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In The Trenches At The Talent Wars: An Examination Of Competitive Interaction For Human Resources In The Software Industry

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Keywords
organization, performance, research, firm, employee, HRS, management, human resource

Comments

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In The Trenches At The Talent Wars: An Examination Of Competitive Interaction For Human Resources In The Software Industry

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research available to others interested in preliminary form to encourage discussion and suggestions.

Abstract

In this study, I attempted to extend strategic human resource management theory by developing and testing a model of inter-firm competition for human resources. Using the phenomenon of talent raiding as a vehicle to test the model, I examined how degree of threat and firm capability affected firms' propensities to respond to rivals' actions. Results suggest that attributes of the raiding firm, attributes of the raided human capital, and attributes of the target firm were associated with target firms' propensity to defend or retaliate in response to a successful talent raid. The findings have implications for a tactical theory of human resource management and the origins of intra-firm differences in human resource systems.

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A number of analysts have suggested that one of Wal-Mart's sources of competitive advantage is its homegrown data warehouse and inventory management systems (Barney, 1997). In 1998, internet retailer Amazon.com hired 15 of Wal-Mart's IT and logistics professionals intimately familiar with these systems. Alleging the poaching of these employees constituted theft of trade secrets, Wal-Mart responded by filing suit against Amazon and two affiliates. Settling the suit out of court, Amazon agreed to reassign most of the poached employees and refrain from actively recruiting Wal-Mart employees for 12 months (Schwartz & Salamone, 1999). Similar competitive interactions have been observed between Microsoft and Borland, Sears and Montgomery Wards, and SAP and Siebel (Bordwin, 1999).

These anecdotes appear to have the hallmarks of competitive interactions. A competitive interaction typically involves one firm initiating an action to gain temporary or long-term advantage relative to rivals and subsequent reactions from rivals seeking to protect or regain threatened competitive advantages (Chen, 1996). It is generally accepted that firms compete head-to-head with rival firms for control of customers (i.e. market share) and revenues to cover the cost of the chosen mode of operation and survival (Rumelt, Schendel & Teece, 1991). The anecdotes above suggest the interesting possibility that firms also engage in head-to-head competition for human capital. In this paper, I present a framework suggesting that the degree of threat posed by competitors' actions and firms' ability to respond to such actions will explain how firms respond to the actions of rivals in the market for human capital.

The existence of inter-firm competition for human capital is consistent with strategic management and human capital theories. Human capital is a valuable, limited resource necessary for the attainment of organizational goals. Three generations of utility theory researchers have demonstrated that the job performance of individuals and groups has financial consequences for the firm (Boudreau, 1992). Supporting work in the strategy literature suggests that human capital has a strong, positive relationship with firm performance (Hitt, Bierman, Shimizu & Kochhar, 2001). Furthermore, firms are limited in the quality and quantity

of human capital they can employ due to labor market and organizational size constraints (Steffy & Maurer, 1988). Thus, firms that incrementally accrue talent and defend against its loss will build pools of human capital superior to firms less successful in recruiting and retaining talent.

There are a number of ways that competition for human capital may be manifest. Actions that are used to gain advantage over labor market rivals include initiating recruitment efforts, changing pecuniary (wages, benefits, variable pay risk) and nonpecuniary (job design etc.) aspects of the employment relationship, recruiting the employees of geographic and labor market competitors, and tapping into non-traditional labor markets (Rynes & Barber, 1990). These tactics impact rivals' in three ways. First, such tactics decrease the number of qualified applicants attracted to rivals' open positions. Second, aggressive labor market competitors deplete rivals' human capital pools by "cherry-picking" high performing, high value employees. Finally, inter-firm personnel transfer may result in the transfer of proprietary knowledge about operations, strategies, and customers to an industry competitor (Bordwin, 1999; Finlay & Coverdill, 2002; Rao & Drazin, 2002). To protect or regain competitive advantages, firms may attempt to imitate rivals' actions, ameliorate the expected damages, or retaliate against the acting firm (as Wal-Mart did against Amazon.com).

This paper offers a new stream of research that attempts to model competitive interaction for human resources. Strategic human resource management and competitive dynamics theories alone are inadequate to explain human capital competition. While the strategic HR literature has shed light on the antecedents of HR strategies (Arthur, 1992) and the relationship between human resource management practices and various organizational outcomes (Guthrie, 2001) there has not been a systematic consideration of the strategies firms use to gain and protect human capital advantage. Furthermore, as competitive dynamics theory was developed around customers and revenues as a basis of competition, factors driving human capital competition has not before been considered. In addition to contributing to

strategic management theory, I hope that identifying and modeling the drivers of human capital moves and counter-moves will provide practical implications both for firms seeking to enhance their human capital pool and firms seeking to reduce the loss of valuable employees and the intangible assets they carry.

Theory And Hypotheses

To structure the process of theory development and to generate an adequate database of observable actions and reactions, I chose to study the competitive dynamics associated with talent raiding and responding to talent raids. A talent raid is usually defined as a recruiting tactic whereby a competitor successfully hires a plurality of employees from a competitor. Raiding differs from poaching in that instead of hiring one key employee, the rival hires multiple employees (Sullivan, 2000).

The practice of one firm raiding the employees of another is not an unusual phenomenon. There are a variety of indicators that the social norms that once constrained labor market competitors from hiring each other's employees are breaking down. These include: (1) surveys showing that firms are increasingly hiring fully trained workers from their competitors rather than developing them internally (Rynes, Orlitzky & Bretz, 1997); (2) the dramatic growth in the revenues of headhunting firms over the last 10 years (Cappelli, 1999); and (3) the prodigious growth in the number of lawsuits filed by firms against their competitors for conducting talent raids (Armour, 1999). Talent raiders gain access to valuable intangibles in addition to employees with specific, desired skills. These include quick access to new technologies, market niches, and customer lists (Bordwin, 1999; Finlay & Coverdill, 2002). Firms in a number of industries choose talent raids as an alternative to mergers and acquisitions in order to move quickly into new markets and avoid the problems with post-merger integration (Bordwin, 1999; Cappelli, 1999). While this study is based on the phenomenon of talent raiding, the factors that explain firms' propensity and mode of responding to these actions will give insights into the broader range of competitive interactions for human resources.

Responding to Competitors' Actions

Once a firm concludes they have been or will be affected by a competitor's actions in the labor market, organizational decision-makers face a number of choices. First, firms can choose to respond or not respond. Firms that decide to respond to a talent raid have a number of tactics from which to choose. Examples include changing employee pay, improving employee communications, filing lawsuits against the raiding firm, and conducting retaliatory talent raids against the raiding firm (Sullivan, 2000). Theoretical and empirical competitive dynamics research distinguishes between defensive responses and retaliatory responses to competitors' actions (Karnani & Wernerfelt, 1985; Porter, 1980; Ramaswamy, Gatignon & Reibstein, 1994.) A defensive move is any counter-action that attempts to minimize the negative consequences associated with the action and/or decrease the probability of success of similar actions from the same or other competitors without directly, negatively impacting the responding firm's rivals (Porter, 1980; Ramaswamy, et al., 1994). In starkest terms, retaliatory actions involve threatening or taking harmful actions against a competitor in response to the competitors' past action(s) with the intention of discouraging similar actions by the same or other competitors (Karnani & Wernerfelt, 1985; Porter, 1980; Ramaswamy, et al., 1994).

Past empirical studies suggest that firms generally do not respond to rivals' actions with discrete, singular responses. Firms that choose to respond generally initiate multiple responses (Chen, Smith & Grimm, 1992; Grimm & Smith, 1997). Thus the classification scheme described above is an effective framework for classifying discrete responses to talent raids but is not fully descriptive of firms' modes of responding to talent raids.

This difficulty may be resolved by examining other scholarly literature outside of the organizational sciences. The study of head-to-head competition and responses to aggression crosses many academic disciplines. This includes animal psychology (Blanchard & Blanchard, 1984), human psychology (Scott, 1975), economics (Fehr & Gachter, 2002), military strategy (Kuperaman, 2001), and many others. Across these disciplines, a typology classifying entities'

(animals, humans, groups, organizations, states) by their propensity to respond to competitors' actions in one of three mutually exclusive ways is explicitly presented in some fields (Blanchard & Blanchard, 1984; Kuperaman, 2001) and left implicit in others (Onuf, 1974). These categories include Non-Responders, Defenders, and Retaliators and are consistent with typologies of discrete responses presented in the business strategy literature (Karnani & Wernerfelt, 1985; Porter, 1980; Ramaswamy, et al., 1994).

Entities that fail to respond to competitors' actions with either defensive or retaliatory tactics are de facto "Non-Responders." Entities that exclusively respond with one or more defensive actions are classified as "Defenders." Difficulties with this scheme arise when attempting to classify firms that respond with both defensive and retaliatory tactics and firms that respond with retaliatory tactics only. Across the various fields of study of the response to aggression is the normative observation that retaliatory tactics, if initiated to harm an aggressor, are very rarely used in isolation and almost always used in combination with tactics to avoid or reduce the potential harm of the aggressor's actions (Kuperaman, 2001; Onuf, 1974; Scott, 1975). Organizations' highest priority when faced with external harm is harm-avoidance and self-preservation (Dutton & Jackson, 1987); of lesser importance is identifying and punishing the agent(s) responsible for harm (Weiner, 1995). Thus "pure retaliators," firms that respond solely with retaliatory responses are unlikely to be observed (Scott, 1975) and as reviewed below were not observed in this study. Thus firms that combine defensive and retaliatory tactics will be classified as Retaliators[1].

The following sections suggest that two broad factors, degree of threat and firm capability of responding, are useful for predicting firms' mode of responding to a talent raid. Multinomial logistic regression will be used to model the three category choice firms face in deciding how to respond to a talent raid; hypotheses will be constructed in accordance with the nature of this empirical model.

[1] This group might more accurately be called "defensive retaliators." To keep things simple, I will call them "Retaliators."

Degree of Threat as a Determinant of Firm Response to a Talent Raid

The degree of threat posed by a rival's actions is a key determinant of how firms respond to the actions of rival firms (Dutton & Jackson, 1987; Porter, 1980). A long line of research has suggested that organizational responses to the external environment are driven in large part by the interpretations and actions of its executives (Chattopadhyay, Glick & Huber, 2001). The greater the threat posed by a rival's actions the greater the likelihood the key decision makers will notice, assess the consequences, and marshal the resources to react (Chen, et al., 1992; Dutton & Jackson, 1987). Additionally, the greater the potential negative consequences of a competitor's action for the target firm the greater the payoffs to take action to prevent or reduce the potential harm (Chen, et al., 1992). Drawing upon both competitive dynamics and strategic HR theory, I suggest in the following sections that attributes of the instigating firm and attributes of the affected human capital determine the degree of threat of a rival's action and thus affect how a firm will respond to a talent raid.

Product Market Competitors. According to economic, strategic, and organizational theory, the greater the similarity in the markets in which firms compete, the greater the rivalry between the firms (Baum & Korn, 1996, p. 258; Chen, 1996). Firms' compete for human resources in three different markets: skill/occupational, industry, and geographic labor markets (Milkovich & Newman, 1993). By definition, if one firm raids the employees of another they are competing in the same skill/occupational market. From the perspective of the target firm, the raider may or may not be competing in the same industry or geographic labor markets.

When firms compete for customers in the same industry or product market, they frequently have the same technologies, processes, resource demands, and skill requirements (Chen, 1996; Teece, Pisano & Shuen, 1997). Talent raids initiated by product market competitors pose a triple threat to the targeted firms. First, as with all talent raids, there is the threat of loss of valuable human capital (Lepak & Snell, 1999). Second, product market competitors are more likely to have similar skill needs increasing the variety of potentially

targeted employees (Baum & Korn, 1996). For example, competing insurance companies are more likely to share a need for actuaries than an insurance company and a wood-product manufacturer. Third, the target firm is damaged as the product market competitor will likely be able to profit from the skills, strategic plans, and proprietary knowledge of the raided employee at the expense of the raided firm (Adler, 1999; Rao & Drazin, 2002).

The mutual forbearance hypothesis suggests that, ex ante, firms that compete in overlapping product markets are less likely to initiate price and product competition than firms with moderate or low product market overlap. Each firm is held in check by the threat of aggressive competition from the other (Jayachandran, Gimeno & Varadarajan, 1999). However, once a competitor initiates a tactic to gain advantage over such competitors, multi-market competition theory predicts that competitive response will be more intense due to the increased ability and opportunity of similar, interacting rivals to retaliate against one another (Jayachandran, et al., 1999; Karnani & Wernerfelt, 1985). Thus it is expected firms will be strongly threatened by talent raids initiated by product market competitors. The opportunity and ability of similar, interacting firms increases the likelihood the response will be retaliatory in nature.

> Hypothesis 1: Firms targeted by talent raids are more likely to respond in a retaliatory manner the greater the product market overlap of the two firms.

Labor Market Competitors. Talent raiders that are local labor market competitors pose a unique threat to target firms and are expected to impact their propensity to respond to a raid. Relative to a raider located outside a target firm's local labor market, a raiding firm inside this boundary poses a greater threat. Due to low or no additional commuting/relocation costs, a local raider may be able to induce employees to accept alternative employment at lower marginal costs than raiders with employment opportunities that require extensive commuting or relocation (Dessendre & Moline, 1999). Second, this lower cost of recruiting from a nearby target firm increases the chance the raider will focus on the same firm in future raids. The

increased threat posed by a raid initiated by a local labor market competitor increases the likelihood that a target firm will respond by initiating defensive tactics.

> Hypothesis 2: Target firms are more likely to respond to talent raids in a defensive manner when initiated by firms located within the boundary of the firm's local labor market than talent raids initiated by firms located outside the target firm's local labor market.

Now, with Hypotheses 1 and 2 in mind, a raiding firm that is both a product-based and local labor market competitor poses a very strong threat to the target firm. First, when the raider is both a product and geographic labor market competitor, it has the greatest opportunity of choosing the highest quality, specifically qualified employees rather than just the ones willing to relocate. Second, the raiding firm is likely to find a larger number of desirable employees to recruit and hire. And third, absent any response from the target firm, the raider will be able to initiate periodic raids as business needs present themselves. The increased threat faced by the target firm combined with the increased opportunity and ability of the target firm to attack a familiar competitor increases the likelihood the response to the raid will be retaliatory in nature.

> Hypothesis 3: The positive relationship between degree of product market overlap and likelihood of responding to a talent raid in a retaliatory manner will be stronger when the talent raider is also a local labor market competitor.

Value of Targeted Human Capital. Human resource strategy involves making choices regarding the management of people contingent on business strategy, the competitive context, and the value of human capital (Chadwick & Cappelli, 1998; Wright & McMahan, 1992). I therefore expect that such characteristics as the value and transferability of the human capital targeted for a talent raid will affect how a firm responds to a talent raid (Lepak & Snell, 1999).

Valuable employee groups are, according the Resource Based View of the firm, those that facilitate the achievement of competitive advantage (Lepak & Snell, 1999). As firm performance is at least partially a function of the value of its human capital (Hitt, et al., 2001),

organizations are expected to make greater investments in employees as their value to the organization increases.

The above suggests that the greater the value of the employees targeted by a talent-raiding competitor, the greater the threat to the firm's value creating capabilities. Previous studies of the dynamics of competitive interaction found that the more a competitor's move threatened the revenue stream of an affected firm, the greater the likelihood the firm would respond to the competitor's action (Chen, et al., 1992). Thus, the greater the value creating capability of the raided human capital, the greater the likelihood the target firm will respond in a defensive manner.

Additional theory and research have suggested that the greater the threat to the value creating capabilities of the firm the more *intense* the response. The purpose of retaliation is to both stop the current attack and deter future attacks from the same or other firms. The greater the intensity of the response the less likely the same or other firms will attempt to raid employees in the future (Karnani & Wernerfelt, 1985). Previous research has shown that the greater the strategic importance of the market threatened by new business entry or new product entry the greater the resources allocated to the response by established firms (Ramaswamy, et al., 1994). Thus we should expect that the greater the value of the human capital threatened by a talent raid, the greater the likelihood the target firm will aggressively respond with lawsuits, counter-poaching, or like tactics.

> Hypothesis 4: Firms targeted by talent raids will be more likely to respond in a (a) defensive and (b) retaliatory manner the greater the value of the targeted human capital.

<u>Transferability of Targeted Human Capital</u>. Human capital theory suggests that an individual's or group's human capital can be decomposed into that which is valuable to a specific employer and that which has value in the broader labor market. Stevens (1994) suggested only perfectly firm-specific skills are valuable to only one organization. In practice, skills may vary on a continuum from being useful to a single firm, a small number of firms, a

large number, or all firms. Steven's (1994) dubbed this continuum of usefulness "transferability" while Trevor (2001) called it "movement capital" and suggested individuals with greater movement capital were better able to move across the labor market.

While in an organization's employ, workers develop both transferable and firm-specific skills. I expect that the greater the transferability of human capital developed within an organization the greater the likelihood firms will retaliate in response to a talent raid of valuable employees. A number of factors explain this dynamic. First, firm-specific skills are less useful to outside employers; thus even with employee groups responsible for significant value creation, there is a reduced threat that the raiding or other firms will raid the same type of employees in the future. Conversely, if the raiding company has been successful in hiring employees with transferable skills, there is the increased threat the raider or another rival will have a need for and recruit similar employees in the future (Coff, 1999). Second, due to informational asymmetries, employing firms have better knowledge about job incumbents than recruiting organizations. However, as the transferability of the skills increase, outside firms are better able to judge the quality of the skills making it easier for the recruiting firm to identify and hire employees with higher marginal productivities thus increasing the risk of future losses of highly productive, value creating employees (Coff, 1999). Third, competitors may attempt to raid valuable human capital to secure particularly valuable skills, gain access to insider information, or damage the target company (Maynard & Jones, 1997). Firms are thus likely to be very sensitive to the degree of threat posed by talent raids focusing on human capital that is both valuable and easily lost. Loss of such talent poses a significant threat to the future revenues of the firm and increases the possibility of enhancing the revenues of the raiding firm. Thus it is expected that talent raids focusing on valuable, transferable human capital will greatly threaten the interests of the target firm and significantly increase the likelihood it will initiate a retaliatory response.

Hypothesis 5: The positive relationship between the value of the targeted human capital and the likelihood of responding to a talent raid in a retaliatory manner will be stronger the greater the transferability of the human capital developed by employees while in the employ of the target firm.

Firm Capabilities Affecting Firms' Responses to Talent Raids

The population ecology paradigm provides a framework for developing theoretical propositions explaining how organizational attributes affect organizational responses to external threats. One of the fundamental propositions of the theory is that there are very strong inertial forces that slow and prevent organizations from changing their established routines, structures, and policies. This inertia is an asset with respect to providing accountability to stakeholders and producing reliably consistent products but becomes a liability when firms need to adapt to a changing environment (Scott, 1992).

A number of factors create the inertial forces that affect a firm's response to external threats. Among others, population ecologists identify information flows and routines reinforced by success, history, and tradition (Chen & Miller, 1994; Hannan & Freeman, 1989; Scott, 1992). Reactions to talent raids, both defensive and retaliatory, require the marshalling of extensive organizational and financial resources. Thus I theorize that these forces play a role in determining how a firm responds to a talent raid.

Scanning the Environment to Identify Raiding Activities. Environmental scanning is broadly defined as the active or passive process by which organizations learn of outside events, trends, and the actions of their competitors (Farh, Hoffman & Hegarty, 1984). Information gathering and processing is the first in a series of steps that permit organizations to adapt to their environment (Hambrick, 1982).

Scholars studying competitive interactions have noted that firms can only respond to the tactics of rivals if they are aware of their actions suggesting the importance of information gathering to effective reaction (Chen & Miller, 1994). Environmental scanning may also play a role in firms' propensities to respond to talent raids. External scanning for talent raids involves

collecting and processing information from the external environment that may be coming into employees and the employment outcomes of employees leaving the firm. One example of a mechanism to track incoming information, is using reporting bonuses to encourage employees to notify management if they are contacted by an outside employer, (Lublin, 2000).

The importance of information about competitors' behavior to effective competitive reaction is consistent with previous empirical work. In a study of high-tech organizations, firms with a more external orientation responded more quickly to competitors' actions than those with a more internal orientation (Smith, Grimm, Chen & Gannon, 1989). In another study, Chen and Miller (1994), using a comprehensive database of airline moves and countermoves, demonstrated that the visibility of a competitive move was positively related to the number of competitors responding to the move. Thus it is expected that the greater the intensity of scanning to identify the raiding tactics of rival firms will increase the likelihood the firm will respond to such tactics.

> Hypothesis 6: The likelihood of a target firm responding to a talent raid in a (a) defensive and (b) retaliatory manner increases the greater the intensity of scanning for information about rivals' talent raiding activities.

Prior Business Success. Sometimes called the "paradox of success" (Audia, Locke & Smith, 2000, p. 837), scholars from a variety of disciplines have noted that the behavior and performance of firms following periods of successful performance differ from firms having less successful performance. Previously successful firms are more likely to exhibit inertia in the form of fewer strategic actions, continuation of past strategies, and decreased competitive activity. Studies suggest this rigidity is due to the decision-making processes of the top management team, consensus regarding cause and effect of past success, and reduced information gathering. This strategic inertia is associated with lower post-success performance (Audia, et al., 2000; Miller & Chen, 1994). It is likely previous success also affects firms' propensities to respond to threats in the form of talent raids.

Although empirical research has not established that previous success will impact firms' responses to specific competitive events posed by rivals, there is evidence that past performance affects firm behavior following dramatic environmental change. Following deregulation in the airline and trucking industries, previously successful firms were less likely to change their strategies (Audia, et al., 2000) and were less likely to initiate competitive actions in the product market (Miller & Chen, 1994). Thus it is expected that firms with recent histories of positive organization performance will be less aware of competitors' actions, have a decreased appreciation of the consequences of the loss of talent, and be less willing to change human resource strategies. Such firms are thus less likely to respond to talent raids in either a defensive or retaliatory manner.

> Hypothesis 7: The greater the pre-talent raid performance of target firms the lower the likelihood they will respond to talent raids in a (a) defensive or (b) retaliatory manner.

Violation of Contractual Agreements. Written contracts between an employer and employee whereby the employee agrees not to directly or indirectly compete with the employer by starting a competing business or working for a competitor during or after the employment relationship are called non-compete agreements. Such restrictive covenants are used to protect the employer's investments in training and development, proprietary information, and goodwill relationships with customers (Adler, 1999).

The likelihood of a retaliatory response is increased if a raiding event violates the terms of a contractual agreement such as a non-compete agreement. Non-compete agreements affect the likelihood of a retaliatory response to a talent raid in two ways: First, non-compete agreements help the target firm pre-identify at-risk employees as valuable resources. Loss of such employees can be quickly defined as a threat requiring action (Adler, 1999). Second, non-compete agreements frequently list specific competitors for whom employees are forbidden to work. This information assists in the defining the actions of specific companies as tangible threats (Bamberger & Fiegenbaum, 1996; Winston, 2000) and facilitates the mobilization of

resources necessary for reacting (Dutton & Jackson, 1987). Finally, with the exception of a few states, courts are increasingly enforcing violated non-compete agreements (Adler, 1999). Firms losing employees to talent raiders covered by non-compete agreements will have an increased expectancy of the success of retaliatory actions.

> Hypothesis 8: Target firms will be more likely to respond to a talent raid in a retaliatory manner the more the successful raid violates the terms of a contractual agreement.

Methodology

Sampling

The sample frame for this study consisted of the population of companies that met the following criteria: (a) Companies headquartered in the USA. (b) The primary line of business was the software industry (SIC codes 7371, 7372, or 7373). One industry was chosen to reduce inter-industry variance (Becker & Gerhart, 1996). The software industry had low unemployment at the time of the study creating the competitive conditions necessary for an acceptable rate of talent raiding (ITAA News, 2001). Second, while talent raiding is a relatively common event in the software industry, it is not a socially accepted practice as it is in law, investment banking, and consulting; decreasing the likelihood the practice will be ignored (Bordwin, 1999; Adler, 1999). (c) The companies were parent companies rather than divisions of larger firms. Business units within larger firms would have had resources and structures affecting talent raid responses outside the domain of the model. (d) Selected companies employed 50 to 5000 employees. Reports in the business press suggest that very small firms are rarely the victims of talent raids; very large firms were excluded as the loss of a few employees might not be noticed or the response propensities would have been driven by the subunit losing the employees.

To participate in the study, companies must have been the victims of a talent raid in the three years prior to contact (February thru May 2002). The three-year time frame was chosen

over a shorter time frame due to respondents in the pilot study mentioning a decrease in recent raiding activity due to the economic conditions of 2000-2001. The average talent raid took place 14 months (sd = 9.4) prior to the study; well within a time frame that knowledgeable informants could be expected to recall with a good degree of accuracy (Miller, Cardinal & Glick, 1997).

All companies meeting the first four criteria were identified using the OneSource CorpTech Corporate Profiles. This database is considered the premier source of information on high-tech companies by professionals in the business intelligence community, (Kassel, 1999). At the time of data extraction (January 2002), the database contained information on over 50,000 companies. A total of 1847 companies met the screening criteria.

Additional data was collected from an HR or operational executives at each firm using a professional survey group to conduct telephone interviews. Of the 1847 companies in the sampling frame, telephone interviewers were able to contact 905 (49%) of the target company informants. Of the 905 contacted company informants, 661 agreed to participate in the study for a response rate of 73% (661/905). It was expected that only a fraction of the companies with informants willing to participate in the study would have been the victim of a talent raid. In this case, 135 of the 661 (21.2%) admitted to being the victim of a talent raid in the three years prior to the study. Time to conduct the survey was just under 25 minutes. The participating companies were located in 33 different states; only 18 (13.3%) were located in what is typically considered Silicon Valley.

I conducted two tests to evaluate the representativeness of the participating companies compared to the sample frame. Four archival variables were available from the CorpTech database to compare companies where the key informant could/could not be contacted, and companies that did/did not agree to participate in the study. This included number of employees, age, 2001 annual sales, and sales-per-employee. For both comparisons, I used MANOVA to compare the four variables across the two sets of companies. The results suggested that the 905 companies where the key contact was successfully contacted were not

different from 942 companies that the interviewers failed to contact ($p < .26$). Companies agreeing to participate were very slightly different from companies not agreeing to participate ($p < .05$, $\eta^2 = .01$). Exploratory ANOVA's suggested participating companies had fewer employees, lower sales, were younger, and had lower sales-per-employee. Since participation status only explained 1% of the variance in these measures (η^2 is equivalent to R^2 in ANOVA models), the effect on the results, if any, should be small. In addition, the empirical model controlled for these differences.

Measures

Dependent Variable. As discussed above, target firms may be classified as (1) Non-Responders, (2) Defenders, or (3) Retaliators. Accurately classifying each firm into one of these three mutually exclusive categories required measuring the number and type of discrete responses to the talent raid then applying the set of classification rules derived from the literature review. Using an inventory of possible responses (Sullivan, 2000), key informants were asked to respond to a series of 12 yes/no questions about their firms' actions in direct response to the talent raid. In 10 of the 12 items, informants were asked if, in direct response to the talent raid, their firm had responded by taking a particular action. One item asked respondents if their firm had taken any additional actions that could be classified as defensive in nature. Another item asked respondents if their firm had taken any additional actions that could be classified as retaliatory in nature.

Prior to conducting the study, I used the above definitions of defensive and retaliatory moves to classify the 10 specific actions into defensive and retaliatory categories. To validate this taxonomy, I conducted a content validation study (Hinkin, 1998) with 53 student and faculty judges to assess the correspondence between each of the 10 items and the construct definitions of defensive and retaliatory responses presented above. The results strongly suggest my categorization of the 10 items was consistent with the two construct definitions. Full results are available upon request.

Forty-one company informants (30.4%) answered "No" to all 12 items and were classified as Non-Responders. Sixty-two firms (45.9%) took one or more defensive actions only. The range was one to four with a mean of 1.7 defensive actions per company. These companies were classified as Defenders. Thirty-two companies (23.7%) responded with some type of retaliatory action. The range was one to four with a mean of 1.4 retaliatory actions. All 32 retaliating companies, as expected, also took some sort of defensive action. The range in the number of defensive actions for this group was one to seven with a mean of 2.41 per company. Companies taking both defensive and retaliatory action were classified as Retaliators.

Local Labor Market. While there is general agreement that the local labor market is defined by the set of firms and workers within a specific geographic area, there is no consensus on how this area is best measured. Some scholars define these boundaries by firms' workers' commuting patterns; specifically the maximum time the typical employee is willing to spend commuting to work (van den Berg & Gortner, 1997). Federal surveys suggest the average worker commutes 22.3 minutes (sd = 20.4) to work (Federal Highway Administration, 1995). Normal distribution theory would suggest 84% of a typical firm's employees live approximately 45 minutes from their place of employment. If most employees are willing to commute 45 minutes to work, a firm's local labor market competitors must include employers within this commuting boundary but also the set of firms located within 45 minutes of this perimeter. Thus I defined local labor market competitors as the set of firms within 90 minutes of commuting distance from the focal firm.

I used two questions to assess whether the raiding firm was located within this geographic boundary. First, informants were asked whether the raiding firm was located within one day's driving distance. If so, informants were asked to estimate the number of minutes it would take to drive from the target firm's location to the location of the raiding firm. Time of day

and day of week were specified to control for commuting factors. Raiding firms were local labor market competitors for 83.7% of the 135 cases.

Product Market Overlap. There are a number of ways to identify a focal firm's product market competitors. This includes using industry as an observable proxy or clustering industry members with similar attributes into strategic groups (Chen, 1996). These different perspectives ignore the markets where firms actually compete. The product market is best defined by the context where the firm offers its products or services for sale. Thus product market competitors are defined as firms selling similar goods and services serving similar functions to similar users (Baum & Korn, 1996; Chen, 1996).

I used three questions to assess the degree of product market overlap. The first question assessed (yes/no) whether the raiding firm derived significant revenues from the sale of software or computer programming services. If yes, the degree of similarity of products and services was assessed with one question (four point scale from "very different" to "very similar"). Finally, one question measured the degree of overlap between the two firms' pool of current and potential customers (four point scale from "no overlap" to "a great deal overlap"). These questions were treated as formative indicators of an index and averaged to create the observed variable (Diamantopoulos & Winklhofer, 2001). Since this variable was used in one of the interaction terms, the variable was centered by subtracting the mean from each element of the variable, (Aiken & West, 1991).

Value of Human Capital. The utility theory literature has been systematizing the measurement of human capital value for three generations. A key component of utility formulae is SDy, the dollar value to the employing organization of a one standard deviation improvement in the job performance criterion of an individual in a certain job (Boudreau, 1992, p. 651). One commonly used method of measuring SDy is to ask company experts to estimate the value of job performance across two points along a hypothetical performance distribution. The average of the two assessments is the estimate of SDy (Schmidt, Hunter, McKenzie & Muldrow, 1979). I

used a similar method to estimate the value of the raided human capital. Informants were asked to estimate the impact on firm financial performance of a performance improvement of a person in the raided job from low to average performance and average to high performance (four point scale from "no impact" to "a great deal of impact"). The items were averaged and centered.

Transferability of Human Capital. Using Stevens' (1994) and Trevor's (2001) definitions of transferability of human capital and movement capital, I constructed a two-item measure of the transferability of the human capital developed by workers employed by the target firm. Using a five-point scale ranging from 1, "none" to 5, "a great deal," informants indicated how much of the knowledge and skills that employees learned in their job at the raided company could be used at a similar job in the high-tech industry. The second question, using a five point scale ranging from "strongly disagree" to "strongly agree," asked informants whether the skills learned on the job increased their ability to move from one job to another in the high-tech industry. The two items were averaged and centered.

Intensity of Scanning. To measure the intensity of scanning to identify raiding activity, I adapted three questions from a validated measure of organizational scanning (Farh, et al., 1984). All three questions assessed the importance of gathering information about raiding events. Utilizing a five point scale of "not at all important" to "very important," informants were asked about the importance to their organization of acquiring information about (1) other companies' attempts to contact employees about employment opportunities; (2) the type of work former employees were doing for their new employer; and (3) acquire the names of departing employees' new employers. The three items were combined through averaging into a scale.

Prior Business Success. Due to longitudinal and missing data limitations of the CorpTech database, the pre-raid performance measure was collected from the company informants rather than archival data. The pilot study of the survey suggested potential informants, particularly from smaller private companies, were unwilling to reveal actual

performance metrics at the time of the talent raid. Considering that previous researchers have concluded that subjective performance measures collected from company informants, particularly informants in parent companies as opposed to business units, are valid and reliable (Brush & Vanderwerf, 1992), I chose to use subjective measures of firm performance commonly used in the software industry: net profit after taxes, revenue growth, and market share growth (Ferguson, 2001). To provide a common benchmark, subjects were asked to rate their firms on these measures prior to the time of the talent raid in comparison to competitors (much worse than competitors to much better than competitors). These items were treated as a formative index and averaged to construct the observable variable.

Post-employment contractual agreements between employers and employees specify the employment options of employees after they leave the contracting employer. These specifications frequently but not always include lists of competing companies for whom the employee may not work; length of time the contract is in effect; and specific geographic locations where the employee may not be employed (Adler, 1999; Winston, 2000).

Four dimensions of degree of violation of contractual agreements were measured with five questions asked of the company informants. The first question assessed if a non-compete agreement covered the employees in the raided job group at the time of the talent raid (yes/no). If not, the event was coded as not violating a non-compete agreement. The second question asked if the successfully raided employees were explicitly prohibited from working at the raiding company (yes/no). The third question assessed the length of post-employment time the agreement covered the employees (5 point scale; “1-6 months” to “longer than 24 months;” response was divided by five to ensure equal item weighting). Two questions were used to assess whether the raiding company was located within a prohibited post-employment geographic area. The items measuring the four dimensions were summed to create the observable variable. Of the 135 raided companies, 86 (63.7%) had non-compete agreements with employees in the jobs held by raided employees.

Control Variables. To reduce the power of alternative explanations of the empirical results, four control variables affecting degree of threat and target-firm capability of responding were included in the final model. To be included in the study, firms must have lost two or more employees in a talent raid. The total number of employees hired by the raiding firm frequently exceeded two and was included as a control. Additional control variables included size of the raiding firm (number of employees); size of target firm (number of employees); and age of target firm at the time of the talent raid.

Results

The means, standard deviations, and inter-correlations of all variables are presented in Table 1. Inter-item reliability estimates are presented for the non-index and non-categorical variables on the diagonal of the correlation matrix.

Table 1
Descriptive Statistics and Correlations of All Variables[a]

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12
1. Defensive Action[e]	.46	.50												
2. Retaliatory Action[e]	.24	.43	.37											
3. # of Raided Employees[b]	1.21	.59	.29	.25										
4. # of Employees (Target)[b]	5.38	.91	-.12	.12	.17									
5. Age of Target Firm[b]	2.52	.71	.09	.05	-.04	.20								
6. # of Employees (Raider)[b]	6.83	2.42	.04	-.06	-.04	-.03	.12							
7. Violation of Non-Compete	1.20	1.05	.18	.21	.09	.06	-.03	.05						
8. Labor Market Competitor	.84	.37	-.16	-.04	.00	-.12	-.17	-.17	-.05					
9. Product Mkt. Overlap[c]	1.57	1.04	.07	.12	.05	.19	-.01	-.11	.00	-.29				
10. Scanning	3.10	1.10	.21	.16	.06	.08	-.03	.02	.20	-.02	.01	.83		
11. Transferability of HC[c,d]	3.95	.76	.15	.15	.02	-.05	.04	-.06	.14	.13	-.14	.31	.65	
12. Value of HC[c,d]	3.15	.67	.18	.02	-.12	-.19	-.03	-.03	.02	-.08	-.01	.08	-.03	.75
13. Prior Business Success	3.54	.77	-.10	.23	-.10	.24	.06	.00	.14	-.14	.09	.04	-.02	.00

[a]N = 135 Coefficients of $|.17|$ or larger are significant at $p < .05$
[b]Logarithm
[c]Actual mean reported here. Variable was centered for correlations and when entered into regression equation
[d]Human Capital
[e]For construction of the correlation table only, this variable represents a 1 for the response and zero for all others. For the multinomial regression, only the cases with a response (coded 1) and non-response (coded zero) are included.

Given the three-category dependent variable, I had the option of testing the hypotheses with discriminant analysis, ordered logistic regression, or multinomial (unordered) logistic regression. Discriminant analysis is primarily a classificatory model and the coefficients are less useful for hypothesis testing (Menard, 1995). The equal coefficient assumption of ordered logistic regression, tested via the Score test, could not be met necessitating the use of a polytomous logistic regression model to test the hypotheses (Menard, 1995). I chose to use hierarchical multinomial logistic regression to test the empirical model. When using multinomial regression with a three category variable, one of the three categories is chosen as a referent and the cases are modeled based on their probability of being classified in the other two categories relative to the referent category. For this study, no-response was the referent category. The two simultaneously estimated equations provide estimates of two distinct intercept terms and distinct logistic regression coefficients for each of the independent variables for each equation (Jaccard, 2001).

The results of the hierarchical multinomial logistic regression analysis are reported in Table 2. Model 1 includes the control variables only. Model 2 includes the control variables and the seven lower-order terms specified by the 11 hypotheses. Model 3 adds the local labor market-product market overlap interaction term to the set of control and lower order variables. Model four adds the value-transferability of human capital interaction term to the control and lower order variables. The chi-square statistics for the four models consistently indicate strong model significance ($p < .001$). For models 2 through 4, the chi-square difference test was used to assess the statistical significance of the improvement of model fit due to the inclusion of additional variables (Jaccard, 2001). Additionally, the pseudo-R^2s suggest a significant proportion of the variation in raiding response propensities are explained in the four models.

Table 2
Results of Hierarchical Multinomial Logistic Regression Analyses

Variables	Model 1	Model 2	Model 3	Model 4	Hypothesis Tested	Outcome
Defensive Action Only						
Intercept	.94	1.23	1.21	1.38		
# of Raided Employees[a]	1.78**	2.31***	2.30***	2.41***		
Size of Target Firm[a]	-.80**	-.99**	-.99**	-1.02**		
Age of Target Firm[a]	.48	.63†	.63†	.72*		
Size of Raiding Firm[a]	.10	.09	.09	.10		
Contractual Violation		.50†	.50†	.56*		
Labor Market Competitor		-1.88*	-1.88*	-2.25*	Hypo. 2	Contrary
Product Market Overlap		.29	.32	.30		
Scanning		.52*	.52*	.57*	Hypo. 6a	Supported
Transferability of HC[b]		.28	.28	.36		
Value of HC[b]		.95*	.95*	1.25**	Hypo. 4a	Supported
Prior Business Success		-.67†	-.67†	-.82*	Hypo. 7a	Supported
Labor Mkt. x Product Mkt. Competitor			-.03			
Value of HC[b] x Transferability of HC[b]				.78		
Retaliatory Action						
Intercept	2.21	-4.77†	-4.82†	-4.21		
# of Raided Employees[a]	2.25***	2.90***	2.89***	2.84***		
Size of Target Firm[a]	-.35	-.77*	-.77*	-.79*		
Age of Target Firm[a]	.48	.61	.61	.63		
Size of Raiding Firm[a]	.01	-.01	.00	-.02		
Contractual Violation		.75*	.74*	.90**	Hypo. 8	Supported
Labor Market Competitor		-1.36	-1.12	-1.87†		
Product Market Overlap		.55†	.82	.58†	Hypo. 1	Supported
Scanning		.63*	.63*	.65*	Hypo. 6b	Supported
Transferability of HC[b]		.52	.50	.66		
Value of HC[b]		.75	.75	1.06*	Hypo. 4b	Supported
Prior Business Success		.29	.30	.12	Hypo. 7b	Not Supported
Labor Mkt. x Product Mkt. Competitor			-.30		Hypo. 3	Not Supported
Value of HC[b] x Transferability of HC[b]				1.82**	Hypo. 5	Supported
Model χ^2 Model (df)	29.33*** (8)	9.53*** (22)	69.62*** (24)	76.66*** (24)		
$\Delta\ \chi^2$ (Δ df)		40.20*** (14)	.09 (2)	7.04* (2)		
Cox & Snell Pseudo R^2	.19	.40	.40	.43		
Δ Pseudo R^2		.21	.00	.03		

[a]Logarithm
[b]Human Capital
†P < .10, *P < .05, **P < .01, ***P < .001

Model 1 of Table 2 shows that the four control variables explain 19% of the variance in the propensity to respond to a talent raid ($p < .001$). As might be expected, the greater the number of employees raided, the greater the likelihood of both defensive ($p < .01$) and retaliatory responses ($p < .001$). The greater the size of the target firm, the lower the probability it will take defensive action ($p < .01$). Size is unrelated to likelihood of a retaliation in the control-variable-only model but rises to significance in models 2 thru 4 that include the lower order and interaction terms. Increased size is associated with a decreased likelihood of retaliation ($p < .05$). Age of the target firm is not a significant predictor of either defensive or retaliatory responses in the control-variable-only model but rises to significance in predicting the likelihood of a defensive response in models 2 thru 4 ($p < .10$ and $p < .05$). Older firms are more likely to respond to talent raids with a defensive response. The size of the raiding firm is not a significant predictor of either defensive or retaliatory responses.

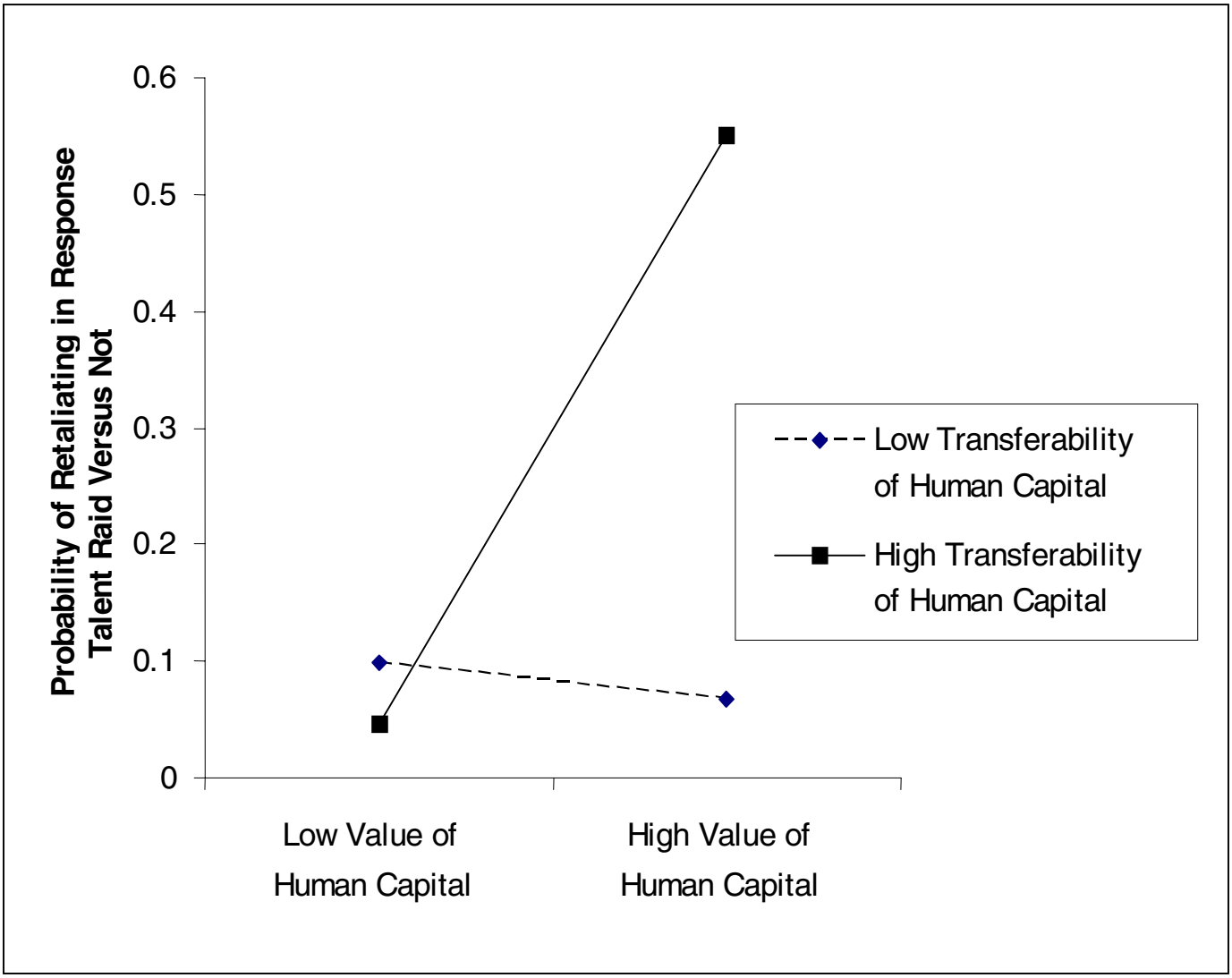
As shown in model 2, the addition of the seven lower order terms significantly improves the fit of the model (Δ pseudo-$R^2 = .21$, $p < .001$). While Hypothesis 3 predicts an interaction between product and labor market overlap, Hypotheses 1 and 2 predict main effects for each of these variables. As expected, the degree of product market overlap between the raiding and target firms is associated with an increased likelihood of a retaliation from the target firm ($p < .10$) providing moderate support for Hypothesis 1. The coefficient for local labor market status of the raider was significant ($p < .05$), but contrary to Hypothesis 2 is negative rather than positive. Thus when a raiding firm is located in the target firms' local labor market, the likelihood of a defensive response is decreased.

Hypothesis 3 predicted that the impact of local labor market status on retaliation propensity would be manifest in strengthening the positive relationship between degree of product market overlap and probability of a retaliatory response. As can be seen in model 3, the inclusion of the product-labor market interaction term did not improve model fit. Hypothesis 3 was therefore not supported.

Hypotheses 4a and 4b predicted that the greater the value of the raided human capital the greater the likelihood the target firm would take defensive and retaliatory actions. The coefficient for human capital value is, as expected, positive and significant in the defensive response panel of model 2 ($p < .05$) supporting Hypothesis 4a. The coefficient for value of human capital is not significant in model 2 that includes the lower order terms only. However, in the more fully specified model 4, which includes the significant interaction term for value and transferability of the raided human capital (reviewed below), the coefficient is, as expected, positive and significant ($p < .05$) supporting Hypothesis 4b. Hypothesis 5 suggests that the greater the transferability of the raided human capital the stronger the positive relationship between value of raided human capital and likelihood of a retaliatory response. This was tested in the model 4 by the inclusion of the transferability-value of human capital interaction term. The addition of this interaction term improved model fit (Δ pseudo-$R^2 = .03$; $p < .05$). To gain further insight into this effect, I graphically plotted the interaction of transferability and value of human capital in predicting the probability of retaliating following a talent raid. This involved calculating four separate point estimates of retaliation probability using the means of the five non-interacting variables and the four combinations of high and low transferability and human capital value one standard deviation above and below the mean. Point estimates were converted from log-odds into actual probabilities (Jaccard, 2001).

Figure 1

Interaction Between Value of Human Capital and Transferability of Developed Human Capital in Predicting Probability of Retaliating Against a Talent Raider



As can be seen in Figure 1, the probability of a firm retaliating in response to a talent raid is small following the loss of both high and low value human capital when the transferability of the developed human capital is low (6.7% and 9.9% respectively). When the raided human capital is highly transferable across the high-tech industry and the value of the human capital is low, the likelihood of the target firm responding with retaliation remains low (4.5%). However, when the human capital value is high and transferability is high, there appears to be a dramatic increase in the likelihood the target firm will respond with retaliatory tactics (55.0%). This suggests transferability moderates the positive relationship between value of human capital and probability of responding to a talent raid with retaliatory actions supporting Hypothesis 5.

The coefficients for intensity of scanning are positive and significant ($p < .05$) for both the defensive and retaliatory panels of model 2. This supports Hypotheses 6a and 6b which suggests scanning will be associated with an increased likelihood of both defensive and retaliatory responses to a talent raid. Hypotheses 7a and 7b predict that the likelihood of defensive and retaliatory responses will be lower the greater the prior business success of the target firm. The coefficient for prior business success in the defensive panel is, as expected, negative and significant ($p < .10$) in the less specified model 2 and is negative and conventionally significant ($p < .05$) in the more fully specified model 4 thus supporting Hypothesis 7a. The coefficient for prior business success in the retaliation panel is not significant; thus Hypothesis 7b is not supported. Finally, Hypothesis 8 predicts that the greater the violation of post-employment contractual agreements by the raided employees, the greater the likelihood the target firm will retaliate. The coefficient for contractual violation is positive and significant in the retaliatory panel of models 2 and 4 ($p < .05$; $p < .01$) providing strong support for Hypothesis 8.

Discussion

The study of competitive dynamics is the study of how firms take actions to gain and/or protect competitive advantage; the process by which competitors affected by these actions identify and respond to rivals' actions; and the performance outcomes of these dynamic interactions. Prior to this study, the gain and loss of competitive advantage has always been operationalized in terms of gains and losses in revenues. This study is the first to suggest that human capital may be an important basis for inter-firm competitive dynamics.

The primary purpose of this study was to extend both strategic human resource management and competitive dynamics theories by developing and testing a theory of competition for human resources. Specifically, I sought to develop and test a theory of the drivers of human capital competition. Drawing on competitive dynamics theory, I proposed that two broad factors would explain how a firm responded to the talent raiding actions of a rival: (1) The degree of threat posed by competitors' actions; and (2) The target firms' ability to respond to the action. This model was supplemented with several postulates from strategic human resource management. The results of the study were broadly consistent with the hybrid theory.

First, the degree of threat of a competitor's action was operationalized in terms of the attributes of the competitor and threat to the targeted human capital. As expected, raids initiated by product market competitors increased the likelihood of a retaliatory response. Contrary to expectation, raids initiated by local labor market competitors decreased the likelihood of competitive response. The contrary results may be due to the inability of organizational decision-makers to distinguish between local raiding activity and normal employer-to-employer human capital flows. When multiple employees resign, relocate, and begin employment with the same non-local employer, decision-makers may be better able define the event as a raid and initiate counter-actions (Chen, et al., 1992).

As expected, value and transferability of human capital jointly predicted response propensities. The greater the value of the raided human capital, the greater the likelihood the

target firm would respond with defensive and retaliatory tactics. Furthermore, the greater the transferability of the targeted human capital the stronger the relationship between human capital value and probability of retaliation.

Finally, the model also suggests that organizational structures that facilitate the processing information about targeted human capital increase the likelihood of defensive and retaliatory responses. Prior financial success was associated with a decreased likelihood of competitive responses while scanning for external information and binding employees with non-compete agreements appeared to facilitate such responses. This finding has particular importance both for firms initiating and defending against talent raids.

This study contributes to a broader theory of strategic human resource management in two important ways. First, the supposition that human resource actions generate profits and ultimately competitive advantage is well supported by a number of studies (Hitt, et al., 2001; Shaw, Delery, Jenkins & Gupta, 1998). Rao and Drazin's (2002) work, building on a body of literature examining the impact of recruiting from competitors, suggests these tactics provide tangible advantages to the raiding firm. When firms take actions that directly, negatively impact their rivals or merely give them an advantage temporarily unavailable to others, the competitive interaction framework suggests firms may become aware of and respond to these actions (Grimm & Smith, 1997). This study suggests there are *consequences,* in the form of defensive and retaliatory actions from rivals, to raiding and possibly even other HR actions. While the phenomenon of talent raiding is arguably an extremely aggressive tactic, this paper is the first to suggest that human resource management extends outside the boundaries of the firm. The strategic management of human resources will require decision-makers to optimize the behaviors, attitudes and performance of human resources flowing into, through, and out of organizations (Beer, Spector, Lawrence, Mills & Walton, 1984) as well as to monitor and respond to the consequential actions of labor and product market competitors.

The expansion of the domain of HRM to the external environment suggests one possible research stream. The outcome of competitive interactions is a function of if and how competitors respond (Chen, et al., 1992). An additional line of research could examine whether competitive dynamics for human resources are consequential. Specific to this study, it would be important to understand the consequences of not responding, defending, and retaliating against talent raiders. The primary outcome of interest would be whether the same or other firms raided the target firm again. I expect that firms that used retaliation are less likely to be raided again while firms that did not respond to talent raids are more likely to be raided again with firms using defensive tactics falling somewhere in-between (Karnani & Wernerfelt, 1985; Porter, 1980).

The second contribution of this study is its empirical support for the emerging theoretical literature on the human resource architecture. Lepak and Snell's (1999) work suggests firms manage different employee groups differently based on the value and uniqueness of their human capital. This study supports this work by demonstrating that firm's respond more aggressively the greater the value of the human capital. Consistent with Lepak and Snell's (1999) theory, these results suggest that firms will not strengthen the internal employment relationship following the loss of high value, highly transferable (i.e. low uniqueness) human capital but will instead rely on external market mechanisms that typify the retaliatory actions of this study.

Although not tested in this study, these results shed light into the possible mechanisms by which firms construct different human resource configurations for different types of human capital. Lepak and Snell (1999) suggest that firms' employment modes emerge as a function of organizations' strategic and efficiency choices and evolve as a strategic response to market based competition. This study suggests rivals' human resource actions as an additional factor that may explain firms' differential employment structures. As organizational decision makers notice and respond to rivals' human resource actions (raiding, external recruiting, and/or internal

management), incremental changes are made in the management of affected employee groups. For instance, in this study, the greater the violation of the contractual agreements between raided employees and their employer, the greater the likelihood of a defensive (i.e. internal) response. A number of action-reaction cycles may lead to a differential employment configuration for one group over another. Clearly, additional research, in the form of longitudinal case and survey studies, would be needed to test this hypothesis. However, the results of this study strongly suggest the actions of rivals impact firms' means of managing their employees.

Limitations

There are three primary limitations to this study. First, this study used a retrospective longitudinal design (Menard, 1991). All variables were measured at one point in time however the independent variables were measured by asking respondents to reflect on actions and attributes prior to the time of the talent raid. This method has many of the same disadvantages as cross-sectional research. Specifically, one cannot conclude that the independent variables caused the dependent variable, only that they were associated. While there are weaknesses to using this technique, retrospective designs have been used in some of the seminal articles in the SHRM canon (Guthrie, 2001; Ichniowski, Shaw & Prennushi, 1997).

Another limitation is the use of one informant per organization. Extensive research has documented the unreliability of using single informants to provide accurate information about organizational practices (Gerhart, Wright, McMahan & Snell, 2000). However the informants for this study were not asked to describe HR practices at a level of detail beyond their cognitive processing. The subjects described discrete actions, details about specific events, and attributes of employees in specific jobs. When measuring such constructs, measurement error is less of a problem than when asking subjects to describe diffuse organizational practices (Miller, et al., 1997). A single informant design also raises the specter of mono-method bias. However, in an analysis of 42,000 correlations from the micro-organizational research domain, one study concluded "percept-percept inflation may be more the exception than the rule in

[research] on organizations (Crampton & Wagner, 1994, p. 72). Thus while readers should be aware of the possible correlation inflation associated with this study's data collection method, the empirical evidence suggests the overall biasing effect from this technique is nil.

The third limitation is the limited generalizability of the results. The purpose of this study was to develop and test a theory of human resource competition. I used the software industry to capitalize on the intense labor market dynamics. The findings here may not apply in industries with less technical employees and/or less labor market competition.

Implications for Managers

This study has implications for managers considering initiating talent raids and managers seeking to avoid talent raids or diffuse their consequences. Managers seeking to initiate talent raids should be interested in identifying the factors that decrease the probability of retaliatory responses. The results suggest raiding employees with valuable, transferable skills dramatically increases the likelihood of retaliation. Since general skills are available in the open labor market, managers are advised to seek these skills through regular hiring channels. Firms interested in identifying and responding to talent raids should pay closer attention to the post-employment plans of departing employees. Organizations should use exit interviews not to solely capture information about internal conditions causing employees to leave but to collect information about where employees are going following their termination, what type of work they will be doing, and how the hiring firm contacted them. Clearly, not all talent raids deserve a response but if firms are able to identify circumstances surrounding the raid, they can choose to respond to the raids most likely to result in the loss of valuable employees and/or knowledge assets.

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