdisciplinary approach required to produce a meaningful contribution to this area, other disciplines will, and HR as a discipline runs the same risk as the HR function of being marginalized.

In his 1993 Presidential Address to the Academy of Management, Donald Hambrick asked the question, What if the Academy actually mattered? (Hambrick, 1994). He argued that "the major debates regarding business and management are framed almost entirely by lawyers and economists" (1994: 15), and he suggested that the reason management scholars did not have more influence was because of "our own failure to present ourselves—our body of knowledge and our perspective" (1994: 15) and that we needed to focus more on conducting research and drawing policy implications that "make a significant contribution to the solution of major problems facing our society and its value-creating enterprises" (1994: 15). We hope this Special Research Forum on Human Resource Management and Organizational Performance helps us move in that direction.

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Brian Becker is a professor of human resources at the School of Management, State University of New York at Buffalo. He received his Ph.D. degree in industrial relations from the University of Wisconsin-Madison. His research focuses on the impact of human resources and labor relations systems decisions and firm performance.

Barry Gerhart is the Frances Hampton Currey Professor of Organization Studies at the Owen Graduate School of Management, Vanderbilt University. He received his Ph.D. degree in industrial relations from the University of Wisconsin-Madison. His work is in the areas of human resource strategy, compensation and rewards, and staffing.