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Theorizing Human Resource Management and the Firm's Demand for HRM Practices

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Abstract. Drawing on the economics and industrial relations literatures, this paper argues that the conventional conceptualization and theorization of human resource management, and the attendant empirical literature on the HRM-firm performance relationship, are likely to suffer from significant problems of mis-specification and limited domain. A new theoretical framework is advanced that generalizes the HRM concept, models the linkage between HRM practices and firm performance (the “black box”), generates an HRM input demand function and demand curve, and demonstrates how these analytic tools can explain major features of the distribution of HRM practices among firms and over time.

In this paper I present a new approach to theorizing human resource management (HRM).

The theory is economics-based, but with significant roots in early industrial relations.

This theory makes two important contributions. The first is to demonstrate that the current mode of theorizing HRM is subject to potentially significant problems of limited domain and mis-specification. The second contribution is to provide a new conceptual framework for analyzing and understanding firms' choices of human resource management practices. The chief theoretical innovations are twofold. First, I use transaction cost theory to analyze whether a firm coordinates HRM through supply and demand in the external labor market or management command and administration in the internal labor market. Among other insights, I demonstrate that a large number of alternative HRM systems, including one with no HR department or formal HRM practices, are equally “best practice” and “high performance.” Given that firms can maximize performance with many different employment systems, I next model the determinants of this choice. To do so, I use the microeconomic theory of factor input demand, treat HRM practices as an input into production, and derive an *HRM demand*

curve and *HRM demand function*. These tools yield numerous implications and hypotheses, some of which contradict conventional propositions in the HRM field.

Defining and Conceptualizing HRM

Fruitful theorizing of HRM can only proceed with a clear, consistent and robust definition and conceptualization of what HRM is and does. In the words of David Guest (1997: 264), in both theoretical and empirical work “we need to have a clear view of our independent variable.”

Does such exist? Guest concluded not, arguing “we seem to have only confusion.” Paauwe and Boselie (2005: 69) in a more recent review of the literature agree, concluding “There appears to be no consensus on the nature of HRM.” Part of the reason is that HRM is used with at least five distinct meanings (listed from broadest to narrowest):

- the science and practice that deals with the nature of employment relationships (Dulebohn, Ferris and Stodd, 1995)
- the management of people in organizations (Boxall and Purcell, 2003)
- a unitarist, human capital approach to people management (Storey, 2001)
- a strategic, high performance/high involvement approach (Delery, 1998)
- the policies, programs and activities associated with a human resource department (Ulrich, 1998).

If one is going to theorize HRM, the relevant question is: which one of these five concepts is the object of theorizing? The problem for theorizing is more difficult yet, for one also has to distinguish HRM from strategic human resource management (SHRM). The difference in titles presumably signals the key difference – SHRM is strategic and

HRM is not, suggesting that the fourth definition above (or some variant) is actually SHRM and one of the other four applies to HRM. But many authors maintain that a key feature of HRM is precisely that it is a strategic approach to people management (in contradistinction, say, to personnel management), so considerable blurriness remains. To better separate the two, some writers (e.g., Becker and Huselid, 2006) argue that SHRM deals with *organizational* performance and *systems* of practices and HRM deals with a individual employee performance and individual HRM practices. While certainly a plausible distinction, it also seem to imply that the field will have two different (but perhaps overlapping) theories – one for HRM (micro) and another for SHRM (macro).

Viewed from another perspective, the conceptualization of HRM does seem to enjoy a high degree of consensus. Regardless of other differences in the definition of HRM, most academic writers agree that a common feature of the HRM “independent variable” is that it is synonymous with the concept of *practices*. Wright, Dunford and Snell (2001: 703) define “practices” as “those HR tools used to manage the human capital pool.” Exactly what qualifies as an HR tool is not well specified in the literature, but most often writers define HRM practice as some type of formal/tangible HR method, technique, activity, program, or structure that management creates and administers to manage the workforce. Examples include a formal human resource (HR) department, employee selection tests, job analysis, training programs, pay-for-performance compensation methods, and promotion by seniority. Evidence in support of the “practice” conception of HRM is widespread. Wright and McMahan (1992: 297) state in their influential article, for example, that HRM “consists of the various practices used to manage people in organizations, and these practices have commonly been grouped into

subdisciplines of selection, training, appraisal, and rewards....” while Paauwe and Boselie (quoted above, p. 69) observe, “the majority of studies define HRM in terms of HR practices or systems/bundles of practices.” Lepak and Snell (1999) define alternative systems of practices as “HRM architectures.”

If human resource practices are taken as the *sine qua non* of HRM, then it would seem that the job of an HRM theory is to explain and predict the organization’s choice of these HRM practices and associated bundles. This matter is complex and challenging, since many dozens of different HRM practices exist and firms can mix and match them in a practically infinite number of permutations.

It turns out, however, that the dominant method of conceptualizing HRM/SHRM, reflecting in part its reliance on the resource-based view (RBV) of the firm for a theoretical foundation, predisposes the answer toward one particular architecture, and variants thereof. The presumption of HRM/SHRM is that firms choose (or should choose) HRM practices in order to achieve maximum firm performance. Of the many performance measures utilized in the literature (turnover, productivity, etc.), profitability is generally recognized as the most fundamental and important since in a market economy survival and growth rest upon it (Boxall and Purcell, 2003: 7-8). Profits, we know, are the difference between revenue and cost. One way to boost firm performance, therefore, is to lower cost, the other is to increase revenue (or “value”).

At this point enters the distinction between personnel management (PM) and human resource management. The conventional portrayal is that personnel management (and the closely associated field of industrial relations (IR)) take a pluralistic approach to the employment relationship, look at employees as an expense, and are practiced with a

reactive/transactional focus on operational efficiency and cost minimization, while human resource management takes a unitarist approach to the employment relationship, looks at employees as an organizational asset (human capital), and are practiced with a strategic (proactive) focus that seeks to develop, incent and deploy a firm's human capital so as to maximize long-term profits (Beer and Spector, 1984; Dulebohn, Ferris, and Stodd, 1995).

Given this conceptualization of HRM/SHRM, the question then becomes: what bundle of people management practices does the best in fostering a unitarist/human capital/high performing employment system?, and the most common answer given is some variant of what has become known as a *high performance work system* (HPWS). The linchpin of an HPWS is commonly thought to be some form of employee involvement (Cappelli and Neumark, 2001), which led McMahan, Bell and Virick (1998: 197) to state “what we call strategic human resource management may well be ‘second generation’ employee involvement with a relationship to firm strategy and performance.” Also core features of an HPWS are practices such as mutual-gain systems of compensation, self-managed teams, careful employee selection, job security policies, formal methods of dispute resolution, and reduction in status differentials.

Of course, the question remains how these HRM practices (allegedly) generate high firm performance. This link is frequently referred to as the “black box” since it has tended to remain opaque and under-theorized (Boxall and Purcell, 2003). Increasingly, however, this missing link is answered with what is sometimes called “AMO theory” (Appelbaum, Berg, Bailey and Kallenberg, 2000; also see MacDuffie, 1995). This theory argues that best practice HRM leads to higher firm performance because it augments and

enables the abilities, motivation, and opportunities of the firm's human capital, which translates into higher productivity, product quality, customer service, etc.

In empirical studies of the HRM-firm performance relationship, the dependent variable is therefore some measure of organizational performance and the independent variables are a set of advanced/formalized HRM practices typically associated with an HPWS. On this matter, Purcell and Kinnie (2007: 538) observe, "The lists [of independent variables] appear to emerge from sets of practices normally associated with activities undertaken by well-staffed, sophisticated HR departments in large firms often linked to so-called 'transformational' approaches to the management of labor."

The most important theoretical rationale for this specification of HRM comes from the resource based view of the firm. Allen and Wright (2007: 90) state, for example, "the resource-based view has become the guiding paradigm on which virtually all strategic HRM research is based." In the 1980s, the dominant approach to strategy came from industrial organizational economics, particularly the work of Michael Porter, and sought to theorize how firms could position themselves for competitive advantage vis a vis their opportunities and threats in the external environment. The RBV, most influentially articulated by Barney (1991), shifted the focus and sought to theorize how firms can capture competitive advantage by developing and exploiting valuable, rare, inimitable, and non-substitutable resources within the organization. The common theme in the HRM/SHRM literature is that traditional sources of competitive advantage, such as economies of scale, new technology and differentiated products, are eroding due to shorter product life cycles, greater competition in product markets, and more mobile capital and technology, leaving firms' human capital as one the last and best sources of

sustained competitive advantage. The role of HRM/SHRM, therefore, is to establish a system of HRM practices that transforms a firm's employees from commodities and "hired hands" that provide negligible competitive advantage and middling work performance to human assets that provide sustained competitive advantage and considerable value-added through heightened work motivation, expanded job opportunities, and unique and hard-to-imitate skills, knowledge and abilities. Thus, in the words of Allen and Wright (pp. 91-2), "the RBV provided a legitimate foundation upon which HRM researchers could argue that people and the human resources of a firm could in fact contribute to firm-level performance and influence strategy formulation."

Although the RBV provides the central pillar of theory for the conventional conceptualization, other strands of theory also play a role. Schuler and Jackson (2001), for example, list thirteen different theoretical perspectives that inform HRM research. Among these, a frequently cited contribution is by Delery and Doty (1996).

They distinguish three different theoretical perspectives on HRM: universalistic, contingency, and configurational. The universalistic perspective argues that there is a set of HRM practices that are always and everywhere "best practice" in the sense they promote superior firm performance in all situations. Pfeffer (1998: 64-65), for example, lists seven such HRM practices – employment security, selective hiring of new personnel, self-managed teams/decentralized decision-making, pay-for-performance, extensive training, reduced status differentials and extensive information sharing, and argues that together they can lead to increased profitability of 40 percent or more (p. 32). These seven practices are among the core people practices identified with an HPWS and, consequently, "best practice" HRM and HPWS have become closely associated.

The contingent approach suggests there is no universal “one best way” to do HRM; rather, the best performing set of HRM practices are contingent on the firm’s particular business strategy and other external and internal contextual variables (e.g., industry, technology of production, economic environment, workforce characteristics, legal and union influences). Rather than “best practice” this approach to HRM is called “best fit.” Of the various contingent variables, HRM theorists have focused most heavily on the firm’s choice of business strategy. Different typologies of business strategies have been developed, such as “prospector vs. defender” and “cost minimization vs. product differentiation,” and theorists have then sought to identify the HRM practices that most closely align with and support these alternative strategies (e.g., Arthur, 1994). A central idea generated from this line of research is the notion of “vertical fit” – that is, the firm’s HRM practices should maximally support achievement of the firm’s business strategy.

The configurational approach argues that HRM practices should not be looked at individually but as a system. The key idea is that there exist complementarities among HRM practices and thus firms need to mix and match HRM practices so they not only maximally support the overall business strategy but also so they maximally support each other and generate the most synergy. In effect, HRM practices are not additive but interactive. The central idea derived from the configurational model is “horizontal fit” – that is, the firm must look at HRM practices as a system and choose the individual components so they are create the most synergistic system possible.

The configurational approach is complementary to either the universal or contingent approach; the latter two, however, potentially conflict in their theoretical implications for HRM. As some authors have noted, for example, a contingent-based

theory can lead to the conclusion that high performance is generated by a “low road” HRM system or one that is highly externalized and makes use of few HRM practices (Legge, 2005; Lepak and Snell, 2007).

In practice, the main current of HRM theorizing has sought to integrate these three perspectives into a holistic model that retains universalistic best practice HRM at the core (based on RBV/AMO theory) but with the recognition that the precise choice of HRM practices will vary from firm-to- to firm, and among employee groups within firms, with differences in business strategies and other contextual factors. The net result is that the main body of HRM theory points to an HPWS-type employment system as the best candidate for high performance, but with recognition that this relationship is moderated by strategic and contextual factors and does not uniformly apply to all firms and work groups (Becker and Huselid, 2006; Datta, Guthrie, and Wright, 2005;). This presumption is reflected in HRM-firm performance empirical studies where the predicted “main” effect is a *positive* relationship between HRM and firm performance, moderated by the indirect effect of the firm’s strategy and other such variables (Martín-Alcázar, Romero, and Sánchez-Gardey, 2005). Although the findings of empirical studies are diverse and not entirely consistent, the median conclusion is that some core group of advanced HPWS-type HRM practices are indeed associated on average with higher firm performance, while the role of business strategy and other contextual factors is more uncertain and difficult to isolate (Combs, et. al., 2006; Becker and Huselid, 2006).

All things considered, then, what is the answer in the literature to the question: what is HRM? The review just provided suggests, on one hand, that HRM has multiple but partially overlapping conceptions and no single definition can be given that covers all

writers and studies. This review also suggests, on the other hand, that both in theory and empirical work one conception of HRM dominates the others. While lip service is given to the idea that HRM is the generic practice of people management, most (but not all) writers rather quickly proceed to telescope the concept into a particular philosophy and approach to people management built on an integrated system of advanced practices that attains maximum organizational performance through a mix of strategic, unitarist, human capital, and high involvement methods (Guest, 1997). That is, positively and/or prescriptively the dominant conception is: $HRM \approx HPWS$. Marchington and Zageleyer (2005: 4) attest to this fact when they observe, “While it is rare to state this explicitly, most studies looking at the HRM-performance linkage use some variant of the high performance model.” Further, this model of HRM is frequently implicitly or explicitly equated with the strategic role, functions and activities of an HR department (Ulrich, 1998; also noted by Becker and Huselid, 2006: 922).

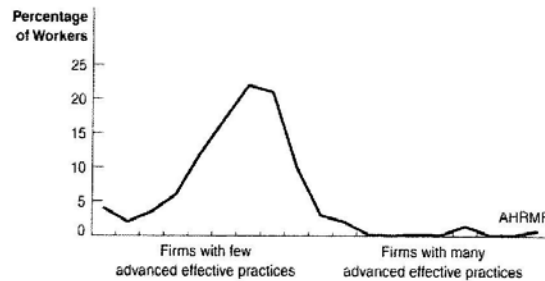
Problems of Mis-Specification and Restricted Domain

Is the unitarist/HPWS version of human resource management fruitful for theorizing? I argue it has serious limitations. In particular, it suffers from significant restricted domain and leads to mis-specification of both theoretical and empirical models. These problems have been recognized in the literature (e.g., Boxall and Purcell, 2003; Wright, Snell and Dyer, 2005), but have not been fully appreciated or dealt with.

Problems of restricted domain and mis-specification in HRM theorizing are made clear with the help of Figures 1 and 2. Figure 1 shows a frequency distribution of HRM practices for a large sample of American companies. The data come from a 1994

nationally representative survey of over two thousand workers conducted by Freeman and Rogers (1999). The respondents were asked whether their organization currently used each of ten different HRM practices, including several items usually considered “best

Figure 1. Distribution of Firms by Advanced HRM Practices



SOURCE: Reprinted from Richard B. Freeman and Joel Rogers, *What Workers Want* (Ithaca: Cornell University Press, 1999), 96. Copyright © 1999 by Russell Sage Foundation. Used by permission of the publisher, Cornell University Press.

practice” (e.g., an employee involvement program, a formal dispute resolution system). Freeman and Rogers combined the ten items into a composite index number and called it a measure of “advanced human-resource practices.” Graphing the data yields the distribution shown in Figure 1.

This HRM frequency distribution resembles a bell-shaped curve but with considerable skewness in the right-hand tail. A significant minority of firms, located in the left-hand tail, used very few or even none of these ten formal HRM practices (e.g., nearly one-third of workers said their firm had no personnel/HR department); the majority used an intermediate number, while a relatively small proportion of firms scattered over the right-hand tail used many of the ten HRM practices, including most or all of the “advanced” practices (e.g., employee involvement). Interestingly, plotting data on “HRM expenditure per employee,” collected by the Bureau of National Affairs (BNA,

2006) for a large sample of firms, exhibits much the same distribution, suggesting the Freeman & Rogers data is roughly representative.

Figure 1 poses two serious challenges for the dominant conceptualization of HRM/SHRM. First, if HRM is defined and conceptualized as some variant of an HPWS, then a theory of HRM (so defined) must of necessity suffer from a highly restricted domain of relevance. Freeman and Rogers do not report the percent of firms at each point in the distribution, nor do they suggest a dividing line to separate non-HRM/HPWS firms from those using HRM/HPWS. Nonetheless, inspection of Figure 1 suggests that HPWS-type firms are surely a modest-sized minority of the total, for they reside in the skewed right-hand tail that has relatively few observations. Other survey evidence for the UK and USA confirms this conclusion (e.g., Legge, 2005; Marchington and Zagelemyer, 2005). In effect, then, HRM/SHRM becomes a theory of the right-hand tail of the distribution which, quantitatively speaking, makes HRM the theory and study of a special case. This is acknowledged by Becker and Huselid (2006: 904) who say, “This current approach to theorizing... implies very little variation or differentiation of the HR architecture,” and is implied by Marlow (2006) when she chose to title her article: “Human Resource Management in Smaller Firms: A Contradiction in Terms?” This restricted domain problem is actually worse than Figure 1 suggests, for the right-hand tail diminishes to near-zero in earlier historical periods (e.g., pre-World War I America) and for many other countries today with different cultural, economic and legal environments. This conceptualization, therefore, makes HRM a phenomenon limited largely to the post-1970 period, in larger-sized firms with a formal HR function, and in North America and to a lesser degree other advanced countries (Brewster, 2004).

Alternatively, one could define HRM generically to include all people management practices, which then makes HRM coterminous with the entire distribution. The problem here is that most forms of HRM/SHRM theory, being based on RBV principles, predict that most/all firms will maximize performance by adopting a package of “advanced” HRM practices along HPWS lines. Since only a minority of firms in Figure 1 actually adopted such an HRM package, a huge and troubling gap exists between what HRM theory predicts and what the firms actually do.

One possibility is that the theory’s prediction is wrong; perhaps, for example, a “low road” or “control” HRM system actually is superior in some/many situations for firm profitability.

Another possibility is that the theory is correct but surveys and empirical studies mis-measure the HRM practice variable, leading to a false inference (Wall and Wood, 2005). For example, some HPWS practices are general management policies or approaches, such as job security, careful selection and a positive employee relations climate, which may not be captured by any formal, specific HR functional “tool” asked about in standard surveys. A firm (e.g., a small-sized retailer, a large manufacturing firm a century ago) could be in the left-hand tail of the HRM frequency distribution with few measured practices (e.g., no HR department, written employment policies, or formal interview process) yet nonetheless have an informally implemented high performance-type labor management system. As one example, the Baldwin Locomotive Works (employment: 8,000) was widely cited around 1900 as having the most progressive and productive labor management system in American industry (with extensive job security,

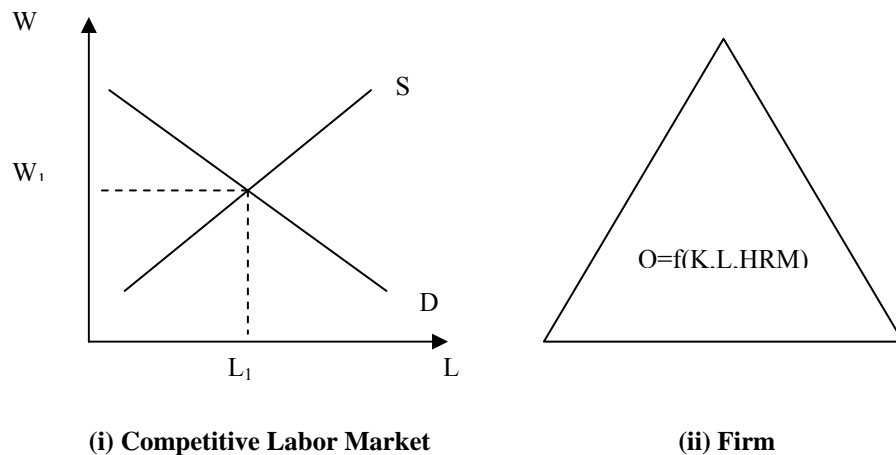
training, etc.), yet it utilized practically no formal HRM practices to implement these (Brown, 1995).

The third possibility is that the predictions of universalistic/RBV-based theories are correct but firms face huge adjustment costs and time lags in moving to an HPWS, in effect creating a very large-scale and long-lasting disequilibrium/market failure situation (Huselid, 1995). Pfeffer (1998: 29), for example, explains the large theory/practice gap with the “one-eighth rule” – despite the theory and evidence in support of HRM-firm performance principles, only one-half of employers believe in the people-profit connection; only one-half of this group will go beyond incremental, piecemeal change and put in place an entire HPWS system; and only one-half of these will maintain commitment to an HPWS over the long-run. Hence, although all firms would make more profit by being in the right-hand tail (in effect, collapsing the HRM frequency distribution around the HPWS model), due to problems of ignorance, lethargy, incremental implementation and lack of long-run commitment seven-eighths of firms fail to adopt an HPWS and therefore (allegedly) forego substantial amounts of profit. Empirical research suggests that the amount of foregone profit is potentially quite large – according to Becker and Huselid (2006: 907), a one standard deviation change in the HR system is worth 10-20% of a firm’s market value.

Figure 1 takes an empirical approach to illustrating problems with the conventional definition of HRM/SHRM. Figure 2 takes a theoretical approach. Figure 2 depicts in panel (i) a competitive labor market in which demand (D) and supply (S) determine the equilibrium wage (W) and employment level of labor (L) and in panel (ii) a hierarchically organized firm (or other kind of producing organization). The firm is

the location of production, depicted by the production function situated within it. The production function contains the usual factor inputs capital (K) and labor (L), but also a third factor input HRM. The variable HRM represents all types of formal/tangible human

Figure 2: Two Modes of Coordinating HRM



resource management practices (“tools”) used by firms, such as selection interviews and tests, training classes, employee involvement programs, benefits administration, and employee handbooks. These are considered inputs into production since more HRM practices presumably increase the effective utilization of labor and thus increase production (elaborated more later). These HRM practices are themselves produced by some process involving capital and labor, but this aspect is left implicit. The key consideration, however, is that because HRM practices have to be produced with real resources they carry an explicit cost to the firm.

Maximum profit requires that firms allocate and coordinate their labor input efficiently. As we know from institutional (transaction cost) economics, this can be accomplished through the use of two alternative coordinating mechanisms (and combinations thereof). The first is the market (“buy”), the second is management (“make”). The former takes place in the *external* labor market (ELM), the latter in the

internal labor market (ILM). The ELM is coordinated by prices, competition and demand/supply; the ILM is coordinated by management hierarchy, command/authority and the use of policy and administrative methods (Williamson, 1985).

Firms following an “externalization” HRM strategy rely on the external labor market as much as possible to coordinate and allocate labor for production. Delery and Doty (1996, Table 1), for example, list representative HRM practices that go with what they call a “market-type” employment system. Their list includes items such as: “Hiring done almost exclusively from outside the organization,” “No formal training provided,” “Very little employment security given,” “Employees given little voice in the organization,” and “Jobs are not clearly defined.” It will be noticed that this list of HRM practices is the polar opposite of the list of HRM practices usually considered as the hallmark of an HPWS, and is also the polar opposite of those HRM practices a number of writers have identified as universally best practice.

Firms following an “internalization” practice, on the other hand, rely on management coordination and administration to a substantial degree and minimize the overt influence of the external labor market. Illustratively, Delery and Doty list the following kinds of HRM practices as representative of an “internal” employment system: “Hiring mainly from within the organization,” “Extensive formal training,” “Great deal of employment security,” “Employees more likely to participate in decision-making,” and “Jobs very tightly defined.” These kinds of internal HRM practices correlate highly with the HRM practices in an HPWS and lists of universal best practices.

The potential for theoretical mis-specification of the HRM concept is now apparent. The human capital/ HPWS version of HRM is largely a mirror image of a

highly developed internal employment system. Theoretically, we know (further elaborated below) that employment systems can range along an entire spectrum, anchored at one end by a pure ELM and at the other end by a pure ILM. Yet the popular definition and conceptualization of HRM anchors the field toward one of these end points – the advanced ILM and a highly management-intensive employment model. This unbalanced treatment is recognized by Boselie, Dietz and Boon (2005: 73) who remark that HRM researchers take a “highly management-centric standpoint.” In effect, the popular conception of HRM locates the field in the right-hand tail of the HRM frequency distribution in Figure 1 and in Figure 2 where “make” dominates “buy” and the ILM in the right-hand part of the diagram greatly overshadows the ELM in the left-hand part.

Why has modern HRM gravitated toward this ILM-dominated, management-centric conception of its “independent variable?” On positive grounds, it is not unexpected that management scholars would center the HRM paradigm on the core subject of their discipline -- *management*, just as economists center their paradigm on markets and sociologists center their’s on social groups. In this respect, each discipline can be charged with having a restricted and mis-specified domain, perhaps excused on grounds of intellectual division of labor. Normative considerations, such as status-enhancement, ideology and greater career rewards, also play an important but perhaps less defensible role (Wall and Wood, 2005; Geare, Edgar, and McAndrew, 2006). HRM is particularly influenced by these normative considerations, given the long-standing marginal status and tenuous institutional position of the HRM field in both academia and industry (Kaufman, 2001), and the large-size opportunities for enhanced research funds and consulting/career income if key decision-makers come to believe HRM is critical to

business and national competitiveness. A glimpse of these normative factors at work is revealed in Delery and Doty's (1996: 802) remark that "SHRM has grown out of researchers' desire to demonstrate the importance of human resource management practices for organizational performance;" Wright, Dunford and Snell's (2001: 702) observation that, "Growing acceptance of internal resources as sources of competitive advantage brought legitimacy to HR's assertion that people are strategically important to firm success;" and Ulrich's (1998: 6) statement that "Theory enables HR to become a profession with a set of standards... Theory leads to respect.... Physicians have a theory..., architects have theories... HR needs theory..."

Theorizing Human Resource Management

I wish to now move beyond critique to the task of theory-building. The theory I construct endeavors to bridge the ELM focus of standard labor economics and the ILM focus of standard human resource management. Providing this intellectual bridge has been the historical *raison d'être* of the field of industrial/employment relations, and the theory to be constructed rests on insights from early IR academics and institutional labor economists, such as Commons, Bakke, Kerr and Dunlop. The theory itself is developed in two stages. In the first stage, I use insights from institutional (transaction cost) economics to theorize the correct specification of the concept of human resource management. Given this conceptualization of HRM, in the second stage I theorize the firm's demand for formal HRM practices (including HR departments, HPWS practices, etc.), using the neoclassical microeconomic theory of factor input demand. This two-stage theory generates a number of interesting insights and significant hypotheses.

Although the use of the “human resource” term goes back more than a century (e.g., Commons, 1893), it was only in the 1960s that it became a label for a field of study and functional management vocation (Kaufman, 2001). The origin the modern HRM term is traceable to a published lecture given in 1958 by labor economist/IR scholar E. Wight Bakke. The title of the lecture is “The Human Resources Function.” I cite Bakke’s article here because it provides the broad conceptualization for HRM that the field currently slights.

Bakke makes several relevant points. First, he defines the human resources function broadly and generically as (p. 6): “the managerial function of dealing with people (p. 4)” and, in particular, the tasks “related to the understanding, maintenance, development, employment, and integration of one of the basic resources of the company – its people” (p. 23). Bakke asserts that the human resources function must be more broadly conceived than the activities of the HR department. He states (p. 21), for example, “The tasks in the human resources function carried on by the employees of the company are necessarily performed by *all in the company who supervise the work of others*, not just people labeled with personnel or labor relations titles.” Bakke also says regarding the objective of the human resources function (p. 17): “the general job of management is to use resources effectively for an organizational objective” and then specifically ties it to profitability, stating that “the function... be conducted so that the organization operates in the black, certainly in the long run.” He also highlights the strategic aspect of the human resources function, stating it must “contribute to major decision-making in all areas of company operations an understanding of the human

factors... [and] represent the human resources interest both in decision-making, operations, and evaluation of results.”

To keep the terminology simple and consistent, I transition from Bakke’s label “human resources function” to the modern term “human resource management.” Nonetheless, it is useful to distinguish between two different conceptions of human resource management: Bakke’s broad, generic version and the current-day narrower HRM/SHRM version. The former will be denoted in italics as *Human Resource Management (HRM)*, the latter in non-italicized form as Human Resource Management (HRM).

Every multi-person firm, plant or other type of production unit must perform *Human Resource Management*; the same is true for any organization where production is carried out through the agency of an employment relationship. The *HRM* function is the generic process of coordinating the labor input in the production function inside the organization; it takes place, for example, in every organization where one person (the superior or “boss”) supervises and directs the labor of others (the subordinates or “workers”). In this guise, *HRM* happens in capitalist and socialist economies, in large and small firms, in profit and non-profit organizations, and in ancient and modern times.

The activity of *HRM* makes use of certain generic human resource practices and activities. These include acquiring, developing, rewarding, evaluating, governing and terminating the workers who provide the labor input. Importantly, each of these can be performed with *no* formal HR department, staff or practice/program. For example, a firm can recruit and select new employees by having a manager carefully look over walk-ins and choose one or the other; the shift manager can take a few minutes and show a new

employee how to operate a piece of equipment; and the employer can conduct performance management by personally watching subordinates and terminate poor performers with a one sentence order “You’re fired!”. In terms of the production function, the general task of management control and coordination of the organization, including the activity of *HRM*, is simply another of the myriad “jobs” required to produce the good or service and, hence, is subsumed as part of the general labor input variable *L*.

Sometimes, however, the coordination of the labor input is performed with the help of functional staff specialists trained in human resource management and organized into an HR department. Likewise, this coordination of the labor input is often facilitated by the use of formal labor management activities and practices, such as an employee handbook, a job application form, a half-day training session taught by a specialist, and a written annual performance evaluation. This narrower conception of the human resource function, including the *SHRM/HPWS* version, is denoted as *HRM*. The hallmark of this version of *HRM* is that it utilizes specialized staff and/or formal procedures and practices to help coordinate the labor input. This set of specialized staff and especially produced employment practices and activities is treated here as a separate factor input into production and, therefore, is represented by the variable *HRM* in the production function. It is often this conception of *HRM* practice that is utilized in regression studies of the *HRM*-firm performance relationship.

Production in a multi-person organization cannot proceed without coordination and control of the labor input, so positive output *Q* requires positive expenditure on *L* in order that various organizational members take part of their time and effort to collectively perform *HRM*. The same is not true, however, for *HRM*. The firm may get positive *Q*

with a zero value of HRM, or it may decide to invest in a positive level of HRM in the production function if top management decides the extra revenue gained from expenditure on HRM outweighs the extra cost.

This discussion brings us back to the external versus internal type of employment system and the issue of firm performance. It is theoretically quite possible and sometimes the case that organizations maximize performance by utilizing *zero* HRM. This would be the case, for example, where firms decide that “best practice” labor management (i.e., “most profits” labor management) is achieved with a completely external-oriented *HRM* system, implying no HR department and zero formal HRM practices. Were a researcher to come along and estimate the usual type of HRM-performance regression model (profitability as the dependent variable, HPWS-type employment practices as independent variables) for this sample of firms, the predicted sign on the HRM practice variables would be *negative* (not positive as usually assumed) since, by construction, expenditure on HRM in an external employment system adds more to cost than it generates in extra productivity and revenue.

Let’s consider the theory more closely. The question of an external versus internal employment system is akin to the “make versus buy” decision in institutional (transaction cost) economics. Commons (1934) was the person who invented the concept of the transaction, which he defined as a “legal transfer of ownership” (p. 55). Commons also noted (before Coase) that resources can be coordinated and allocated by two different mechanisms: markets and the price system and organizations and management. He called the former “bargaining transactions” and the latter “rationing/managerial transactions” I will substitute the more transparent labels: “market transactions” (MT) and

“organizational transactions” (OT). Coase’s contribution, subsequently elaborated and developed by Williamson (1985), was to observe that the choice of using a market transaction (buy) or organizational transaction (make) turns in part on which mechanism accomplishes the resource coordination/property rights transfer function at least cost.

Coase deduced that when market transaction costs are zero then all exchanges of property rights to productive resources will take place in markets and be coordinated by markets. Zero transaction cost arises, in turn, from assumptions of perfect information, perfect rationality, perfect partitionability/separability of property rights, and zero cost contract enforcement. A radical implication is that all firms (organizations), because they are a higher cost form of resource coordination, vertically disintegrate to the lowest possible level of economic organization – an economy of single person firms (e.g., family farms and independent contractors). Economists have traditionally called this model “perfect competition,” but Demsetz (1991) observes that the more accurate label would be “perfect decentralization.” Since all firms are sole proprietorships and have no employees, the *HRM* function even in generic form disappears (except perhaps in the trivial sense that the sole proprietor “self-coordinates” his/her labor in production). An economy of perfect decentralization is thus also an economy of “perfect externalization” in the sense that markets perform all the *HRM* activities of allocating and coordinating labor and management in organizations performs none. In terms of Figure 2, the pyramid representing the firm shrinks to the size of a single-person firm, leaving no room for *HRM* of any type.

Coase did not consider the opposite case, but it is instructive to do so (Kaufman, 2004). Here, using Commons’ dichotomy, MT cost is infinite (say because the

government makes market transfer of property rights illegal and punishable by death) but OT cost is minimal or even zero (due to perfect information, perfect government enforcement, etc.). This leads to the polar opposite form of economic organization, which may be called “perfect centralization.” It might also be labeled “perfect cooperation” or “perfect socialism,” in contradistinction to perfect competition and “perfect capitalism.” Here the economy vertically integrates into one giant all-encompassing “firm,” perhaps in the form of a centrally planned national economy. Since all resources are coordinated by management (e.g., an omniscient central planner, the analog to the Walrasian omniscient auctioneer in the general equilibrium economy of perfect decentralization) within this giant organization, the market completely disappears. In terms of Figure 2, the pyramid representing the firm expands until it encompasses all economic activity and the market diagram in panel (i) disappears. Since all productive resources are coordinated by management inside an organization, the economy of perfect centralization also represents “perfect internalization” with respect to the human resource function. If an internal employment system is exemplified by an HPWS, and if an HPWS is exemplified by organizational characteristics such as high job security, extensive vertical job ladders, careful selection into jobs, extensive training, team-forms of production, and some form of profit/gain-sharing, then an economy of perfect centralization is (in theory) one giant HPWS. Accordingly, we would expect high organizational performance to be matched by a high level of HRM activities/practices – just the opposite case of perfect centralization and perfect externalization.

The implication of this line of reasoning is that the institutional structure of production, and the attendant institutional structure of *HRM*, ranges along a theoretical

continuum from “perfect externalization” to “perfect internalization.” In the world of perfect externalization, firms maximize efficiency and profits but do so with no *HRM* (because there are only single-person firms). Hence, the HRM variable in the production function is zero. Somewhat more realistically, if market transaction cost is positive but modest-sized, small-scale multi-person firms may form but yet may continue to rely on a completely or mostly externalized employment system. Hence, the HRM variable in the production function may be zero or a small positive value.

As the institutional structure of production progressively shifts toward internalization (including within it various types of employment systems, such as “craft,” “factory” and HPWS), firms size grows, as does labor immobility and firm-specific human capital. In such an environment, firms determine that “best practice” increasingly means investing more in formal management structures and practices, including HRM. When production reaches the stage of perfect internalization, the market no longer has any coordinating role and all labor coordination takes place through the use of HRM (e.g., a management-crafted employee handbook that, like a complete contract, specifies all methods, terms and conditions of employment and employment management). Of course, the real world is a mix of these two theoretical polar opposites, with the result that some firms cluster toward the “external” pole, others cluster toward the “internal” pole, and the bulk lie somewhere in the broad middle area with an employment system composed of some combination of external and internal HRM features/practices.

This insight is not new, although it tends to get submerged and neglected in the modern literature. Writing in 1956, IR scholars Douglass Brown and Charles Myers observed “Both now and at earlier periods, it would undoubtedly be possible to find

particular managements lying *at every point on the spectrum of each aspect of industrial relations*” (pp. 84-5, emphasis added). Mahoney and Deckop (1986), in their review of the HRM field circa the mid-1980s, argued that a useful way to begin theorizing *HRM* is to use the concepts of “structured” and “unstructured” labor markets advanced by institutional labor economist Clark Kerr as ideal types of polar opposite employment systems. But these concepts correspond almost exactly to the concepts of external and internal labor markets advanced here, and not surprisingly so since Kerr (along with Dunlop) was also an originator of the ILM idea. The notion that firms adopt different employment systems, with the ELM at one pole and ILM at the other, predates Kerr by another half-century, however. John Commons, in his book *Industrial Goodwill* (1919), distinguishes five distinct employment systems: “commodity” (demand/supply), “machine” (scientific management), “good will” (unitarist, high morale), “public utility” (employment security/protection), and “citizenship” (employee representation, voice and due process). The commodity model anchors the ELM end of the *HRM* continuum, the other four range somewhere in the middle, and a combined package of the four represents that era’s equivalent of an HPWS and anchors the ILM end of the spectrum.

One also finds wide empirical evidence that “best practice” in labor management is associated with highly disparate *HRM* systems. Contemporary research reveals, for example, a very wide dispersion in *HRM* practices and employment systems in current-day American firms, even among competing firms in the same industry where some adopt a highly externalized/low HRM-intensive system and others adopt a highly internalized/high HRM-intensive system (Cappelli and Crocker-Hefter, 1996). It is also revealed in the wide frequency distribution of HRM practices in Figure 1, and the fact

that nearly *one-third* of the firms in this sample did not even have a personnel/HR department. It is also revealed in firms' *HRM* practices a century ago. In 1896 engineer Henry Roland published case studies of six model employers who he claimed had accomplished "financial success, along with full and happy lives of the workmen" (suggestive of a mutual-gain outcome). At one end of *HRM* practice was one company "without the faintest trace of a defined [labor] policy" (p. 76); at the other end was a company that "reaches success by the opposite course of precise law and rule [e.g., formal employment contracts, written supervisor reports], framed with infinite labor and minuteness of detail" (p. 395). Finally, ones see evidence of the firms moving from one employment system to another, such as the abandonment of ILMs by many Welfare Capitalist firms in the years of the Great Depression and then their reappearance in the 1950s (Jacoby, 1997).

Theorizing the Firm's Demand for HRM Practices

The central message of the previous section is that for all multi-person firms *HRM* must be a positive value but HRM may be zero. I now transition to the second-stage question: what determines the firm's demand for specialized and formal HRM practices? Most HRM/SHRM researchers argue that the central question in the field is to determine what combination of HRM practices yields maximum firm performance, where HRM is typically defined in the narrower sense (as earlier illustrated). An economist would say: look no further than Figure 1! Although some firms no doubt mis-estimate their profit-maximizing HRM bundle, or are constrained from adopting it in the short-run by various barriers and frictions, in the aggregate their position in the HRM frequency distribution

presumptively reflects – at least as a useful first approximation -- the outcome of an equilibrium choice process (contra the universalistic theory). The task is to model this choice process.

The basic framework used here relies on the microeconomic theory of production and derived factor demand. The innovation is to consider formal HRM practices as similar in generic form to the services provided by other factor inputs, yielding a production function such as pictured in Figure 2 and re-stated in equation 1.

$$1. Q = f(K, L, HRM)$$

The production function in equation 1 needs to be further modified, however, to better capture the effect of HRM on firm performance (the “black box” issue). This is done in equation 2:

$$2. Q = f[K, e(HRM) \cdot L, HRM]$$

The first revision of equation 1 is to expand the labor term from L to $L \cdot e$. The L term is the number of persons/hours of labor; term e represents what Appelbaum, Bailey, Berg and Kalleberg (2000) refer to as “effective labor.” It represents both work motivation (effort) and skill-upgrading (training/learning), with a higher value of e connoting the worker produces more output due to harder/higher quality work or better skills. If $e = 0$ (e.g., workers sleep all day on the job or have zero skills for the job), then $L \cdot e = 0$ and no output is forthcoming from the production function. The idea is that a firm hires a certain workforce of L but the amount of output produced is a function of the labor services (or “labor power”) provided by these workers, which is $L \cdot e$.

The second revision makes the amount of effective labor $L \cdot e$ a function of the level of HRM practices; that is, $L \cdot e(HRM)$. The idea is that HRM practices may

contribute to increased “effective labor” either by boosting motivation and effort or by increasing workers’ skills.

Equation 2 shows that investment in additional HRM practices increases the amount of output Q in two ways (Kaufman, 2004). The first is the *direct effect*, representing the independent contribution that more units of input HRM has on production (the right-hand term in the production function), holding constant the amount of labor and capital services. The additional HRM practice might be in the area of employee selection, for example, and presumably greater investment in hiring tests, personal interviews, and psychological assessment will increase output Q independent of any change in the quantity of labor (through better matching of people to jobs, etc.). Alternatively, the extra expenditure on HRM practice might be a safety program that increases Q by reducing workplace accidents and production downtime, or the higher production (and lower cost) that results from reducing turnover through a job security provision or just-cause termination policy.

The second channel by which additional inputs of HRM affect production is the *indirect effect* (the middle term). The indirect effect captures the influence that more HRM practices have on output as they indirectly change the effective amount of effort e each worker provides. The indirect HRM effect can take a variety of forms. One example is greater effective labor due to the higher morale created by an employee involvement program; a second is greater effective labor through a formal training program.

The choice problem for the firm is to select the level of HRM practices that maximizes profit (an analytic simplification that does not deny the second-order reality of other goals). The answer is given by solving equation 3.

$$3. \quad \Pi = P \cdot f[K, e(\text{HRM}) \cdot L, \text{HRM}] - V \cdot \text{HRM} - W \cdot L.$$

Equation 3 states that profit (Π) is the difference between revenue and cost. Revenue is $P \cdot Q$, with the production function in equation 2 substituted for Q . Assuming capital is fixed in the short-run, there are two elements of variable cost: labor cost and the cost of HRM practices. Assuming the cost of labor per unit is the wage W (including benefits costs, etc.), total labor cost is $W \cdot L$. The HRM practices also have an explicit cost, denoted by V , since they are themselves produced with capital and labor. The total cost of HRM is, therefore, $V \cdot \text{HRM}$. Although the wage W is, generically viewed, a component of the firm's *HRM*, the choice problem considered here is the optimal level of management “manufactured” HRM, so W and V are separately distinguished (in effect, preserving the distinction between external and internal). For simplicity, the cost of HRM practices is assumed to be identical across firms, so V is a constant.

The optimal level of HRM is determined by differentiating equation 3 with respect to HRM and solving for the first order condition. This is done in equation 4:

$$4. \quad \frac{\partial \Pi}{\partial \text{HRM}} = P \left[\left(\frac{\partial Q}{\partial e} \frac{de}{d\text{HRM}} \right) L + \frac{\partial Q}{\partial \text{HRM}} \right] = V$$

The left-hand side of the first-order condition (the bracketed term) is the marginal revenue product (MRP) of HRM practices. It is composed of two parts: the second term is the *direct* HRM effect (the extra product from more HRM services, holding labor services L constant) and the first term is the *indirect* HRM effect (the extra product that comes from the positive effect more HRM services has on employee work effort through morale, motivation, training, etc.). If labor were a commodity (i.e., inanimate factor input), the term $e(\text{HRM})$ becomes a constant and falls out of the first order condition,

leaving only the direct effect. If only the direct effect were present, human resource management would not be substantively different from operations management.

The right-hand side of equation 4 is the unit price of HRM services V . In words, equation 4 is an example of the classic marginal decision-rule found throughout economics: the firm should keep investing additional money in HRM practices (an HR department, job evaluation, employee involvement, etc.) as long as the extra revenue created exceeds the extra cost incurred; when the two become equal the optimal level of HRM practices has been reached (Jones and Wright, 1992).

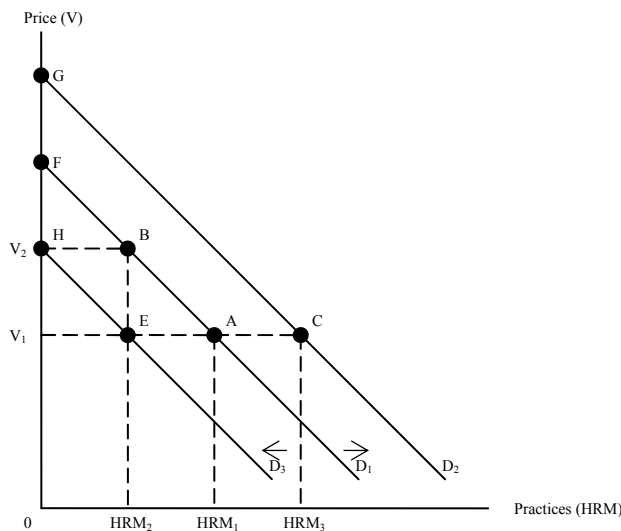
The data in Figure 1 shows that some firms invest little or nothing in HRM practices, while others invest in an intermediate level and others in a high level. This theoretical model provides an explanation. Each firm, using equation 4, compares the extra productivity and revenue generated by using an additional unit of HRM practice in production with the extra cost incurred. Some firms, given their size, technology of production, skill and demographic characteristics of the workforce, and other such factors (spelled-out in more detail below), find that profits are maximized with zero HRM practices (e.g., an ELM-type employment system). Others find that profits are maximized with an intermediate level, and yet others find that with their size, technology of production, workforce skills/demographics, etc., a high level of HRM practices maximizes profit. Each firm's place in the HRM distribution in Figure 1, therefore, is determined by the estimated benefit it gets from additional HRM versus the additional cost it incurs.

In this model, if a firm is in the extreme left-hand tail the presumed reason is *not* because it is hugely foregoing profit due to inefficient management and/or large barriers

to adjustment (per the “one-eighth” rule) but precisely because the management has concluded that this position (few HRM practices) *does* maximize profit. A corollary is that the decision to treat HRM as a strategic variable is also endogenous and if the labor input is very inexpensive, and/or the impact of HRM on firm performance is very slight, then it is the hallmark of good management to recognize that strategic decision-making is itself a scarce/valuable resource and little of it should be allocated to HRM (or HRM departments/executives). In other words, it can be strategic for a firm to treat HRM and/or the HR department as non-strategic (tactical) elements.

The HRM Demand Curve and HRM Demand Function. Equation 4 can be used to derive an HRM demand curve. An example of such a demand curve is depicted in Figure 3 as D_1 . This demand curve is analogous to the demand curve for other factor inputs, such as labor, in that it represents the relationship between the firm’s demand for HRM practices and the price of HRM ($\$V$), as well as numerous other variables. The HRM

Figure 3. The Demand Curve for HRM Practices



demand curve is given by the marginal revenue product (MRP) schedule of HRM, which is the left-hand (bracketed) part of equation 4. The MRP schedule could initially have an

upward sloping portion (not shown here for simplicity of exposition), but eventually will slope downward, given operation of the law of diminishing returns. The common sense of the downward slope is that beyond some point additional investment in HRM practices, such as additional hours of training or additional sophistication in selection tests, have a successively smaller positive effect on productivity and revenue.

Assuming the price of HRM practices is a constant V_1 , the profit-maximizing level of HRM practices is HRM_1 (point A). It is at this point that the equilibrium condition in equation 4 is satisfied; anywhere to the left the MRP of HRM exceeds the marginal cost and the firm adds to profit by expanding expenditure on HRM practices, anywhere to the right the opposite holds true.

Figure 3 shows that a firm's use of HRM practices follows the law of demand, just as does its use of other factor inputs. Thus, a rise in the price of an HRM activity from V_1 to V_2 causes a movement up the HRM demand curve D_1 and a decline in quantity demanded from HRM_1 to HRM_2 (point A to point B). If an occupational licensing law were passed, for example, that requires all HRM practitioners to have a university master's degree, firms would have to pay a higher wage (salary) to attract these more educated workers. This higher labor cost would in turn increase the marginal cost of each unit of employee recruitment activity, or other such HRM input, leading to a movement up the HRM demand curve and a decline in the firm's quantity demanded.

A firm's demand for HRM practices is also influenced by all those variables that shift the HRM demand curve. These variables must affect one of the two determinants of the HRM input's marginal revenue product: the marginal physical product (the extra output produced) or the marginal revenue from this extra production (or both). Theory

suggests a number of these shift variables; others are more a matter of common sense observation or empirical determination (described shortly).

Before proceeding further, it is useful to repackage equation 4 into a more tractable format. This is done in equation 5.

$$5. \text{ HRM} = f(Q, W, V, X_i)$$

Equation 5, in effect, inverts the profit maximization equation in equation 4 and expresses the demand for the HRM input as a function of the level of output, the prices of factor inputs, and a host of other independent variables captured in the vector X_i .

Equation 5 can be called the *HRM demand function*. Holding all other variables constant, changing the level of V in equation 5 causes a movement along the HRM demand curve D_1 in Figure 3; holding V constant and changing one of the other variables in the demand function (e.g., larger scale of output) shifts the HRM demand curve to the right (D_2) or left (D_3). At a constant price of V_1 , a rightward shift of the firm's demand for HRM practices leads to an increase in use of HRM practices from HRM_1 to HRM_2 (point A to point C); a leftward shift reduces HRM practices from HRM_1 to HRM_3 (point A to E).

The HRM demand curves in Figure 3 and the HRM demand function in equation 5 can be used, respectively, to generate the HRM frequency distribution in Figure 1. Using the latter, at a point in time each firm has particular values of the variables V , W and the X_i , and, inserting these into the demand function, yields its optimal level of HRM practices. Plotting these equilibrium values traces-out the HRM frequency distribution, as in Figure 1. Alternatively, one can plot the position of all firm's HRM demand curves in Figure 3 and, for a given price (e.g., V_1), determine the same distribution of equilibrium values of the HRM practice variable. In effect, the distribution of HRM demand curves

maps-out an identical frequency distribution of HRM practices. Thus, the left-hand tail of the HRM frequency distribution is described by the one-third or so of firms that have a zero-to-small demand for HRM (e.g., demand curves to the left of D_3), the center of the distribution is given by the majority of firms that have “intermediate” HRM demand curves (in a band around D_1), and the skewed part of the right-hand tail is given by the relatively small number firms that have a very high demand for HRM (demand curves scattered far to the right of D_2).

This model also explains changes in the HRM frequency distribution across time and countries. Illustratively, at the turn of the 20th century the HRM frequency distribution was highly compressed and centered very close to the vertical axis (Kaufman, 2007). As an example, in 1902 the world’s largest company, the United States Steel Corporation, employed 160,000 people but used practically zero formal HRM practices. The reason is that nearly all firms were using a highly externalized labor management system and thus had near-zero HRM demand curves. Over the ensuing decades, however, the HRM demand curves of many firms shifted successively to the right -- due to changes in production technology, unionization, legal regulation of employment, and other such factors, causing the mean and variance of the HRM frequency distribution to also increase. Variation in HRM demand curves also explains different HRM frequency distributions among countries, such as between the USA, France and India.

If variation in demand curves explains the variation in firm-level HRM practices, then the next step in theorizing is to identify the specific shift factors in the HRM demand function that give rise to this variation. Provided below are some of the shift factors that

theory and evidence suggest are most important. The first two (Q and W) are explicitly identified in equation 5; the remainder are subsumed in the vector X_i . This list is suggestive and not definitive.

Firm Size. The demand for HRM practices should increase with firm size, measured by level of output (Q) or level of employment (jointly determined by Q and W in eq. 5 and not therefore explicitly shown). This relationship is uniformly found in empirical studies (Boselie, Dietz, and Boon, 2005). A theoretical rationale is that the transaction cost of market governance increases with firm size due to greater difficulty and complexity of coordinating large groups of workers through market controls and incentives.

Wage Rate. The second variable in the HRM demand function in eq. 5 is the wage rate W. The wage may be either a substitute or complement for HRM practices (Ichniowski, Shaw and Prenzushi, 1997). In the former case, firms may use a higher W in lieu of formal HRM practices. An example would be efficiency wage theory where by paying a higher-than-market W employees are motivated to self-enforce higher work effort and firms can reduce direct HRM control devices, such as supervision and time clocks. In this case, a higher W would shift the HRM demand curve to the left. The opposite would occur where W and HRM practices are complements. In high performance work systems, for example, a high W and high level of HRM go together. One reason is that an HPWS requires a unitarist employment relationship and paying a high W creates higher employee commitment and loyalty and removes a source of potentially disruptive distributive bargaining (tacit or formal).

Firm Age. The demand for HRM practices tends to increase with firm age. The longer-lived are firms, the more they develop rules and bureaucratic procedures to deal with employment policy and problems. Older firms (and plants), however, have more difficulty adopting new HRM practices, particularly as a complete package, implying a contingency between firm age and the type of HRM system (Appelbaum, et. al., 2000).

Production Technology. Internalization of employment is encouraged by production technologies that are more complex, feature greater worker interdependencies (e.g., team forms of production), and allow greater room for discretionary effort. More complex technology makes employee selection more difficult and important and turnover more expensive; more extensive interdependencies in production increase the need to maintain and promote effective employee coordination and cooperation; and greater room for discretionary work effort heightens the importance of maintaining/promoting employee commitment and morale (Appelbaum, et. al., 2000).

Organizational Characteristics. An organizational characteristic likely to impact the demand for HRM practices is the degree of centralization of operations and management control. Companies that are more highly centralized, particularly if they have numerous geographically separated facilities and employee groups, are more likely to have a larger amount of formal HRM practices in order to maintain and promote consistency and company-wide coordination . Other potentially important organizational characteristics are profit/non-profit status and public/private ownership (Luthans and Sommer, 2005).

Training/Knowledge Characteristics. Internalization and demand for HRM will also be greater in firms where production involves greater specific on-the-job training.

Specific OJT creates a form of asset specificity, thus raising market transaction cost.

Work systems that provide more opportunity for workers to develop and apply new knowledge for improvements in processes and products will also have a greater demand for HRM practices, per the implications of the resource based view of the firm. Lepak and Snell (1999) call these two characteristics “uniqueness” and “value.”

Workforce Characteristics. Firms will have a greater demand for HRM practices the greater the extent to which they obtain labor from, respectively, employees rather than contract/contingent workers, full-time rather than part-time workers, and workers with characteristics (e.g., education, skill) that are associated with higher turnover and (internal) training costs.

Economic/Market Conditions. Firms operating in more stable product markets and economic environments have a greater incentive to adopt ILMs and formal HRM practices (Orlitzky and Frenkel, 2005). ILMs involve greater employee investment expense, transform labor into a quasi-fixed cost, and introduce greater organizational rigidity. These conditions become progressively less economic in the face of greater volatility of sales and employment and shorter product life-cycles. ILMs and extensive HRM practices are also promoted when labor markets remain at or close to full employment. Not only does full employment increase the pressure to carefully select, develop and retain employees (due to scarcity of qualified labor in the external market), it also reduces the ability of firms to use the threat of unemployment as an effective and less costly motivation/discipline device.

HRM Innovations. The number and sophistication of HRM tools available to firms expands over time due to new discoveries and innovations in HRM organization,

methods, and practices. New innovations increase productivity and/or lower cost, thus increasing HRM demand.

Unionization. The presence of a union in the firm, or closely competing firms, is likely to increase the demand for HRM practices. A union endeavors to negotiate more formalized, structured and standardized employment management practices. A firm with a union must, therefore, invest more in HRM. If closely competing firms have a union, or a strong organizing threat otherwise exists, an unorganized firm will also attempt to preserve its non-union status through greater HRM. Possibly, however, unionization may lead to lower HRM if the union takes over certain functions (e.g., selection and hiring through a hiring hall) or resists certain practices (e.g., profit-sharing).

Government. Greater government regulation of employment heightens the incentive of firms to adopt formal HRM practices in order to comply with government mandates, avoid legal costs, and maintain a positive community image. Firms also practice more extensive HRM in order to forestall the threat of greater government regulation of employment (“government avoidance,” akin to union avoidance).

Social/Cultural Factors. Companies create distinct social environments and organizational cultures, some of which promote a demand for HRM practices and others which don't. Companies, for example, that seek to inculcate esprit d'corps, loyalty and egalitarianism will have a greater demand for HRM practices; companies where work is “only a job” or a short-term instrumental relationship will have a smaller demand for HRM. Social and cultural factors can also explain HRM practice variation across nations and, perhaps, regions or ethnic groups. HRM was slower to develop and spread in the UK than the USA, for example, in part because of the British social ethos that in earlier years

downgraded professional management and the importance of management education.

HRM, on the other hand, has been strongly emphasized in Japanese firms, partly because of a social ethos that puts a high emphasis on preserving group harmony and long-term employment relationships.

Management Philosophy. Company owners and top executives differ in their philosophies and attitudes toward employees and labor management practices. This factor most closely corresponds to the “taste” variable in the traditional microeconomic theory of demand. Quite apart from profit considerations, some owners/executives take an “employee-oriented” approach as a matter of managerial philosophy and hence tend to put more resources into HRM, while others have a “hired hands” viewpoint and accordingly give HRM little emphasis.

Business Strategy. I put last in the list of shift factors what most HRM researchers would probably put first: the firm’s business strategy. Theoretically, however, a legitimate question arises whether a business strategy variable has independent explanatory power in the HRM demand function. That is, business strategy can be thought of at the most basic level as determining the best means to reach given ends (Boxall and Purcell: 34). Applied to HRM, this naturally leads to Wright and McMahan’s (1992: 298) oft-quoted definition of SHRM: “the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals.” But in a world of perfect information and competitive markets, “business strategy” is nothing but a restatement of the firm’s profit-maximization problem in equation 3 which, when solved, yields the various first order conditions determining product prices, level of output, and the usage and mix of factor inputs. If all the relevant variables that affect

profits are included in equation 3 and the problem is correctly optimized by business decision-makers, the firm's "business strategy" (means-ends choice) emerges as the solution of the model – that is, the solution *is* the strategy. Since the HRM demand function in equation 5 is derived from the solution of the model, the predicted value of HRM practices that comes from it already completely reflects and incorporates (via the Q, W, V and X_i variables) the firm's choice of business strategy. Vertical fit is thus an outcome of solving the model, while a separate variable in the HRM demand function called "business strategy" becomes redundant and empty of conceptual content.

This conclusion holds, of course, only in the context of the highly artificial and restrictive assumptions of the simple neoclassical model. When the model is modified to incorporate more realistic features, such as bounded rationality, intra-organizational politics, and a variety of market imperfections (e.g., barriers to entry, heterogeneous resources), the concept of business strategy gains independent explanatory power for the firm's means-ends choice is no longer deterministic or obvious. Firms with the same variables in the HRM demand function, therefore, may adopt different business strategies in their quest to maximize profit, yielding in turn different outcomes for the HRM practice variable in equation 5. One must nevertheless be cautious in the use and interpretation of standard business strategy typologies in the HRM demand function (e.g., "prospector versus defender"), as choice of a particular strategy is presumably itself a function of the other independent variables. To the degree some of these variables are omitted from the HRM demand function, the strategy variable proxies for their influence. These considerations perhaps explain the weak and inconsistent empirical findings regarding the link between business strategy and HRM practices (Boxall, 2007)

Insight on the HRM-Firm Profitability Relationship. The maintained hypothesis in most of the HRM literature is that some variant of the best practice/HPWS employment system leads to higher firm performance. The model presented here is useful for analyzing the validity of this claim.

If profitability is the dependent variable, these studies are essentially estimating outcomes generated by equation 4. If product and labor markets are perfectly competitive and observed HRM outcomes are equilibrium values, the model implies that the estimated regression coefficient on HRM should be *zero* (not positive). That is, standard microeconomic theory shows that competition equalizes the return to every factor input across firms, implying that all firms increase (or decrease) their usage of HRM until a uniform rate of return is achieved. If adoption of more HRM did lead to greater profitability for some firms, they would have an incentive to do exactly this and would continue to invest in more HRM until the profit differential is eroded to zero (realized by several HRM writers, such as Becker and Huselid, 2006: 905).

This process is easily represented in Figure 3. Assume two firms are identical but the “one-eighth” rule is operative and Firm 2 correctly estimates the “true” productivity of HRM while Firm 1 seriously under-estimates it. Accordingly, Firm 1 has the “low” HRM demand curve D_1 in Figure 3 and Firm 2 has the “high demand curve D_2 . If both face the same HRM cost of V_1 , Firm 1 adopts a low level of HRM of HRM_1 , Firm 2 adopts a high level of HRM_2 . Profit is the difference between revenue and cost, which can be approximated in Figure 3. The revenue contribution of HRM for Firm 1 is the area under the demand curve up to HRM_1 , given by the rectangle $0FAHRM_1$; the cost of this level of HRM is the area $0V_1AHRM_1$. The profit contribution of HRM for Firm 1 is,

therefore, the difference; that is, the triangle area V_1FA . By similar reasoning, the profit contribution of HRM for Firm 2 is the larger triangle area V_1GC . Clearly, Firm 2 is more profitable than Firm 1 and the reason is that it utilizes more HRM.

If markets are competitive, however, this outcome cannot be a long-run equilibrium solution. Firm 1 is sub-optimizing and therefore earns less than a normal profit. It will either go out of business or learn from the pressure of competition that to survive it needs to increase its use of HRM to HRM_2 . Either way, in the long run the only demand curve left in the diagram is D_2 and, accordingly, otherwise identical firms then have the same profitability.

A number of empirical studies (reviewed in Coombs, et. al., 2006) report, however, a positive coefficient on the HRM variable(s). This result may be real, transient, spurious, or misleading. It may be real if, as hypothesized by the RBV theory of the firm, greater usage of HRM creates superior profits and for some reason other firms cannot easily replicate this. The extra-normal return to HRM is thus a form of economic rent, such as accrues to any extra productive resource that is restricted in supply (e.g., high fertility land). Such a rent is entirely plausible, but to be convincing theorists must also explain why other firms cannot easily replicate the HRM practice(s), given that most HRM practices are fairly simple, widely known and of moderate cost. Several tacks have been taken in the literature. One is to argue that the real boost to profit comes from the entire package of HPWS practices and successfully implementing the entire system is difficult. A second is to argue that the profit effect does not come directly from the HRM practices but from the more skilled, motivated and productive human capital they facilitate (e.g., through the “indirect effect” in eq. 4). Here again, however, it must be

explained why all firms cannot use HRM to capture this extra profit. A possible answer is that only a minority of employers/managers have the skills and/or motivation to successfully implement an HPWS-type system (Becker and Huselid, 2006; Purcell and Hutchinson, 2007). Evidence supports this contention, but the true source of the rent is not HRM but scarce and difficult-to-reproduce managerial talent.

The positive HRM coefficient in regression equations may also be a transient effect. For example, the performance/HRM data gained from cross-sectional surveys and other such sources may not be equilibrium outcomes, implying the demand curves for low-HRM firms (such as D_3) have not had sufficient time to catch-up with those of high-HRM firms (such as D_2). One plausible explanation is that once firms adopt an HRM system they tend to get locked into it, giving rise to a “vintage” effect where older firms (or plants) are more likely to use a traditional personnel management/industrial relations employment system while newer firms/plants are more likely to use a new “transformational” HPWS system. Another is that firms engage in imitation and “herd behavior,” introducing time lags and faddish waves in HRM (Paauwe and Boselie, 2005).

A positive HRM coefficient may also be a spurious statistical result due to factors such as omitted variables bias and reverse causality (Gerhart, 2007). As an example of the former, product markets may be imperfectly competitive, say due to economies of scale or other barriers to entry, and hence the larger-sized firms that on average utilize more HRM practices also on average have higher profitability. What appears as a rent generated by HRM is in fact a rent attributable to an unmeasured product market imperfection. Similarly, firms using an HPWS may appear to have greater profitability (e.g., return on assets) but this may be a mirage since the dependent variable is artificially

inflated because the denominator only includes the value of physical capital and not their large investment in human/social capital. As a number of studies have also noted, the positive HRM coefficient may also be a statistical artifact arising from reverse causality – that is, the causal arrow goes from profits to more HRM, rather than the reverse. In Figure 2, reverse causality means that firms with higher profits also have higher HRM demand curves, say due to rent-sharing with employees.

A positive HRM coefficient may also provide a misleading indication of the true effect of more HRM on firm performance. A number of studies (see Coombs, et. al., 2006), for example, measure firm performance with intermediate outcome variables, such as the employee turnover rate and labor productivity, and find that more HRM lowers the former and raises the latter. It is entirely possible, however, to find positive HRM performance effects on these variables and yet for HRM to have a zero or even negative effect on the more fundamental outcome variable – firm profitability. Greater expenditure on HRM, for example, may lower turnover and increase productivity yet profit will go down if the cost of HRM is greater than the extra revenue generated by the lower turnover or higher productivity (Cappelli and Neumark, 2001).

The Equilibrium Mix of Several HRM Inputs. The model has been used to address three fundamental features of the HRM frequency distribution depicted in Figure 1 – the firm’s place in the frequency distribution, the shape of the distribution, and changes in the distribution over time and across countries. A fourth important feature remains: the mix or “bundle” of individual HRM practices that comprise each firm’s overall position in the distribution. Thus, Freeman and Rogers (1999) found that firms in the right-hand tail of the distribution not only used more HRM practices but also tended to adopt a particular

mix of practices, such as employee involvement, formal dispute resolution, and gain-sharing forms of pay. Firms in the left-hand tail, on the other hand, not only invested in a low level of HRM practices but also chose a mix of HRM practices often associated with a “low involvement” or “low road” employment system.

The challenge is to model the process by which firms mix and match individual HRM practices to form an overall HRM system. To begin, one could replace the composite HRM practice variable (HRM) in equations 3 and 4 with a vector of n individual HRM functional practice areas, denoted HRM_i ($i = 1, \dots, n$). Thus, $HRM_1 =$ selection, $HRM_2 =$ training, $HRM_3 =$ employee benefits, and so on, with higher values of HRM_i representing more extensive/intensive deployments. The per-unit cost of input HRM_1 is V_1 , the per-unit cost of input HRM_2 is V_2 , and so on. In a yet more realistic but also complex treatment, one could further decompose the i HRM functional practice areas into j ($j = 1, \dots, m$) alternative methods. Thus, assume HRM_1 stands for selection and HRM_2 is training; then HRM_{11} and HRM_{12} stand for two specific selection methods (e.g., background checks and ability tests) and HRM_{21} and HRM_{22} stand for two methods of training (e.g., on-the-job and classroom training). The individual HRM_i and HRM_{ij} may be complements or substitutes in production, as discussed below.

The first-order condition in equation 4 expands to n first-order conditions, such as indicated in equations 6:

$$6. \quad V_1 = MRP_1$$

$$V_2 = MRP_2$$

.

$$V_n = MRP_n.$$

Equation 6 states in words that additional units of each individual HRM practice should be committed to production as long as the marginal increase in revenue exceeds the marginal increase in cost.

In much the same way as consumers maximize total utility by equating the marginal utility per dollar spent on each item consumed, firms maximize profit by equating the marginal revenue product per dollar-cost of each input used in the production process. Thus, the equilibrium amount of multiple HRM inputs is given by equation 7:

$$7. \quad MRP_1/V_1 = MRP_2/V_2 \quad \dots = MRP_n/V_n$$

This equation states that the firm should adjust the amount of each HRM input until the revenue gain per dollar of expenditure on each is equal. If, *ceteris paribus*, the MRP of the employee selection function increases (say due to a tighter labor market and greater scarcity of qualified employees), the firm maximizes profit by reallocating HRM expenditures from training to selection.

An interesting question in HRM research is the extent to which firms mix and match individual HRM practices into a smaller set of identifiable packages or bundles (the configurational perspective). Sometimes these bundles are called employment systems. One such bundle, for example, is an HPWS. Several writers have identified up to a half-dozen alternative employment systems, each distinguished by a distinctive set of HRM practices (e.g., Osterman, 1987; Begin, 1991; Marsden, 1999; Baron, Burton, and Hannan, 1999). Begin, for example, identifies these six systems: simple, machine, professional bureaucracy, adhocracy, missionary and divisional.

The individual HRM practices will cluster together into a smaller set of identifiable systems if the individual HRM_i (and HRM_{ij}) are related to each other in production as *complements* or *substitutes* (MacDuffie, 1995; Laursen and Foss, 2003). To measure this relation we must return to the profit function, initially presented in equation 3 but modified below in equation 8. Equation 8 simplifies the profit function by specifying the labor input as the single variable L , but complicates it by separating the HRM variable into the separate individual HRM practices, HRM_i .

$$8. \Pi = P \cdot f[K, L, HRM_i] - V_i \cdot HRM_i - W \cdot L.$$

The HRM inputs may be independent (separable, additive) in production, or may be related as complements or substitutes. Two HRM practices, such as HRM_1 and HRM_2 , are complements in production if $\delta^2 \Pi / \delta HRM_1 \delta HRM_2 > 0$ or, in words, if an increase in the usage of one HRM input raises the marginal profit return to the other (Milgrom and Roberts, 1991: 108). This might be the case, for example, if greater expenditure on employee selection increases the return on a given expenditure on employee training (perhaps because of a better person/job fit and thus greater productivity in training). Alternatively, HRM inputs may be substitutes in that greater usage of one reduces the marginal profit return to the other (the second derivative of the profit function is negative). An example would be if greater expenditure on employee involvement reduces the return on quality inspection staff. A third possibility is that the HRM inputs are completely separable, making the second derivative zero.

The profit function provides a convenient way to empirically test the relationship between individual HRM practices. This is illustrated in equation 9. Equation 9 specifies a representative HRM-firm performance regression equation. The dependent variable is

firm profitability, Z is a vector of control variables, and the HRM_i are individual HRM practices, and ε is a random error term. In practice, studies often combine the HRM_i into a composite measure of HRM practices, but to test for interdependence they must be disaggregated into two or more groups (e.g., MacDuffie, 1995; Black and Lynch, 2001). To keep the notation simple, I assume in equation 9 that there are only two groups of HRM practices, HRM_1 and HRM_2 . These are entered in the regression separately and then an interaction term $HRM_1 \cdot HRM_2$ is also introduced (Ichniowski, Shaw and Prennushi, 1997).

$$9. \quad \Pi = \beta_0 + \beta_1 HRM_1 + \beta_2 HRM_2 + \beta_3 HRM_1 \cdot HRM_2 + \beta_4 Z + \varepsilon$$

The coefficient on the interaction term provides the evidence on whether HRM_1 and HRM_2 are separable, complements or substitutes. That is, the inputs are complements if $\beta_3 > 0$ (and is statistically significant), are substitutes if $\beta_3 < 0$, and are separable if $\beta_3 = 0$. For example, the marginal effect of additional use of HRM_1 on profits is given by $\beta_1 + \beta_3 HRM_2$. If $\beta_3 > 0$, then the return to HRM_1 rises as more of HRM_2 is used, per the definition of complementary inputs given above. An interesting extension of equation 9 would be to include the wage rate W as a separate independent variable and interact it with the HRM_i variables in order to determine whether W and HRM_i are complements or substitutes (earlier discussed).

In theory, relations of complementarity and substitutability can be estimated for any number of separate HRM practice variables, as well with other independent variables such as the wage, by including the requisite interaction terms in the profit equation. In actual empirical estimation, this technique is heavily constrained by problems of collinearity and degrees of freedom (Cappelli and Neumark, 2001). An alternative approach

is to go back to the HRM demand function in equation 5 and disaggregate it into a series of regression equations estimated over individual HRM_i. An empirical technique, such as cluster analysis, could then be used to see if the predicted values of the HRM_i sort into identifiable groups, perhaps conditional on certain contingent independent variables.

Conclusion

If HRM is going to be a positive value-neutral science, it must first seek to explain the world *as it is*, not as scholars think it *should be*. Much current and past HRM research starts from, or is unduly influenced by, the latter approach, leading to a biased conceptualization of the HRM construct and theories that have limited domain and explanatory power.

This paper makes two fundamental contributions to advancing a positive theory of HRM. The first is to identify the major type of empirical phenomenon that a theory of HRM must seek to explain and predict. This phenomenon is the frequency distribution of HRM practices (Figure 1), both among firms (and nations) at a point in time and changes in this distribution over time. Granted, not all HRM theories will have equal applicability to this issue, and certainly other empirical phenomena in HRM also deserve attention, but nonetheless the ability to explain *all parts* of the HRM frequency distribution, and its major features, surely must stand as a central litmus test for any and all theories in this field. Based on this standard, I judge that most existing HRM theories are partial, incomplete and biased toward larger firms located in the right-hand tail.

The second major contribution of the paper is to develop a new theoretical framework for HRM. This framework, drawing principally from economics and

industrial relations, provides a theoretical explanation for the HRM frequency distribution. The central analytical construct is an HRM input demand function and demand curve. Although this model is more abstract and mathematical than is common for the HRM field (perhaps regarded negatively by some as vacuous formalism), my claim is that this abstractness and formalism have a large pay-off because they yield a theory with much greater generality and explanatory power. For example, not only can the theory explain the major features of the HRM frequency distribution, it also provides a convenient and insightful framework for structuring empirical work (the HRM input demand function can readily be operationalized as a single equation regression model) and provides deeper insight into the conditions under which HRM will (and will not) have a positive effect on firm performance. Finally, this model also illuminates two fundamentally different strategies for theorizing HRM. The approach adopted here treats the firm's place in the HRM frequency distribution as an equilibrium outcome (or tendency) of deliberative management choice explicable in terms of a rational (or mostly rational) weighing of benefits and costs; the approach explicit or implicit in many extant theories assumes most (perhaps all) firms should be located toward the right-hand tail (i.e., utilizing some variant of an HPWS) and thus requires some type of *disequilibrium* model to explain why they are located far from this desired position (e.g., in the left-hand tail) *and* the factors that determine (or inhibit) the rate of movement toward their desired place in the frequency distribution. Although both modeling strategies have their advantages and disadvantages, I suspect the equilibrium approach used here is not only more analytically tractable but also more productive of insight and testable hypotheses.

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