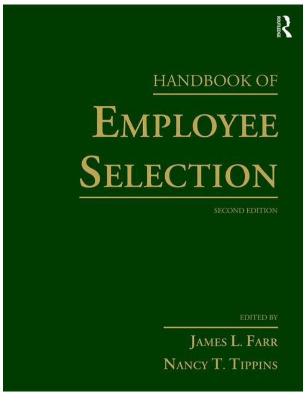

Handbook of Employee Selection

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Strategy, Selection, and Sustained Competitive Advantage

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This chapter is motivated by a simple question: Do professionally developed personnel selection practices offer strategic value to the firm? Most industrial-organizational (I-O) psychologists would answer this question with an enthusiastic "Yes!" The belief that hiring better people will result in better job performance, which in turn will contribute to better-functioning organizations, is imbued early in the education of most I-O psychologists. Utility analyses indicate that selection systems with high validity will generate monetary returns far in excess of the costs associated with selection. How then, despite a century of research demonstrating the consequences of effective selection at the individual level, does the question posed above remain a real concern among practitioners, consultants, and academicians?

Consider what it means for human resources (HR) to offer strategic value to a firm. At a high level, an HR practice will add strategic value to the extent it supports execution of the firm's business strategy. A firm's strategy represents how it will differentiate itself in a market relative to competitors; the strategy explains how the firm will compete and where it will compete. An HR practice such as selection must support a firm's strategy and uniquely enable it to compete against other firms. Personnel selection is focused on identifying whether applicants have the necessary knowledge, skills, abilities, or other characteristics (KSAOs) to contribute to effective individual performance on some criterion/criteria. However, demonstration of validity of a selection procedure is—by itself—insufficient for creating sustainable competitive advantage. The requirements for that include demonstration of firm- (or unit-) level consequences for a selection procedure that cannot be easily replicated. The latter point is important because there is growing recognition that HR practices are easily copied and consequently may not form a basis for strategic value (Wright, Dunford, & Snell, 2001).

Although it is likely true that using a more valid selection system will improve the quality of a firm's workforce and ensure performance parity (all else being equal), that by itself does not make selection strategically valuable. Because of the outsourcing of selection practices, many competitors can (and often do) use the same vendor's selection assessments. As a result, selection in such firms cannot contribute to their sustained competitive advantage, although they may use selection procedures that are predictive of individual job performance. In this chapter, we do not question whether professionally developed selection practices can add value to the firm. We believe that they usually do. However, we doubt whether this will always result in competitive advantage, and we offer some broad guidance about the conditions under which it will and will not occur. We also discuss how a broader perspective on selection can better articulate its value and thus perhaps increase the likelihood of effective selection practices being implemented and supported by top management. Demonstrating how effective personnel selection practices contribute to firm performance only increases the likelihood of such practices being implemented.

In the sections that follow, we first discuss the need for selection to take a broader perspective and show consequences at the business unit level. We then review the dominant strategic HR perspectives on how HR practices and human capital resources are linked to a business unit's strategy. This is followed by a critical examination of whether personnel selection contributes to such resources and sustained competitive advantage. We then discuss several ways through which selection may contribute to the unit's ability to execute its strategy. We conclude by considering selection in relation to other HR practices (e.g., training, compensation) for creating competitive advantage.

WHY PERSONNEL SELECTION MUST SHOW BUSINESS-UNIT-LEVEL VALUE

The most basic requirement for an HR practice to provide strategic value is to demonstrate that the practice has noticeable effects on outcomes at the business-unit level. *Business units* are broadly defined as those organizational entities that meaningfully describe unit functions or structures. Examples include departments, stores, divisions, lines of business, and of course, entire firms. Most key organizational decision makers are held accountable for consequences that exist at these unit levels, and key organizational decisions are driven by the performance of these units. Therefore, business-unit-level consequences are critical for demonstrating that the HR practice contributes to the firm's success.

Several staffing scholars have argued that recruitment and selection research has failed to sufficiently demonstrate business unit value because it is still focused only on individual-level outcomes (Ployhart, 2006; Saks, 2005; Taylor & Collins, 2000). It is safe to say that most personnel selection research is limited to the individual level. There is an abundance of evidence that best practices in selection will lead to the identification of KSAOs necessary for effective individual performance. The use of sound selection procedures is based on the expectation that such practices contribute to improved organizational effectiveness (Schneider, Smith, & Sipe, 2000). Although selection systems are usually developed by focusing on improving individual job performance, the implicit but rarely tested assumption is that hiring better employees will result in more effective firms.

However, reviews of the selection literature indicate that most research has never examined this question directly (Ployhart, 2012). Utility analysis is an estimate of the monetary value of selection, but it does not test the effects directly (Schneider et al., 2000). Among other things, most conceptualizations of utility analysis assume financial returns on staffing are linear, additive, and stable. Such assumptions are questionable. This may be, in part, why managers have found utility estimates to be unbelievable. For example, Latham and Whyte (Latham & Whyte, 1994; Whyte & Latham, 1997) found that utility analysis reduced managerial support for implementing a valid selection procedure, although the economic benefits of doing so were substantial and the logic and merits of utility analysis as a decision-making tool were carefully described. Perhaps one reason managers have not embraced utility analysis, in addition to not appreciating the mathematical proofs behind the Brogden-Cronbach-Gleser and related models, is the extremely high valuation placed on the typical selection intervention. Consequently, I-O psychology continues to struggle with demonstrating the business-unit-level value of selection in a manner that managers find credible.

More recent research within the tradition of strategic human resource management (SHRM) finds that firms using professionally developed selection practices perform better on financial, accounting, or market-based criteria than those that do not (e.g., Huselid, 1995; Jiang, Lepak, Hu, & Bair, 2012). However, one important limitation of most of these studies is that they rely on a manager (or small group of managers) to self-report the nature of the selection practice for the entire firm (see Gerhart, 2005; Wright & Haggerty, 2005). The often-cited paper by Terpstra and Rozell (1993), who showed that firms using more valid predictors outperformed those that used less valid predictors, even used a self-report measure of firm effectiveness. It is interesting that as a profession we seem willing to place confidence in self-reports of unit-level performance, when we place no such confidence in self-assessments of one's own performance! A second, more important limitation of this research is that it asks only generally whether "a valid or systematic selection process is used." Demonstrating that higher-performing firms are more likely to use systematic selection procedures does not establish causality and is a far cry from showing that units with the greatest levels of talent perform the best. Organizations that perform better financially may also be the ones more likely to invest in HR programs like selection systems. As DeNisi, Hitt, and Jackson (2003, p. 12) questioned: "If hiring 'better' people results in higher productivity, how exactly does the selection of individuals translate into improved organizational performance?"

This all leads to the rather uneasy conclusion that the existing literature says relatively little about whether selection contributes to business unit effectiveness, much less to the competitive advantage to the firm (Ployhart, 2006). We believe it is critical for selection researchers to show such value for three reasons. First, to the extent selection is perceived as nonstrategic or unrelated to unit performance, many managers and organizational decision makers will continue to use suboptimal selection practices. Second, an inability to demonstrate value may limit the rigorous I-O approach to selection primarily to entry-level hires, where the focus may be on efficiency and cost-effectiveness rather than added value. Third, the profession of I-O psychology may not achieve the degree of reputation and visibility it deserves by failing to demonstrate how one of its core practices, selection, adds value to firms (Ployhart, 2012). We do not mean to overstate our points here because clearly many firms do not suffer from these issues, but it is also apparent that many firms do not use selection practices as I-O psychologists would advocate (Anderson, 2005; Rynes, Brown, & Colbert, 2002). We believe part of the reason stems from the challenge associated with showing selection's unit-level impact (Ployhart, 2006).

STRATEGIC HUMAN RESOURCE MANAGEMENT (SHRM)

The field of SHRM has grown rapidly since the late 1980s. Most traditional HR, and especially I-O, research focuses on predicting, explaining, or influencing individual behavior. As noted above, selection in particular has treated individual job performance (and related criteria like turnover) as "the ultimate criterion." In contrast, the criteria of interest in SHRM scholarship are at the unit level, and most typically that of the firm (Wright & Boswell, 2002). SHRM scholarship tends to focus on between-firm (or business unit) differences in HR practices that help explain between-firm (or business unit) differences in performance. The typical SHRM study involves an examination of how business units that use different HR practices perform differently (Becker & Huselid, 2006). Thus, unlike traditional HR research, which focuses on individual differences in outcomes, SHRM research focuses on unit differences in outcomes. The other part to the story is that SHRM researchers tend to focus on predicting financial, market, or accounting criteria (Gerhart, 2005; Jiang et al., 2012). Hence, SHRM scholarship has attracted a great deal of attention from the business community, precisely because it shows that HR practices can improve the organizational metrics most important to stakeholders.

Broadly speaking, there are three dominant perspectives on how to best use HR practices (Delery & Doty, 1996). The *universalistic* perspective suggests that use of certain HR practices will always be useful and relevant. Note that such a belief suggests using the appropriate practices will always improve a firm's effectiveness, irrespective of changes in the economy, the firm's strategy, or its competition. Colbert (2004) argued:

> Research under this perspective has been useful in identifying discrete HR practices that are universally sensible, but it has not contributed much to HRM in the strategic sense, if we take strategic to mean practices that differentiate the firm in its industry and that lead to sustainable competitive advantage.
>
> (p. 344)

Yet this universalistic "best practices" approach is precisely the one taken by many selection scholars (e.g., cognitive ability is always a good predictor of job performance).

The *contingency* perspective suggests that HR practices will be useful and relevant only when they match with each other and the firm's strategy. The contingency perspective is more directly linked to adding value for the firm because it recognizes that HR practices must support the firm's strategy and be internally consistent with other practices. Attempts have been made to link HR strategies to generic business strategies (e.g., Porter's cost leadership, product differentiation, and focus; Schuler, Galante, & Jackson, 1987). Although the idea that the "appropriate" set of HR practices can be deduced from a general business strategy has obvious appeal, the approach has been widely criticized (Chadwick & Cappelli, 1999).

The *configural* perspective builds from the contingency approach to further recognize synergies that exist in patterns of practices that fit with particular strategies. This approach takes the most holistic view of HR management and suggests specific HR practices cannot be understood (or their effects decomposed) in isolation from other practices and the firm's unique strategy. In contrast, it appears that bundles of HR practices must be used in a specific combination to drive strategic value. These are most often called *high-performance work systems* and involve combinations of practices that include systematic staffing, training, compensation, and related practices. Firms that use these high-performance work systems outperform those that do not (Huselid, 1995).

Although there is now fairly compelling evidence that use of HR practices and high-performance work systems is related to firm value (Combs, Yongmei, Hall, & Ketchen, 2006; Jiang et al., 2012; although see Wright, Gardner, Moynihan, & Allen, 2005), it should be recognized that most SHRM research only examines the link between unit HR practices and firm effectiveness. Intervening explanatory processes, such as how the HR practice influences the cognitions, affect, and behavior of individuals, are rarely considered (Becker & Huselid, 2006; Gerhart, 2005; Wright & Haggerty, 2005). These unexamined intervening processes have been referred to as SHRM's "black box." It is within this black box that I-O psychology in general, and selection specialists in particular, are uniquely situated to demonstrate value (Ployhart & Hale, 2014). First, however, it is important to understand the dominant theoretical perspectives that are invoked to explain why HR practices contribute to firm performance.

Resource-Based View of the Firm

Wright, Dunford, and Snell (2001) noted the dominant theoretical perspective adopted by SHRM scholars has been the resource-based view (RBV) of the firm, as articulated by Barney (1991). What makes the RBV important among strategy theories is its emphasis on a firm's internal resources. Internal resources may represent human capital, top management expertise, financial capital, coordination processes, and related factors. Importantly, the RBV argues that there is heterogeneity in firm-level resources that contributes to some firms having a competitive advantage over other firms. Further, the RBV makes clear predictions about the characteristics of resources that have the potential to underlie sustained competitive advantage.

First, *valuable* resources are those linked to the firm's strategy and allow it to perform better than competitors. For example, having highly qualified employees could be a valuable resource if they resulted in firm-level competencies that manifested themselves in firm-level outcomes (i.e., the linkage between collective KSAOs and firm performance). Second, *rare* resources are more likely to result in an organizational competitive advantage because there is an insufficient quantity in the market. By definition, the most talented people will be rare (think of a normal distribution), so firms that better attract and retain the best talent should benefit directly (they have the rare talent) and indirectly (by keeping it out of the competition). Together, valuable and rare resources create opportunities for a firm to achieve competitive advantage. However, what firms need to be more concerned with is *sustainable* competitive advantage. A competitive advantage that is not sustainable leads only to conditions of temporary superiority followed typically by parity with other firms. Two additional conditions must be met for a competitive advantage to be sustainable.

Inimitable resources are those that competitors cannot readily duplicate without great cost. For example, if one firm retains high-quality talent better than its competitors, then it has created a resource that is inimitable. Social complexity, time compression diseconomies, and causal ambiguity contribute to inimitability (Barney & Wright, 1998). *Social complexity* refers to resources that only exist among aggregate collectives of people. For example, in many organizations knowledge is shared informally through social networks, rather than through more formal organizational structures and processes. As such, it is quite difficult to replicate the knowledge and knowledge-sharing process in other organizations. A highly effective climate is likewise socially complex because it exists in the *shared* perceptions of employees. Southwest Airlines has fended off multiple imitators (remember Continental Lite or the United Shuttle?). Although these imitators could replicate the business model (e.g., point-to-point service, single type of aircraft, minimal in-flight service, etc.), they could not duplicate key elements of the organization's culture. *Time compression diseconomies* represent the notion that time is often not something that can be compressed with equal effectiveness (Dierckx & Cool, 1989). For example, firms that have strong brand equity have an advantage that competitors cannot easily copy because it takes a long time to generate brand recognition and brand loyalty. *Causal ambiguity* describes resources that are linked to effective firm performance, but the specific reasons or paths through which they contribute are not obvious. For example, it may not be apparent which specific HR practices or combinations of practices contribute to building a more effective workforce. Because creation of these resources is not easily understood, it is hard for competitors to copy them with equal effectiveness.

In the RBV, the final condition for creating sustainable competitive advantage is that the resources be *nonsubstitutable*. Nonsubstitutable resources are those that are both necessary and sufficient for effective firm performance. For example, automated teller machines (ATMs) are an effective technological substitution for most bank teller transactions, making bank tellers' talent a substitutable resource. However, suppose that bank tellers also provide financial advice that adds value and increases the customer base—in this example, bank tellers' talent would be nonsubstitutable. Thus, only resources that are valuable, rare, inimitable, and nonsubstitutable can create sustained competitive advantage. Selection practices may or may not meet these conditions.

Human Capital and Social Capital Theories

Human capital theory (Becker, 1964) is a broad theory originating in economics (Becker won the 1992 Nobel Prize for his work on human capital theory). Human capital theory argues that there are two main types of human capital. Firm-specific human capital is relevant only to a specific firm or context, whereas generic human capital (e.g., cognitive ability, personality) is relevant across multiple firms or contexts. Within HR contexts, firm-specific human capital is generally considered to be more important for performance because of increased knowledge of processes, operations, products, customers, and coworkers (Strober, 1990). It could be argued that firm-specific knowledge is also more valuable, rare, inimitable, and possibly nonsubstitutable (Barney, 1991). Modern extensions to human capital theory include the knowledge-based view of the firm (Grant, 1996). Note that such perspectives on knowledge are not merely job knowledge, but include knowledge of the organization's customers, products, services, structure, processes, culture, and related factors. Thus, *human capital* represents the KSAOs that are "relevant for achieving economic outcomes" (Ployhart, Nyberg, Reilly, & Maltarich, 2014, p. 376).

Whereas human capital theory usually emphasizes aggregate employee education, experience, or knowledge, *social capital theory* emphasizes the interpersonal relationships and networks that exist among employees, units, and organizations (Nahapiet & Ghoshal, 1998). Given that modern work is increasingly knowledge- and team-based, social networks are a critical means for sharing and creating knowledge (Oldham, 2003). These social networks can generate effects on unit criteria that are unrecognized at the individual level. For example, Shaw, Duffy, Johnson, and Lockart (2005) demonstrated that using unit-level turnover rates (percentage of people who quit) as a predictor of unit performance underestimates the true costs of turnover. They showed that the negative effects of turnover were greater when those who left the firm were more centrally located in the employees' social networks. Simply put, losing a "more connected" person is more damaging than the departure of someone on the periphery. Thus, *social capital* represents the business-unit-level aggregate of employee social networks, relationships, and structures (Nahapiet & Ghoshal, 1998).

ALIGNMENT OF SELECTION AND STRATEGY

From the preceding discussion it is apparent that selection practices, by themselves, may not contribute to sustained competitive advantage and hence demonstrate firm-level value. Figure 5.1 is an attempt to illustrate and integrate the various SHRM concepts noted above with personnel selection. This figure is based on a multilevel, strategic model of staffing presented by Ployhart (2006). However, it makes more careful consideration of the types of firm-level resources likely to be important for sustained competitive advantage.

In Figure 5.1, notice that a business unit's HR practices in general, and selection practices in particular, will have a direct impact on the individual-level KSAOs attracted, selected, and retained (Bowen & Ostroff, 2004; Schneider, 1987). This is as one would expect; use of more valid assessments should better isolate the desired KSAOs (Guion, 1998). It is also as expected that these KSAOs have a relationship with individual job performance (denoted by the dashed lines in Figure 5.1). Here is where the usual selection story ends, with perhaps the additional effort in estimating utility. However, considering our review of the SHRM literature earlier, it is apparent that effective selection practices may or may not support the business unit's strategy and add value.

One of the main reasons for this ambivalence is that selection practices can often be copied and will not, by themselves, form the basis for sustained competitive advantage. For example, use of off-the-shelf assessments should, all else being equal, produce similar levels of validity at different firms. Such practices may lead to short-lived advantage or contribute to maintaining parity with competing units. Selection practices that are more customized to the firm, such as situational judgment tests that reflect the firm's climate and values, may be more difficult to imitate and thus better contribute to competitive advantage (see LeBreton et al., Chapter 4 in this volume, for additional perspectives). However, unit-level competencies (i.e., collective human and social capital resources; the bold box in Figure 5.1) form the strongest basis for *sustained* competitive advantage (Barney & Wright, 1998; Prahalad & Hamel, 1990). Consider the organization selecting front-line employees on the basis of conscientiousness, agreeableness, and emotional stability. By themselves, these individual-level selection KSAOs can and are screened by many companies. However, when combined with other properly aligned HR practices, a strong culture, and other management practices, selecting on these individual-level KSAOs can lead to the emergence of a unit-level competency such as "aggregate customer service." Thus, unit-level human and social capital competencies are the source of sustained competitive advantage; they represent intangible assets and add value to the firm but are created through application of HR practices like personnel selection in combination with other social capital issues (like organizational culture and management practices). However, the following paragraphs discuss certain conditions that must be met before unit-level competencies will create sustainable unit-level differences in performance.

First, validity at the individual level generalizes across like jobs, as is consistent with most selection research (note there is no moderator of the dashed relationship in Figure 5.1). However, this does not mean the validity of unit-level competencies (human and social capital) generalizes across contexts. Rather, human capital at the unit level only adds value to the extent that it is consistent with the firm's strategy (Ployhart et al., 2014). Also known as "external fit," an organization creating a unit-level competency such as customer service will benefit only to the extent that the competency is critical to its business strategy. Whereas one retailer competing on service would benefit from the creation of a customer service competency, another competing on price would experience less, if any, impact from the same activities. This is an important implication because it means one can be doing a wonderful job of selecting at the individual level, yet adding nothing to the sustained competitive advantage of the firm.

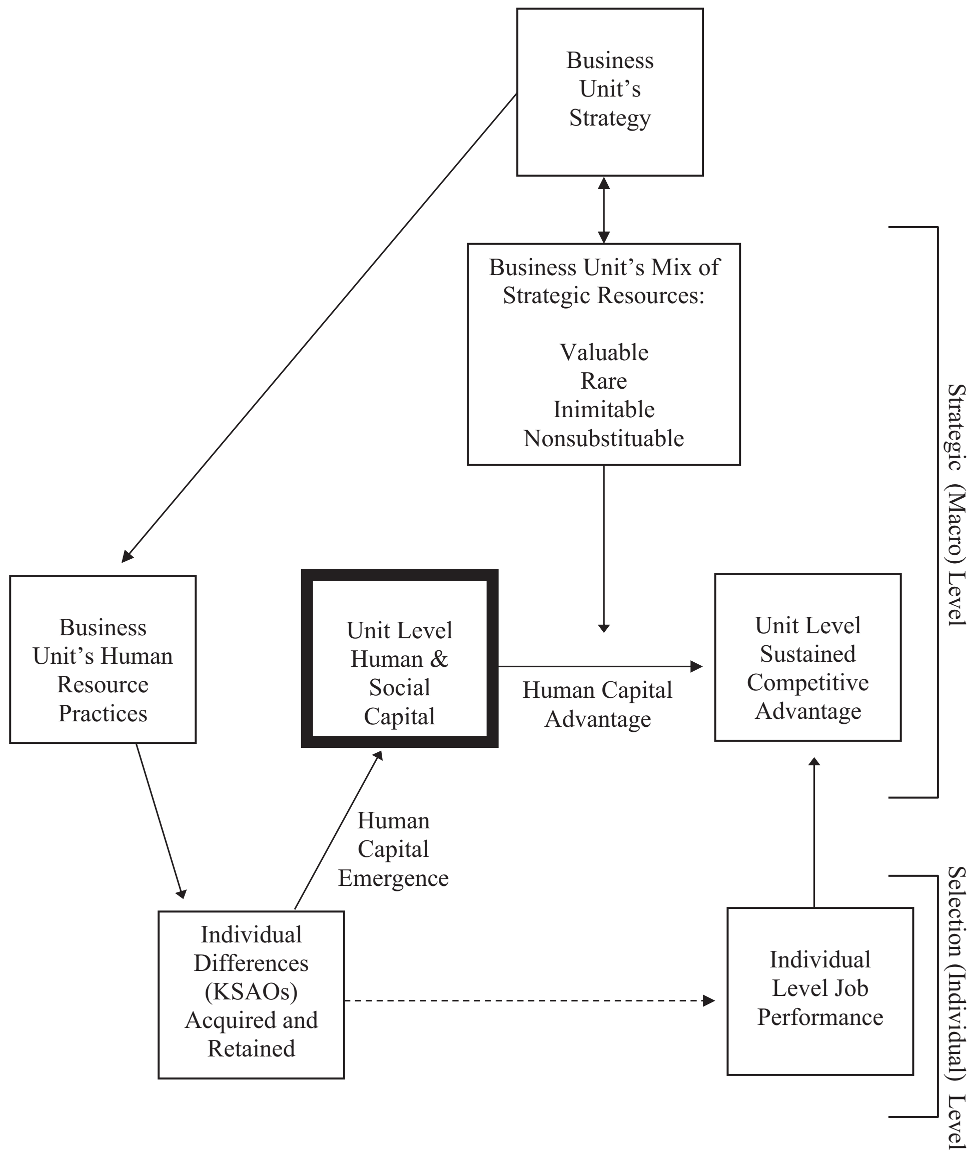

FIGURE 5.1 Conceptual Model Linking Personnel Selection With Business Unit Strategy

Notice that the extent to which unit-level resources are valuable, rare, inimitable, and nonsubstitutable will determine the strength of relationship between unit-level human and social capital and sustained competitive advantage. However, note that the contingent relationships found at the strategic level do not moderate individual-level predictor validity. The dashed line represents the primary relationship examined in personnel selection research. Only the bold box represents potentially strategic resources. Adapted from Ployhart (2006).

Second, it was previously asserted that selection practices alone are insufficient to create the unit-level competencies that are the basis of sustained competitive advantage. Selection practices must be aligned with other HR programs (e.g., training, performance management, and compensation) to create the desired impact. Selection practices that are inconsistently applied, or conflict with other HR practices, will not create the type of human capital emergence necessary for a unit to build a high-quality stock of aggregate human and social capital. For example, a unit may use exemplary selection practices but have an inability to recruit top talent. Or, the unit may attract and select top talent but fail to keep them in sufficient quantities. The unit's climate, leadership, or compensation may further enhance or lower the capital's potential. Also known as "internal fit," it is important to recognize that selection is but one lever available to management, and that the greatest impact comes when all levers are aligned and pointing in a common direction.

Third, selection can have significant strategic value if the targeted KSAOs fit externally (with the business strategy) and internally (with other HR programs) to create unit-level competencies that drive important firm outcomes. While complicated enough, this scenario is likely to have several important boundary conditions. For example, the relationship between unit competencies and unit outcomes is unlikely to be linear, cross-sectionally or over time (see Ployhart, 2004). Figure 5.1 emphasizes a contingency or configural view of selection practice because the value of unit-level human and social capital is dependent on (moderated by) the unit's strategy. This is in contrast to the personnel selection literature, which in many ways argues for a universalistic approach. Cognitive ability and conscientiousness may predict the individual performance of most jobs (Schmidt & Hunter, 1998). Although true, it does not necessarily follow that selecting on these attributes will result in sustainable competitive advantage. Further, universalistic findings (e.g., validity generalizes across contexts) at the individual level become contextualized at the unit level (e.g., validity is affected by economic environmental factors; Kim & Ployhart, 2014), and hence require a configural perspective. For example, there is likely a need for a critical mass of human and social capital (Dierickx & Cool, 1989). Particularly in highly task-interdependent work, hiring only a few highly talented employees is unlikely to result in unit-level competencies (i.e., ensure sufficient quantities of human and social capital) that will translate into improved business unit performance. Although the "tipping point" defining critical mass likely changes by industry, occupation, organization, and job, there is always a threshold. The relationship between the level of a unit's talent and its performance is likely to be nonlinear, and determining where the threshold is requires research unlike any that presently exists.

Fourth, looking longitudinally, time is a critical element for modeling the value of human and social capital. It takes time for HR practices to create human and social capital, and more time for the increasing stock to translate into unit-level outcomes (Ployhart & Hale, 2014). Such a temporal perspective is true for all unit-level processes, with higher-level processes (e.g., relations between firm climate and firm performance) requiring a longer time perspective than lower-level processes (e.g., relations between group cohesion and group performance; Kozlowski & Klein, 2000). In short, implementation of a new selection procedure, regardless of its merits, will take time before its effects can be measured at the unit level. This, of course, assumes that the other HR practices constituting the "bundle or high-performance HR practices" are themselves stable. Where other HR practices are evolving, the effects of a selection procedure may be even more difficult to ascertain (or their effects accelerated). This requisite leap of faith may explain why some organizations frequently change their selection processes.

One final caveat is that the predictors of individual job performance may or may not be the best drivers of sustained competitive advantage. Certainly one expects better individual performance to contribute to better unit performance, but this relationship will not necessarily be linear or isomorphic (e.g., group process losses, etc.). Because the criteria are not isomorphic across levels (e.g., adding one additional "high-ability" employee to a casino operator employing hundreds is unlikely to measurably impact that unit's performance), there exists a good possibility the predictors will not be as well (Bliese, 2000). This means additional KSAOs may be important drivers of unit effectiveness and sustained competitive advantage (e.g., those contributing to shared collective performance and social capital, such as personality traits linked to interpersonal and teamwork skills; Noe, Colquitt, Simmering, & Alvarez, 2003; Oldham, 2003). In short, characteristics unrelated to individual performance may be important for unit performance (see also Chapter 37, this volume, regarding team member selection). Of course, it must be remembered that a lack of quality individual KSAOs cannot be compensated with an otherwise effective management and a supportive culture. Both quality KSAOs and a supportive environment must exist.

If the above propositions are compared to the typical model for utility analysis, similarities and differences become apparent. In terms of similarities, utility analysis and SHRM scholarship would predict that more rare KSAOs (those that have a lower base rate in the population) will result in higher utility and competitive advantage. However, there are also important differences. Utility analysis assumes that economic value resulting from more valid selection will produce firm-level value, and it uses as its point of comparison either using no selection system or an alternative selection system. SHRM scholarship does not make these assumptions. Validity does not equal value; there are multiple ways that firms may use resources to be competitive; and valuable and rare resources may only contribute to parity or temporary competitive advantage (Ployhart, 2012). *Sustained* competitive advantage also requires resources that are inimitable and nonsubstitutable. Utility analysis and the contemporary view of selection fall short on these latter points.

These points illustrate that one cannot simply assume that using more valid selection procedures will add firm-level value, improve organizational performance, or create an opportunity for sustained competitive advantage. In fact, sole focus on individual-level selection prohibits such conclusions. Of course, poor use of selection can contribute to a competitive *dis*advantage by not acquiring the necessary KSAOs needed to perform necessary job and organizationally prescribed tasks. But consider one of the most important implications of Figure 5.1: an organization can be using highly valid predictors of job performance at the individual level but not necessarily developing the kinds of human capital necessary for the firm's sustained competitive advantage! This may seem discouraging, but it represents incredible opportunity for selection scholars and practitioners to better demonstrate their value to organizational decision makers. There exists a bridge to connect micro and macro disciplines of scholarship by linking selection (micro) to strategy (macro), and each discipline has the opportunity to strengthen the other. From a practical perspective, articulating selection's value, and the manner in which selection works in conjunction with management practices, strategy, and culture, will increase the likelihood of effective practices being implemented and supported.

Consider the fact that staffing impacts the firm's strategy and helps implement it. In terms of impact, Figure 5.1 alludes to the expectation that implementing HR practices aligned with the unit's strategy will contribute to human and social capital emergence that is valuable, rare, inimitable, and nonsubstitutable. However, through the process of developing and administering the selection system, selection also helps articulate and reinforce the firm's strategy through all levels of the organization. In the following section, we consider various means through which personnel selection can establish business-unit-level value.

SELECTION'S CONTRIBUTION TO BUSINESS UNIT VALUE

Organizational decision makers will devote the necessary resources for staffing practices because a firm needs talent to survive, but organizational decision makers are more likely to devote discretionary resources to the extent they believe selection practices will reinforce or help implement the firm's strategy. In the sections that follow, we discuss several opportunities for making this value proposition and review a number of recent empirical studies providing supportive evidence.

Multilevel Selection Shows Business Unit Consequences

Linking selection to a unit's strategy requires a multilevel focus (Ployhart, 2006). In this section we first review theory about multilevel systems, constructs, and process. We then consider how SHRM research has evolved to link individuals and organizations. We conclude with a brief review of empirical research linking selection to business unit outcomes.

The central issue in multilevel selection is understanding how individual-level KSAOs transform into unit-level human and social capital (KSAO composition; see Figure 5.1). In multilevel language, *emergence* refers to ways in which lower-level KSAOs combine to form collective, unit-level constructs (Kozlowski & Klein, 2000) that have frequently been referred to as *core competencies*. This is the critical link in Figure 5.1 that translates HR practices into strategically valuable intangible assets (i.e., human and social capital). Emergence takes two general forms. *Composition* forms of emergence represent agreement or similarity among observations. When systematic selection results in homogeneity in KSAOs, it becomes possible to describe the unit in terms of those KSAOs. This is of course the basis of the attraction-selection-attrition model (Schneider, 1987). For example, one firm that attracts, selects, and retains only those with high levels of conscientiousness will be more conscientious than a firm that is unable to develop such talent. *Compilation* forms of emergence represent dissensus or dissimilarity. For example, academic departments often specifically target applicants who have skills and research interests absent among current faculty, thereby filling a hole in the department's portfolio of knowledge and teaching expertise.

There has been a fair amount of theory in the last decade focused on developing multilevel staffing practices. Schneider et al. (2000) noted that personnel selection practices must become multilevel and suggested that between-firm differences are driven by the effects of unit-level competencies, which are composed of similarity on individual differences. Ployhart and Schneider (2002) discussed the practical implications of multilevel personnel selection. They noted that a focus on "the job" is insufficient, and they developed a model to show how practitioners could establish multilevel validity. Ployhart and Schneider (2005) then proposed a series of methodological and statistical approaches for establishing validity at multiple levels. Ployhart (2004, 2006) attempted to integrate the SHRM research on human capital with personnel selection scholarship to develop a more comprehensive multilevel selection model that should articulate selection's strategic value to the firm.

This research on multilevel selection fits within the broader movement of SHRM scholarship to link individual and unit levels. Wright and Boswell (2002) persuasively called for an integration of micro (HR) and macro (strategy) scholarship because each level has implications for the other. More recently, Gerhart (2005) and Wright and Haggerty (2005) noted that an important direction for SHRM scholarship is to move beyond establishing the effectiveness of HR practices to demonstrating how HR practices build aggregate compositions of human and social capital (competencies) linked to unit-level outcomes (interestingly, compilation models are mentioned less frequently). They essentially argued for scholars to focus on how HR practices create human and social capital emergence. Bowen and Ostroff (2004) developed the concept of HR strength, an idea that stronger (more consistent, greater internal fit) HR practices create more cohesive climates than do weaker (less consistent) HR practices. Ployhart and Moliterno (2011) described the cognitive, affective, and behavioral processes that transform individual KSAOs into unit-level human capital resources, thereby explaining why individual-level findings may not directly generalize to the firm level.

So, how might HR practices, and selection in particular, contribute to the emergence of unit-level competencies that form the basis for sustained competitive advantage? Lepak and Snell (1999) suggested different types of employee groups differ in their strategic value and uniqueness to the firm and recommended that firms should vary their HR practices accordingly. For example, firms should use commitment-based HR practices for employees who are both highly valuable and unique (e.g., top managers) but use efficiency-based HR practices for employees who are valuable but not unique (e.g., entry-level employees). Jobs have similarly been differentiated as "A" jobs and "C" jobs, with the former being central to the firm's ability to execute its strategy and the latter being important but not strategic. Selection is most likely to create unit-level impact when applied to A jobs.

As an example, in most banks the loan officer job is an important one. Loan officers are the interface between the bank and customers, and they make decisions about whether the bank should lend money. Incumbents in such positions are often evaluated on sales and service criteria. The KSAO keys to selection in this context would be those related to sales (e.g., persistence, energy, persuasion) and service (agreeableness, conscientiousness). However, much more critical to the organization's success are the far smaller number of A jobs responsible for setting the organization's overall credit policies and managing its risk. Although small in number, their impact on the firm is enormous (witness the meltdown in the financial markets from overzealous lending practices). Criteria used to evaluate these jobs might include various ratios of returns to bad loans. The necessary KSAOs would be substantially different, focusing on personality, quantitative analysis, forecasting, geopolitical trends, and the like.

Consistent across all this theory is the expectation that HR practices create a composition and/or compilation of competencies (unit KSAOs) from individual KSAOs. It bears repeating that the strategic value manifests from the unit-level competencies, not individual KSAOs. HR practices produce unit differences and may contribute to sustained competitive advantage through the creation of valuable, rare, inimitable, and nonsubstitutable competencies (human and social capital at the unit level, and collective personality-related characteristics that contribute to the formation of high-performance cultures).

Empirical research supports many of these expectations. Lepak and Snell (2002) found that firms do in fact use different HR practices for different employee groups varying in terms of value and uniqueness. Takeuchi, Lepak, Heli, and Takeuchi (2007) found that aggregate manager perceptions of employee competencies were positively related to self-reports of firm performance. Several studies have found that human capital manifests different forms of composition across units, and hence units can be distinguished in terms of aggregate individual KSAOs (Jordan, Herriot, & Chalmers, 1991; Ployhart, Weekley, & Baughman, 2006; Schaubroeck, Ganster, & Jones, 1998; Schneider, White, & Paul, 1998). More direct evidence is found in studies that link selection and/or human capital resources directly and indirectly to unit- and firm-level performance (Kim & Ployhart, 2014; Oh, Kim, & Van Iddekinge, 2015; Ployhart, Weekley, & Ramsey, 2009; Van Iddekinge, Ferris, Perrewe, Perryman, Blass, & Heetderks; 2009).

More research is needed linking HR practices to specific types of human and social capital emergence. For example, do firms that use more aligned recruiting, selection, and retention practices create more valuable and rare forms of human capital more quickly? Do such firms have greater control over the flow of human and social capital? Do firms that use such practices outperform rivals? SHRM scholarship needs to focus squarely on human and social capital emergence, thereby illuminating the black box between HR practices and unit outcomes. Fortunately, I-O psychologists and selection specialists are the torch that can light the examination of this black box.

Selection and Retention

Turnover nullifies the positive human and social capital enhancements accrued through effective selection. The extant literature suggests that effective selection can help reduce turnover (Barrick & Zimmerman, 2005), but this only scratches the surface of retention issues. For example, recent unit-level research suggests that the economic costs associated with turnover are far greater than individual research might indicate. Unit-level human and social capital losses represent the quantity and quality of talent lost through turnover, the costs of which may be greater than simply the rate of turnover (Glebbeek & Bax, 2004; Kacmar, Andrews, Rooy, Steilberg, and Cerone, 2006; Shaw, Gupta, & Delery, 2005). This is an important transition because unit-level turnover captures losses of collective processes (e.g., coordination and communication) that are not apparent in individual-level research, and turnover rates may not fully capture the costs of turnover (Dess & Shaw, 2001; Hausknecht & Holwerda, 2013). For example, service- and knowledge-based firms are highly dependent on social capital (the collective social relationships, interactions, and networks within a unit). Effective unit performance in these settings requires employees to share information about customers, services, products, and best practices. Unit turnover creates holes in social networks that have negative consequences beyond simple turnover rates (Shaw et al., 2005).

The loss of talent through turnover means the investment made in unit human capital may not be recouped, but all loss is not considered equal. For example, turnover in A jobs should be more costly than turnover in C jobs. That is, the opportunity costs of turnover in strategically critical positions should be higher than the same costs in less mission-critical positions. Similarly, higher-quality unit human capital is expected to produce more value, so turnover among top talent will incur greater opportunity costs than will turnover among lesser talent (Hausknecht & Holwerda, 2013). Turnover should also be more damaging when those who leave have more tacit knowledge (Strober, 1990) or are more centrally located in the unit's social network (Hausknecht & Holwerda, 2013). From the RBV perspective, units are not equally distributed with respect to human capital. Turnover may diminish the stock of unit human capital, but turnover among the highest-quality human capital may make that resource less valuable, rare, and more easily imitated unless replacements are equally qualified (Lepak & Snell, 1999). Because individual KSAOs tend to be normally distributed, by definition higher-quality talent will be more scarce and difficult to replace. Empirically, Shaw et al. (2005) found that unit social capital losses were associated with additional negative effects beyond mere performance losses, indicating the quality of social capital was an important factor. Research similarly finds a loss of shared tacit knowledge (Hitt, Bierman, Shimizu, & Kochhar, 2001) and an erosion of communication and coordination (Sacco & Schmitt, 2005).

Selection experts should take ownership of turnover problems. For example, an HR executive of a Fortune 500 company told one of the authors: "I tell my (HR) team that turnover means our hiring process failed." That is a bold statement (people quit for all kinds of reasons that have nothing to do with their ability to perform the job), but there is some truth to better utilizing staffing as a means to control turnover. That said, adequately solving this problem will require a deeper understanding of turnover than simply identifying the KSAOs necessary for job performance. For example, it will require an understanding of how individuals fit within the culture of the firm and characteristics of the work group, something that is rarely assessed as part of selection practices. Note that doing so would obviously contextualize selection, an idea that has been recently advocated (Cascio & Aguinis, 2008; Ployhart & Schneider, 2012). This research may help link selection to important internal processes that contribute to the firm's ability to retain the high-quality stock of strategically valuable human and social capital necessary for strategy implementation.

Talent as Assets Versus Costs

Current models of accounting treat HR-related activities as costs (and worse yet, sometimes as liabilities). Accounting is the language of business, so viewing HR as a cost likely contributes to managers' perceptions of HR not adding strategic value. It is incumbent on HR managers and staffing specialists to convey how human and social capital can become a financial asset. Unfortunately, there is no commonly accepted or widely appreciated way to value human capital resources (Fulmer & Ployhart, 2014). Chapter 10 in this volume discusses this issue in some detail, but we raise a few additional points here.

Earlier, when discussing Figure 5.1, we noted some similarities and differences between viewing staffing as a strategic process versus traditional utility analysis. We emphasize that unit-level human and social capital creates sustained competitive advantage. Therefore, it is critical to articulate the economic value of this intangible asset—what Ulrich and Smallwood (2005) called "return on intangibles." In some of our own research, we have shown how individual KSAOs emerge to create meaningful between-unit differences in human capital resources, which are in turn linked to financial performance (Ployhart et al., 2009). Thus, we showed how this "intangible asset" was in fact tangibly linked to important store financial criteria. We have also demonstrated how selection practices relate to financial performance over time, at both the business unit (Ployhart et al., 2011) and firm (Kim & Ployhart, 2014) levels.

Selection as a Lever for (or Barrier to) Change

A firm's business strategy and personnel selection practices should be fully aligned. When a firm decides to change strategic direction (e.g., by shifting from competing on cost to competing on quality or expanding into completely new markets), it should require changes in the selection process. The need for change in strategy may be signaled by a new CEO, declining market share, a paradigm threatening advance in technology, or a new entrant into the competitive landscape. In such cases, new core competencies may be required. For such competencies to emerge, selection efforts will have to focus on the KSAOs comprising the basic ingredients. When combined with appropriate changes to other HR practices (e.g., performance management, compensation, leadership and culture change), new competencies may begin to form to support execution of the firm's new strategy. Additionally, most organizational change efforts involve a substantial change in personnel, at least at the top levels of the firm. By attracting, selecting, and retaining people who share the new vision and have the skills necessary to achieve the vision, a firm can quickly and possibly radically alter its human and social capital composition (Kim & Ployhart, 2014). These are important selling points HR managers can use to secure support and resources for selection procedures.

Of course, selection can also serve as a barrier to change when it is divorced from the firm's strategy and results in the continued acquisition of employees who lack the skills or vision necessary for the company's survival. Organizations that rely on an internal labor market (i.e., hire at the entry level and promote exclusively from within) are often at a disadvantage when change becomes a necessity. Such firms may find it difficult to alter their skill mix in the short-term without reliance on talent secured from the outside. Conversely, organizations that rely on the external labor market for resources (i.e., buying the talent on the open market as needed) may be more nimble when faced with the need for change (Kim & Ployhart, 2014). An organization attempting to shift from a commodities market to an "upscale market" may find itself in need of people able to envision products worthy of a price premium (as opposed to people who focus primarily on cost control). Growing them internally would be slow, at best. The choice between promoting internally versus hiring externally is one that has important consequences (Bidwell, 2011; see also Groysberg, 2010).

Global Considerations in Selection and Strategy

Chapter 36 in this volume discusses various issues relating to the global implementation of selection practices, but here we discuss a few specific to linking selection with strategy. Clearly, organizations operating globally face a unique set of selection issues. Organizations that operate globally often have different functions located in different parts of the world (e.g., design in the United States and manufacturing in China). As a result, different core competencies are required by different parts of the organization located in different parts of the globe. Obviously, different selection criteria may be called for in different parts of the world, and thus the KSAOs matched to the competencies needed to execute respective functions will also differ.

Global selection also means that selection methods developed in one part of the world may not generalize to other countries or cultures (e.g., Ryan, McFarland, Baron, & Page, 1999). Even where the same competencies are desired, indicating the same KSAOs are required, different or at least modified methods may be required to identify people who possess them. For example, it is well established that personality measures are affected by response styles (e.g., extreme responding, acquiescence), which in turn vary across cultures. Other selection methods like biodata and situational judgment, which are usually developed and keyed at a local level, may not generalize across cultural boundaries (Lievens, 2006). The obvious point is that globalization greatly compounds the challenges facing selection researchers who are attempting to build the corporate competencies required to support execution of the business strategy and impact key outcomes. The talent necessary to compete in one local economy (e.g., China, India) may contribute little to supporting the organization's overall strategy. For example, suppose a U.S.-based organization opens a manufacturing facility in China. The organization may choose to employ local managers because they have expertise in Chinese culture and business practices, but they may lack some key competencies necessary for them to understand how their operation adds value to the overall firm. Hence, assuming some autonomy, they may make choices that run counter to the firm's strategy even though they are successful locally. The critical issue is alignment between the firm's strategy and talent within and across geographic locations.

Selection Influences Diversity

Strategy, selection, and diversity are an important combination for at least two reasons. First, many firms report that increasing, or at least valuing, diversity is one of their corporate goals.

Whether this is done because they think it helps the bottom line, for social responsibility, or simply to enhance public relations, the fact remains that many firms place a premium on attracting diverse talent. In short, diversity may be part of the firm's strategy. Many firms will only use a systematic selection process to the extent it increases diversity—validity will often take a secondary role, if it takes a role at all. A common scenario is an organization choosing to not implement a locally validated cognitive ability test because of the concomitant adverse impact implications. (Note that in this section, our treatment of diversity is primarily in terms of demographic diversity; psychological diversity is actually a subset of compilation models discussed earlier.)

However, it should be remembered that selection is the only way to influence demographic diversity (notwithstanding mergers and acquisitions). Thus, selection is the primary mechanism for enhancing diversity, and arguing for selection in this respect can be a powerful means to articulate its value (Ployhart, 2006). For example, one of the authors worked on developing a selection system for investment bankers. Because the investment banking community is rather small, many of the hires were based on recommendations from current employees. Relying on recommendations from internal employees almost ensures the status quo with respect to demographic diversity. The line director wanted a systematic selection practice because he believed it would result in a more demographically diverse slate of applicants.

Selection Supports Talent Segmentation

The strategy determines which jobs are A jobs and which are C jobs. Selection's role is in recognizing which jobs are most critical, why they are so (e.g., because they directly impact the emergence of core competencies), and in ensuring an adequate supply of talent in those jobs (through attraction, selection, and/or retention). One problem facing selection researchers is that the C jobs are often the high-population jobs most suitable to local validation efforts. The truly critical jobs for an organization may encompass a relatively small population, making criterion-related validation efforts difficult at best. Research on the unit-level impact of alternative validation strategies is clearly needed.

Although the strategy determines which are A jobs, performance largely determines who is considered an A player. Selection specialists can play a critical role in a firm's success to the extent they can match A players with A jobs. Firms that are successful in placing their most talented individuals in the most mission-critical jobs should be more successful than those that take a more casual approach to placement. However, the role is not limited to selecting talent. It also involves deselecting marginal performers from critical jobs. If the job is truly essential to the execution of the firm's strategy, then rigorous performance management, including the reallocation or separation of weak performers, becomes an important if unpleasant task.

Selection Helps Develop a Critical Mass

The assumption in staffing is that adding higher-quality employees will improve the firm's effectiveness in a linear manner. This is the basis of basic utility analysis. Yet SHRM research provides some theory to suggest that a unit must develop a *critical mass* of talent for it to be strategic. Unit-level competencies, such as customer service or conscientiousness (e.g., package delivery), are unlikely to emerge where only a few members of the unit possess the appropriate individual-level KSAOs. In essence, Figure 5.1 suggests that hiring only one or a few highly talented applicants is unlikely to produce sustained competitive advantage. Rather, there must be sufficient quantities and quality so that "human and social capital emerges" and hence can influence unit-level outcomes (Ployhart, 2006).

If correct, this has two important implications. First, it means that human and social capital has a minimum threshold that must be passed to ensure contribution to sustained competitive advantage. This means that an adequate flow (attraction and retention) of talent becomes paramount. Second, it means that human and social capital might also have a maximum threshold, or at least a point of diminishing returns. This would indicate a point where there is little relative value to be gained by more effective selection, at least to the extent retention is stable. There is almost no research that speaks to these issues, but such research is necessary because both implications are counter to utility analysis.

SELECTION'S SYMBIOTIC RELATIONSHIP WITH OTHER HR ACTIVITIES

It has been argued that unit-level human capital resources can produce strategic benefits and that they are the result of the careful alignment of selection and other HR programs with the firm's strategy. Selection is merely one way in which an organization can influence the talent it employs. Clearly, training and development activities can impact individual-level talent and ultimately unit competence (Ployhart & Hale, 2014). Performance management systems similarly can signal desired behaviors and shape the development and utilization of unit competencies. Compensation systems can be designed to reward the acquisition of individual knowledge, skills, and abilities that support unit competency (e.g., pay-for-knowledge systems) and can play an important role in recruitment and retention. The largest impact comes when all elements of the HR system are congruent in terms of effect; all point toward and support the development of the same unit-level competencies linked to the firm's strategy.

HR executives are under increasing pressure to demonstrate the value the function adds to the organization. Boards of directors are increasingly demanding evidence of an adequate return on investment for HR-related expenditures. To meet this challenge, practitioners have begun examining group-level outcomes as they relate to HR activities. For example, in the survey arena, linkage studies are increasingly common as HR executives seek to demonstrate that employee engagement and satisfaction are related to important outcomes. A similar approach is being applied to selection—demonstrating unit-level outcomes of individual-level selection systems (e.g., Kim & Ployhart, 2014; Ployhart et al., 2009; Ployhart et al., 2011; Van Iddekinge et al., 2009).

CONCLUSIONS

In this chapter, we have argued that selection scholarship must be expanded to consider how, when, and why personnel selection practices will contribute to creating business-unit-level value and sustained competitive advantage. We noted that in contrast to expectations, effective selection practices will not always translate into firm-level value. Table 5.1 summarizes the main implications of our chapter.

TABLE 5.1

Summary of Key Implications: Integrating Strategic Human Resources with Personnel Selection

1. *Only unit-level human capital and social capital resources can offer strategic value to the firm*. Personnel selection and selection on targeted individual-level KSAOs can only contribute to the firm's strategy insofar as they contribute to the emergence of strategically valuable unit-level human and social capital resources.
2. *Individual-level criterion-related validity is insufficient evidence to demonstrate the strategic value of selection*. It is necessary, but not sufficient. Poor use of selection can create a competitive *dis*advantage, but using selection procedures that predict individual job performance is no guarantee that personnel selection will contribute to the firm's sustained competitive advantage.
3. *Validity at the individual level generalizes across contexts, but the validity of unit-level human capital and social capital does not generalize*. The extent to which these unit-level competencies have relationships with unit outcomes is dependent on the firm's strategy, market, competitors, competitive environment, and related factors. Indeed, if unit-level human and social capital are to add value to the firm's competitive advantage, then the firm would not want these relationships to generalize to other firms!
4. *Selection practices that rely more on firm-specific KSAOs may contribute to competitive advantage more strongly that practices that rely on more generic KSAOs*. Cognitive ability and personality scores have generalizable validity, but the benefits of such KSAOs may not necessarily *differentiate* a firm's human capital resources as much as KSAOs that are more specific to a firm (e.g., KSAOs based on situational judgment or interviews).
5. *Demonstrating the strategic value of personnel selection usually requires a longitudinal focus*, because selection (and related HR) practices must be implemented appropriately over time to create a critical mass of unit-level human and social capital emergence.

6. *A critical mass of aggregate KSAOs is necessary to influence unit-level consequences*. This has three important implications. First, the development and sustainability of this critical mass is likely to be dynamic and nonlinear. Second, the relationships between unit-level human and social capital are likely to be dynamic and nonlinear with unit-level outcomes. Third, there is likely a threshold of diminishing returns; a tipping point where adding more talent is unlikely to provide the same value to the firm.
7. *Because performance criteria are not isomorphic between the individual and unit levels, there is the possibility that different predictors of performance will be present at each level*.

As a consequence of the issues summarized in Table 5.1, we have also tried to articulate ways through which selection practices can manifest such value. Much is currently written about how the HR profession needs to be part of the firm's strategic decision-making team; this is even more true for I-O psychology. Being able to demonstrate selection's contribution to the firm's strategy is one way to accomplish this goal. Although the road toward establishing empirical connections between selection practices and business unit sustained competitive advantage will not be easy or quick, we believe it is vital for the future of our profession and I-O psychology's own strategic direction.

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REFERENCES

Anderson, N. R. (2005). Relationships between practice and research in personnel selection: Does the left hand know what the right is doing? In A. Evers, N. R. Anderson, & O. Smit-Voskuyl (Eds.), *The Blackwell handbook of personnel selection* (pp. 1–24). Oxford, England: Blackwell.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*, 99–120.

Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management, 37*, 31–46.

Barrick, M. R., & Zimmerman, R. D. (2005). Reducing voluntary, avoidable turnover through selection. *Journal of Applied Psychology, 90*, 159–166.

Becker, B. E., & Huselid, M. A. (2006). Strategic human resource management: Where do we go from here? *Journal of Management, 32*, 898–925.

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis with special reference to education*. New York, NY: National Bureau of Economic Research.

Bidwell, M. (2011). Paying more to get less: Specific skills, matching, and the effects of external hiring versus internal promotion. *Administrative Science Quarterly, 56,* 369–407.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 349–381). San Francisco, CA: Jossey-Bass.

Bowen, D. E., & Ostroff, C. (2004). Understanding HRM-firm performance linkages: The role of the "strength" of the HRM system. *Academy of Management Review, 29*, 203–221.

Cascio, W. F., & Aguinis, H. (2008). Staffing twenty-first-century organizations. *Academy of Management Annals, 2*, 133–165.

Chadwick, C., & Cappelli, P. (1999). Alternatives to generic strategy typologies in strategic human resource management. In P. M. Wright, L. D. Dyer, J. W. Boudreau, & G. T. Milkovich (Eds.), *Research in personnel and human resources management*, (Suppl. 4, pp. 1–29). Stamford, CT: JAI Press.

Colbert, B. A. (2004). The complex resource-based view: Implications for theory and practice in strategic human resource management. *Academy of Management Review, 29*, 341–358.

Combs, J., Yongmei, L., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology, 59*, 501–528.

Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal, 29*, 802–835.

DeNisi, A. S., Hitt, M. A., & Jackson, S. E. (2003). The knowledge-based approach to sustainable competitive advantage. In S. E. Jackson, M. A. Hitt, & A. S. DeNisi (Eds.), *Managing knowledge for sustained competitive advantage* (pp. 3–33). San Francisco, CA: Jossey-Bass.

Dess, G. G., & Shaw, J. D. (2001). Voluntary turnover, social capital, and organizational performance. *Academy of Management Review, 26*, 446–456.

Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science, 35*, 1504–1511.

Fulmer, I. S., & Ployhart, R. E. (2014). "Our most important asset:" A multidisciplinary/multilevel review of human capital valuation for research and practice. *Journal of Management, 40*, 161–192.

Gerhart, B. (2005). Human resources and business performance: Findings, unanswered questions, and an alternative approach. *Management Revue, 16*, 174–185.

Glebbeek, A. C., & Bax, E. H. (2004). Is high employee turnover really harmful? An empirical test using company records. *Academy of Management Journal, 47*, 277–286.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*, 109–122.

Groysberg, B. (2010). *Chasing stars: The myth of talent and the portability of performance*. Princeton, NJ: Princeton University Press.

Guion, R. M. (1998). *Assessment, measurement, and prediction for personnel decision* (2nd ed.). Mahwah, NJ: Erlbaum.

Hausknecht, J. P., & Holwerda, J. A. (2013). When does employee turnover matter? Dynamic member configurations, productive capacity, and collective performance. *Organization Science, 24*(1), 210–225. doi:10.1287/orsc.1110.0720

Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, *44*, 13–28.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal, 38*, 635–672.

Jiang, K., Lepak, D. P., Hu, J., & Baer, J. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, *55*, 1264–1294.

Jordan, M., Herriot, P., & Chalmers, C. (1991). Testing Schneider's ASA theory. *Applied Psychology, 40*, 47–53.

Kacmar, K. M., Andrews, M. C., Rooy, D. L. V., Steilberg, R. C., & Cerone, S. (2006). Sure everyone can be replaced . . . but at what cost? Turnover as a predictor of unit-level performance. *Academy of Management Journal, 49*, 133–144.

Kim, Y., & Ployhart, R. E. (2014). The effects of staffing and training on firm productivity and profit growth before, during, and after the Great Recession. Monograph. *Journal of Applied Psychology, 99*, 361–389.

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions.* (pp. 3–90). San Francisco, CA: Jossey-Bass.

Latham, G. P., & Whyte, G. (1994). The futility of utility analysis. *Personnel Psychology, 47*, 31–46.

Lepak, D. P., & Snell, S. A. (1999). The human resource architecture: Toward a theory of human capital allocation and development. *The Academy of Management Review, 24*, 34–48.

Lepak, D. P., & Snell, S. A. (2002). Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. *Journal of Management, 28*, 517–543.

Lievens, F. (2006). International situational judgment tests. In J. A. Weekley & R. E. Ployhart (Eds.), *Situational judgment tests* (pp. 279–300). Mahwah, NJ: Lawrence Erlbaum.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review, 23*, 242–266.

Noe, R. A., Colquitt, J. A., Simmering, M. J., & Alvarez, S. A. (2003). Knowledge management: Developing intellectual and social capital. In S. E. Jackson, M. A. Hitt, & A. S. DeNisi (Eds.), *Managing knowledge for sustained competitive advantage* (pp. 209–242). San Francisco, CA: Jossey-Bass.

Oh, I-S., Kim, S., & Van Iddekinge, C. H. (2015). Take it to another level: Do personality-based human capital resources matter to firm performance? *Journal of Applied Psychology, 100*, 935–947.

Oldham, G. R. (2003). Stimulating and supporting creativity in organizations. In S. E. Jackson, M. A. Hitt, & A. S. DeNisi (Eds.), *Managing knowledge for sustained competitive advantage* (pp. 274–302). San Francisco, CA: Jossey-Bass.

Ployhart, R. E. (2004). Organizational staffing: A multilevel review, synthesis, and model. In J. Martocchio (Ed.), *Research in personnel and human resource management* (Vol. 23, pp. 121–176). Oxford, England: Elsevier.

Ployhart, R. E. (2006). Staffing in the 21st century. *Journal of Management, 32*, 868–897.

Ployhart, R. E. (2012). The psychology of competitive advantage: An adjacent possibility. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 5*, 62–81.

Ployhart, R. E., & Hale, D., Jr. (2014). The fascinating psychological microfoundations of strategy and competitive advantage. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 145–172.

Ployhart, R. E., & Moliterno, T. P. (2011). Emergence of the human capital resource: A multilevel model. *Academy of Management Review, 36*, 127–150.

Ployhart, R. E., & Schneider, B. (2002). A multilevel perspective on personnel selection: Implications for selection system design, assessment, and construct validation. In F. J. Dansereau & F. Yammarino (Eds.), *Research in multi-level issues Volume 1: The many faces of multi-level issues* (pp. 95–140). Oxford, England: Elsevier Science.

Ployhart, R. E., & Schneider, B. (2005). Multilevel selection and prediction: Theories, methods, and models. In A. Evers, O. Smit-Voskuyl, & N. Anderson (Eds.), *Handbook of personnel selection* (pp. 495–516). Oxford, England: Blackwell.

Ployhart, R. E., & Schneider, B. (2012). The organizational context of personnel selection. In N. Schmitt (Ed.), *The Oxford handbook of assessment and selection* (pp. 48–67). Oxford: Oxford University Press.

Ployhart, R. E., Nyberg, A. J., Reilly, G., & Maltrich, M. (2014). Human capital is dead; long live human capital resources! *Journal of Management, 40*, 371–398.

Ployhart, R. E., Van Iddekinge, C. H., & MacKenzie, W. I., Jr. (2011). Acquiring and developing human capital in service contexts: The interconnectedness of human capital resources. *Academy of Management Journal, 54*, 353–368.

Ployhart, R. E., Weekley, J. A., & Baughman, K. (2006). The structure and function of human capital emergence: A multilevel examination of the ASA model. *Academy of Management Journal, 49*, 661–677.

Ployhart, R. E., Weekley, J. A., & Ramsey, J. (2009). The consequences of human resource stocks and flows: A longitudinal examination of unit service orientation and unit effectiveness. *Academy of Management Journal, 52*, 996–1015.

Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review, 68*, 79–91.

Ryan, A. M., McFarland, L. A., Baron, H., & Page, R. (1999). An international look at selection practices: Nation and culture as explanations for variability in practice. *Personnel Psychology, 52*, 359–391.

Rynes, S. L., Brown, K. G., & Colbert, A. E. (2002). Seven misconceptions about human resource practices: Research findings versus practitioner beliefs. *Academy of Management Executive, 16*, 92–103.

Sacco, J. M., & Schmitt, N. (2005). A dynamic multilevel model of demographic diversity and misfit effects. *Journal of Applied Psychology, 90*, 203–231.

Saks, A. M. (2005). The impracticality of recruitment research. In A. Evers, O. Smit-Voskuyl, & N. Anderson (Eds.), *Handbook of personnel selection* (pp. 47–72). Oxford, England: Blackwell.

Schaubroeck, J., Ganster, D. C., & Jones, J. R. (1998). Organization and occupation influences in the attraction-selection-attrition process. *Journal of Applied Psychology, 83*, 869–891.

Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*, 262–274.

Schneider, B. (1987). The people make the place. *Personnel Psychology, 40*, 437–454.

Schneider, B., Smith, D. B., & Sipe, W. P. (2000). Personnel selection psychology: Multilevel considerations. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions.* (pp. 91–120). San Francisco, CA: Jossey-Bass.

Schneider, B., White, S. S., & Paul, M. C. (1998). Linking service climate to customer perceptions of service quality: Test of a causal model. *Journal of Applied Psychology, 83*, 150–163.

Schuler, R. S., Galante, S. P., & Jackson, S. E. (1987). Matching effective HR practices with competitive strategy. *Personnel, 64*, 18–27.

Shaw, J. D., Duffy, M. K., Johnson, J. L., & Lockhart, D. E. (2005). Turnover, social-capital losses, and performance. *Academy of Management Journal, 48*, 594–606.

Shaw, J. D., Gupta, N., & Delery, J. E. (2005). Alternative conceptualizations of the relationship between voluntary turnover and organizational performance. *Academy of Management Journal, 48*, 50–68.

Strober, M. H. (1990). Human capital theory: Implications for HR managers. *Industrial Relations, 23*, 214–239.

Takeuchi, R., Lepak, D. P., Heli, W., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *Journal of Applied Psychology, 92*, 1069–1083.

Taylor, M. S., & Collins, C. J. (2000). Organizational recruitment: Enhancing the intersection of theory and practice. In C. L. Cooper & E. A. Locke (Eds.), *Industrial and organizational psychology: Linking theory and practice* (pp. 304–334). Oxford, England: Blackwell.

Terpstra, D. E., & Rozell, E. J. (1993). The relationship of staffing practices to organizational level measures of performance. *Personnel Psychology, 46*, 27–48.

Ulrich, D., & Smallwood, N. (2005). HR's new ROI: Return on intangibles. *Human Resource Management, 44*, 137–142.

Van Iddekinge, C. H., Ferris, G. R., Perrewe, P. L., Perryman, A. Z., Blass, F. R., & Heetderks, T. D. (2009). Effects of selection and training on unit-level performance over time: A latent growth modeling approach. *Journal of Applied Psychology, 94*, 829–843.

Whyte, G., & Latham, G. P. (1997). The futility of utility analysis revisited: When even an expert fails. *Personnel Psychology, 50*, 601–610.

Wright, P. M., & Boswell, W. R. (2002). Desegregating HRM: A review and synthesis of micro and macro HR research. *Journal of Management, 28*, 247–276.

Wright, P. M., Dunford, B. D., & Snell, S. A. (2001). Human resources and the resource-based view of the firm. *Journal of Management, 27*, 701–721.

Wright, P. M., Gardner, T. M., Moynihan, L. M., & Allen, M. R. (2005). The relationship between HR practices and firm performance: Examining causal order. *Personnel Psychology, 58*, 409–446.

Wright, P. M., & Haggerty, J. J. (2005). Missing variables in theories of strategic human resource management: Time, cause, and individuals. *Management Revue, 16*, 164–173.