Microfoundations of HRM Effects

Individual and Collective Attitudes and Performance
Microfoundations of HRM effects: Individual and Collective Attitudes and Performance

Key words: HRM, Multilevel, Social Exchange, Psychological Contracts, MNC, International

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Vantaa, 15.4.2011

Mathias Höglund
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1 INTRODUCTION

1.1. Background

A driving force for research on human resource management (HRM) has been the notion that human resources and their management can constitute a competitive advantage for organizations (Barney & Wright, 1998). While there are many open issues concerning this proposition, currently researchers are trying to understand how HRM may be able to create that value (Becker & Huselid, 2006; Boxall & Macky, 2009; Paauwe, 2009; Wall & Wood, 2005).

Extant research on the HRM-performance link has mostly focused on the nature and influence of HRM system content, that is, the specific practices through which organizations can improve the acquisition, development, retention and utilization of their workforce (Bowen & Ostroff, 2004; Boselie, Dietz, & Boon, 2005). A well-established assumption within HRM research is that the implementation of a system of HRM practices, in one way or another, engenders employee abilities, motivation and opportunities to act in line with organizational objectives (see Lepak, Liao, Chung, & Harden, 2006 for a review). The underlying assumption is that organizational HRM practices can enhance organizational performance, through their impact on positive employee attitudes and performance (see meta-analysis in Combs, Liu, Hall, & Ketchen, 2006). At the present state of research, several studies have found positive effects of HRM on the level of employee attitudinal and behavioral reactions in organizations, units or work-groups. These include attitudes such as affective commitment (Kehoe & Wright, 2010; Takeuchi et al., 2009), as well as behaviors such as organizational citizenship behaviors (Kehoe & Wright, 2010; Snape & Redman, 2010; Sun, Aryee, & Law, 2007) and knowledge sharing (Collins & Smith, 2006).

To date, however, scholars have begun to acknowledge that the mere existence or even extent of implementation (e.g. Huselid, 1995; Collins & Smith, 2006) of a system of HRM practices at the organizational, unit or even work-group level is unlikely to exhaustively account for the effects of HRM on organizational outcomes such as performance (Gerhart, 2005; Wright & Haggerty, 2005; Wright & Nishii, 2007). In fact, recent HRM studies indicate that employee reactions to HRM practices may be far less homogeneous than assumed in previous HRM research. As a case in point, recent HRM studies have shown that individuals’ reactions to HRM tend to differ largely among employees within organizations, departments and work-groups (Nishii, Lepak, & Schneider, 2008; Wright & Nishii, 2007). In general, previous studies measuring HRM practices by using multiple employees as respondents indicate that about 80% of the variance in perceptions of HRM rest at the individual level of analysis.
while only about 20% are found at the organization or unit level (e.g. Takeuchi, Chen & Lepak, 2009; Takeuchi, Lepak, Wang & Takeuchi, 2007). In practice, this means that the same system of HRM practices may lead to widely varying attitudes and performance levels among employees. This renders the HRM-performance link all the more challenging, and raises the question of whether or not the linkage between HRM and organizational outcomes can be explained by employee reactions in terms of attitudes and performance, if these reactions are largely idiosyncratic (cf. Becker and Huselid, 2006). To address this question, HRM scholars have called for more attention to be placed on the antecedents and consequences of employee heterogeneity in reactions to HRM (Wright & Van De Voorde, 2007). Nevertheless, there is to date virtually no empirical HRM research available on the causes or effects of homogeneity or heterogeneity in such employee reactions.

1.2. Research gap

To address the question of how employees react to organizational HRM practices in general, and why employees react to the same practices differently in particular, HRM researchers have begun to focus on the qualities of implemented HRM practices. Bowen and Ostroff (2004) recently developed a comprehensive theoretical framework of such qualities. Their theory of the HRM process approaches the system of HRM practices as a signaling system communicating expected attitudes and behaviors and associated rewards to employees. The essential argument is that specific HRM process features, as perceived by employees, determine the strength of HRM signals. This signaling strength then influences how employees yield to the signals by adjusting their attitudes and behaviors, resulting in increased employee performance. In addition, strong HRM signals are theorized to reduce variance in attitudinal and behavioral reactions and thereby engender uniform attitudinal and behavioral climates. The implications of the theory are thus twofold. Firstly, strong HRM signals influence the extent to which employees respond to HRM practices. Secondly, strong HRM signals influence how differently employees respond to HRM practices. The former reflects the average effect of HRM on employees, i.e. the collective effect on a group of employees, whereas the latter concerns to what extent the effect is the same on all employees.

Bowen and Ostroff’s (2004) HRM process theory thus addresses both the question of how the HRM system influences the average level of employee attitudes and behaviors as well as the variance in these attitudes and behaviors. These two questions form a useful starting point to this thesis seeking to advance research on the effects of HRM for at least two reasons. Firstly, they address the actual mechanisms through which HRM practices can become linked to organizational performance. Secondly, in doing so, they focus explicitly on the assumed
causal path from higher-level HRM systems through lower-level employee reactions to higher-level organizational outcomes. This is an important contribution because most HRM research thus far has focused on theory and analysis only at aggregated levels of analysis such as the organization, unit or work-group. As a consequence, how HRM systems can influence individuals’ attitudes and performance, both individually and collectively, and how these reactions can enhance organizational performance remains an unanswered question (cf. Boxall & Macky, 2005).

To answer this question, scholars have called for using psychological contract theory as a lens to study the effect of HRM systems on individual employee reactions as well as the variance in these reactions (Ostroff & Bowen, 2000; Wright & Nishii, 2007). Conceptualized as an individual's idiosyncratic perception of the terms of the exchange relationship, that is, the perception of organizational inducements and employee obligations (Conway & Briner, 2005; Rousseau, 1995), the psychological contract is analogous to what Bowen and Ostroff (2004) denote as being employee perceptions of behavior-reward instrumentalities. In other words, the psychological contract reflects employee perceptions of expected attitudes and behaviors and associated rewards signaled by the system of HRM practices. Despite this analogy, research on the relationship between HRM systems and psychological contracts remains scarce (see e.g. Guest & Conway (2002) for an exception). In addition, due to the conceptualization of the psychological contract as an idiosyncratic construct, there appears to be little knowledge of whether and how the psychological contract can become shared among employees in organizations, units or work-groups.

In summary, this thesis is motivated by the lack of research on the effects of the HRM system on, firstly, individual and collective employee reactions, secondly, variance in employee reactions, and finally, organizational performance.

1.3. Objectives of the thesis

Against this background, the purpose of the thesis is to contribute to previous HRM theory and research on the processes through which HRM practices become linked to collective outcomes through individual employees’ attitudes and performance. In so doing, the aim is to theoretically develop and empirically examine the effects of employee perceptions of both HRM system content and process by means of the following research questions.

i. How employee perceptions of the HRM system relate to individual and collective employee attitudes and performance.

ii. How employee perceptions of the HRM system relates to variance in employee attitudes and performance.
iii. How collective employee performance mediates the relationship between employee perceptions of the HRM system and organizational performance.

To answer the above research questions, I apply Bowen and Ostroff’s (2004) multilevel HRM process theorization on the study of the linkages between HRM and individual and collective employee attitudes and performance. In terms of employee attitudes, the thesis focuses on psychological contract obligations (Rousseau, 1995). Theoretically, employee obligations reflect employee responses to perceived organizational inducements (Conway & Briner, 2005). Hence, they form a fruitful attitudinal lens to capture the extent to which employees respond positively to HRM (Wright & Nishii, 2007). While prior research has mostly applied the notion of psychological contracts at the individual level of analysis, a central tenet of this thesis is to theoretically argue for the usefulness of this concept also at collective levels of analysis and empirically examine the antecedents of this transition to a higher level of analysis.

1.4. Definitions & assumptions

To frame the above focus on the HRM system in terms of its content as well as process features, I now proceed to present selected definitions and assumptions that guide the subsequent discussion throughout the thesis.

**HRM content.** HRM practices “reflect specific organizational actions designed to achieve some specific outcomes” while an HRM system reflects the setup of multiple practices “that are espoused to be internally consistent and reinforcing to achieve some overarching results” (Lepak, Liao, Chung, & Harden, 2006: 221). The above definition of an HRM system is built around two central assumptions. Firstly, a system of HRM practices serves to support the strategic objectives of an organization. Hence, the selection of HRM practices should vary according to organizational objectives (vertical fit) (e.g. Schuler & Jackson, 1987, Wright & Snell, 1998). Secondly, the individual practices in the system should support the same objective (horizontal fit) (e.g. Delery, 1998; Wright & McMahan, 1992). The argument is that different combinations of practices can reach any one objective as long as they serve the same purpose.

In this thesis HRM practices refers to the individual practices that make up the HRM system applied to a particular work group in support of the overarching objectives for that group (cf. Lepak et al., 2006, Wright & Snell, 1998). While there is no standard definition of a single set of practices, the most commonly used categorization of practices broadly corresponds to the Michigan model of HRM (Fombrun, Tichy, & Devanna, 1984) that is, recruitment and
selection, training and development, performance management, and compensation (Boselie, Dietz, & Boon, 2005). According to Bowen and Ostroff’s (2004) terms, this setup of HRM practices in a system is called HRM content.

**HRM process.** In contrast to HRM content, the characteristics of HRM system implementation – that is, distinctiveness, consistency and consensus – reflect the HRM process. According to Bowen and Ostroff (2004) these features foster a strong HRM context or situation in which employees are more likely to perceive and react to HRM messages in a uniform manner.

**HRM strength.** The strength of the HRM system is conceptualized as “its effectiveness in conveying the types of information needed to create a strong situation” (Bowen & Ostroff, 2004: 208). This effectiveness is determined by the above HRM process features as perceived by employees in a particular group. This definition is in line with Hogan’s (2009: 249) argument that “situations only matter if they are perceived by the individuals in them”. Therefore, the terms HRM process and HRM strength will be used interchangeably throughout the thesis. The main idea is that the HRM process or HRM strength is thought to reduce variability in employee attitudes and performance. In line with Johns (2006: 388) I maintain that “if we do not understand situations, we will not understand person-situation interaction” and thereby limit the potential of our research to “explain how individual or team activity gets translated into larger organizational outcomes”.

**Psychological contract obligations.** The psychological contract is conceptualized as an individual’s idiosyncratic perception of the terms of the exchange relationship; that is, promised organizational inducements and employee obligations expected in return (Conway & Briner, 2005; Rousseau, 1995). In line with Rousseau and Greller (1994:386), I define employee obligations in this thesis as “the actions employees believe are expected of them” by their employer.

I now proceed to present the structure of the thesis.

### 1.5. Structure of the thesis

The thesis consists of five chapters. The introductory chapter serves as a background to the topic and presents the objectives of the thesis illustrated by the streams of literatures that are drawn upon to address the stated research questions. In Chapter 2 I present a selective review of previous research on HRM that serves the purpose of contextualizing the focus on employee experiences of HRM within a multilevel perspective. In Chapter 3 I present the samples and data collection procedures and outline the research methods and statistical
analyzes used in the thesis. Chapter 4 consists of summaries of each of the four individual essays in the thesis. Finally, in Chapter 5 I discuss the thesis’ findings and their implications for future HRM research. The four essays are depicted in Table 1 and briefly described below.

In Essays 1-3 I theoretically develop and empirically examine the role of the HRM system in fostering shared interpretations of and responses to HRM cues within the organization. Specifically, in Essay 1 I conceptually address the question of how HRM system content and process features influence psychological contract obligations within work groups and how the level and within-group variance interact to produce outcomes at the work-group level. Further, Essay 2 empirically examines the relationship between employee perceptions of the HRM system and psychological contract obligations and their linkage to human capital. Essay 3 constitutes an empirical test of the propositions put forth in Essay 1 covering the antecedents of the level of and variance in psychological contract obligations in work-groups. In Essay 4 I examine the same research question in relation to employee performance and extend the analysis to cover the entire path from employee perceptions of the HRM system, through individual and collective employee performance, to organizational performance.

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<th>Essay</th>
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<td>ii</td>
<td>The effects of the level of and variance in psychological contract obligations on human capital in work-groups.</td>
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<td>2</td>
<td>i</td>
<td>The mediating role of psychological contracts in the relationship between employee perceptions of the HRM system and human capital.</td>
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<td>3</td>
<td>i</td>
<td>The relationships between employee perceptions of the HRM system and the level of and variance in psychological contract obligations.</td>
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<td>The mediating role of the level of and variance in employee performance in the relationship between employee perceptions of the HRM system and organizational performance.</td>
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Table 1 - Thesis overview
In this chapter I present the conceptual framework of the thesis. I begin by situating my approach to studying HRM within the literature on the microfoundations of organizational research. I then present a selective review of previous HRM research whereafter I proceed to discuss levels of analysis in HRM by building on key arguments from the microfoundations literature on the role of lower-level phenomena in explaining relationships between higher-level phenomena. Finally, I build on Bowen and Ostroff’s (2004) multilevel HRM process theory and the notion of situational strength to develop a conceptual framework illustrating the role of HRM in shaping collectively shared attitudes and performance. Microfoundations of HRM effects: Levels of analysis

2.1. Microfoundations of HRM effects: Levels of analysis

The thesis is built around the notion that “meaningful variability exists within organizations—in terms of employees’ perceptions of and reactions to HR practices” and that ignoring this variability “may be hurting our ability to understand the process through which HR practices become linked to performance” (Nishii et al., 2008: 528).

To address this issue, the thesis builds on the literature concerning the microfoundations of organizational research (e.g. Felin & Hesterly, 2007; Minbaeva, Foss, & Snell, 2009). Scholars of microfoundations frequently argue against the sole reliance on methodological collectivism; that is, viewing collective phenomena as social facts determining outcomes through downward causation (e.g. Felin & Hesterly, 2007), and call for more research on the upward effects of individual heterogeneity, or conversely, homogeneity. This stream of literature frequently builds on theorizations by Coleman (1990), who maintains that macro-level relationships are to a large extent constituted of micro-level phenomena (see Figure 1). In other words, macro-level phenomena (such as the linkage between HRM and organizational performance) can be explained through the aggregation of individual-level actions. These actions, in turn, are only partially influenced by macro-level factors such as HRM practices (cf. Foss, 2007). The purpose of this thesis is not to disregard methodological collectivism as a valid approach to scientific enquiry on HRM, but rather to complement this perspective with a meso focus at the intersection between individual (micro) and collective (macro) levels of analysis (House, Rousseau, & Thomas-Hunt, 1995).
2.2. Literature review

Research attempting to address how HRM practices become linked to individual, work group and organizational outcomes is faced with an abundance of theories, models and approaches. In a critical review of the field, Fleetwood and Hesketh (2008) list no less than 49 different approaches that attempt to explain the link between HRM and performance. Because the HRM literature is extensive and the explanatory schemes diverse, the following review is by necessity selective and readers are directed to recent HRM reviews for a more comprehensive discussion (e.g. Boxall & Mackey, 2009; Paauwe, 2009). The following review positions my focus within the previous research. Subsequently, I concentrate the analysis on (1) how individuals’ perceptions of HRM affect attitudes and performance and (2) how the HRM system can influence the variance or sharedness in attitudes and performance to the extent that they can be validly aggregated to higher levels of analysis.

2.2.1. HRM Structures

Within organizational-level HRM research the notions of high performance, high-commitment, high-involvement, and human capital enhancing HRM systems have received considerable attention (e.g. Arthur, 1994; Huselid, 1995; Guthrie 2001; Youndt, Snell, Dean, & Lepak, 1996). These universalistic perspectives assume that organizations can implement a set of best practices to increase organizational performance (Lepak & Snell, 1999, 2002). While these strands of research have initiated and contributed to an important debate about the link between HRM and organization level performance, significant challenges remain (see Boxall & Mackey, 2009 for a review). In particular, these approaches do not offer explanations as to why and how a particular setup of HRM practices in a system is superior to
others and thereby largely ignore the processes through which these practices become effective (Paauwe, 2009). Also, a universal or best practice approach does not specify the conditions under which a set of practices is expected to be effective for a given objective (Boxall & Mackey, 2009; Purcell, 1999). As pointed out by Lepak et al. (2006), the HRM field is characterized by a lack of consensus regarding both the content and the objective of HRM systems. Typically the selection of practices is motivated by exploratory factor analyzes grouping individual practices based on their assumed effect on organizational human capital (e.g. Snell & Dean 1992; Wright, Dunford, & Snell, 2001), which corresponds to the aggregated sum of employees’ knowledge, skills and abilities (KSAs) (Delery & Shaw, 2001; Mathieu & Chen, 2010). This approach corresponds to the commonly used AMO theory (Appelbaum, Bailey, & Kalleberg, 2000) that positions employee abilities, motivation and opportunities as central mediating variables between HRM systems and organizational outcomes. While these contributions are laudable and the framework intuitively compelling, research showing how HRM systems influence the overall level of such employee features in an organization is scarce (Takeuchi, Chen, & Lepak, 2009).

Assuming the AMO perspective, the setup of HRM practices can be argued to be driven by the strategic goals of the organization (Bowen & Ostroff, 2004). When the HRM practices support collective employee performance against a strategic objective, organizational performance will emerge as the result of collective mutually supportive behaviors. At the organizational level the objective of an HRM system is, in this view, to enable understanding of organizational objectives and increase employee abilities, motivation and opportunities to pursue them. Therefore, HRM practices such as recruitment and selection, training and development, performance appraisals, and compensation should enable the organization to recruit, develop, motivate and empower employees to fulfill the strategic objectives. Simply put, HRM systems ‘should’ be structured to acquire human capital with the requisite abilities and to some extent motivation from the external labor market and further develop the acquired human capital pool through training practices, motivate with incentive compensation and empower through adequate job-design.

This structural view provides a basic framework for thinking about HRM at the organization level. At the same time, it implicitly assumes that all employees will respond to HRM practices in the same way. As a result, the question of (1) whether desired employee reactions are realized and (2) whether employees perceive and react to HRM practices in different ways remains open (Nishii et al., 2008).
2.2.2. Attitudes and behaviors

Although HRM research focusing on structures often implicitly assumes that HRM systems can be rated on a high-performance/commitment/involvement scale ranging from high commitment to high control orientation (Lepak et al., 2006), employee responses in terms of attitudes and behaviors are more often implied than being the actual focus of analysis. However, given the central role of employee behaviors for the achievement of organizational objectives (Lepak et al., 2006), individual-level employee perceptions and attitudes preceding these behaviors provide a more proximal but underutilized lens to capture the processes through which HRM systems become effective in an organization.

In line with this assertion, HRM researchers are increasingly focusing on the downward effects of HRM systems on individual attitudes and behaviors. At the current state of research, studies have found downward effects of higher-level (unit or team) HRM on lower-level (individual) attitudes such as affective commitment (Takeuchi et al., 2009), and behaviors such as organizational citizenship behaviors (OCB) (Kehoe & Wright, 2010; Snape & Redman, 2010). Similar effects have also been found at the aggregated level in terms of affective commitment (Kehoe & Wright, 2010), perceived organizational support (Takeuchi et al., 2009), social exchange (Takeuchi et al., 2007), OCBs (Sun, et al., 2007) and knowledge sharing (Collins & Smith, 2006). Some of the above studies (Collins & Smith, 2006; Sun et al., 2007; Takeuchi et al., 2007) have also found that these variables have a mediating effect on different measures of team, unit or overall organizational performance.

These contributions all incrementally add to our understanding of how HRM systems become linked to organizational outcomes through employee attitudes and behaviors. In fact, this approach begins to address some of the key issues in the study of HRM: HRM as a field rests on the assumption that HRM practices become linked to outcomes at various organizational levels through a series of both contextual (downward) and emergent (upward) processes. Thus, the overarching idea in this field reflects Coleman’s (1990) view of social theory in that higher-level phenomena (HRM practices) influence lower-level phenomena (individual attitudes and behaviors) that in turn influence a second higher-level phenomenon (organizational performance). In multilevel theory this process reflects a 2-1-2 model (Preacher, Zyphur, & Zhang, 2010), where higher-level organizational practices influence lower-level employee reactions that collectively enhance organizational outcomes.

These laudable contributions notwithstanding, much remains to be done within this strand of HRM research. As previously pointed out, most studies aggregating employee perceptions of HRM systems or practices show that employees differ widely in their perceptions of HRM. The fact that the majority of the variance is found among individuals within groups rather
than between groups such as teams, units or organizations, suggests that consistent HRM implementation seems to be the exception rather than the norm. As a consequence, individual heterogeneity in perceptions of and responses to HRM (cf. Felin & Hesterly, 2007; Minbaeva et al., 2009) remains a pertinent and to date unsolved challenge in HRM research. In this light, Bowen and Ostroff's (2004) HRM process theory, focusing on how employee perceptions of HRM are constituted as well as how variance in such perceptions can be reduced, offers a plausible approach for studying HRM at different levels of analysis. Specifically, their theory is useful for examining to what extent employee perceptions of and responses to HRM systems emerge as collective phenomena.

2.2.3. Levels of analysis in HRM

HRM scholars have recently devoted attention to the importance of employee-level responses to HRM influences by identifying the role of differing perceptions, interpretations and attributions of HRM (Bowen & Ostroff, 2004; Nishii et al., 2008; Wright & Nishii, 2007). Nonetheless, research empirically examining the antecedents or consequences of such variance remains absent.

The question of how HRM practices are perceived by employees and how such perceptions relate to organizational outcomes requires HRM research to capture responses to entire HRM systems at the individual level of analysis and bridging these perceptions to central HRM outcomes, such as human capital, at higher levels of analysis (Boxall & Macky, 2009; Nishii et al., 2008; Wright & Nishii, 2007). However, a multilevel approach to studying perceptions of and reactions to HRM systems will inevitably need to deal with the concept of variance at different levels of analysis (Wright & Nishii, 2007). Variance in employee attitudes, conceptualized as separation from the mean within an organization (Harrison & Klein, 2007), results not only from ‘objectively’ differing HRM practices for different employees within an organization but also from idiosyncratic interpretations of HRM practices and their implications (Liao, Toy, Lepak, & Hong, 2009; Wright, Gardner, Moynihan, Park, Gerhart, Delery, 2001). Given that perceptions of organizational practices precede attitudinal and behavioral reactions (Guest, 2004), this implies that HRM outcomes differ at different levels of analysis even if the actual setup of HRM practices would be held constant (Wright & Nishii, 2007).
To summarize, by building on Bowen and Ostroff’s (2004) theory the present thesis highlights two central issues in HRM research: firstly, the HRM system can be related to employee attitudes and behaviors in different ways at different levels of analysis. Secondly, the qualities of the HRM system can determine sharedness or variance in employee responses. Sharedness in attitudinal and behavioral responses in turn, reflects the extent to which a phenomenon can occur at a higher level of analysis. With this background I proceed to discuss the HRM process theory in more depth.

### 2.2.4. The HRM system as a context: The process view

Arguably, variance in perceptions of HRM practices at different levels of analysis constitutes an underutilized lens to HRM research. An employee’s perception of and reaction to HRM is not likely to depend solely on organizational level practices or even individual level attributes or dispositions. For example, an employee’s perception of HRM is likely to be influenced by the perceived saliency of the practices within a workgroup, how organizational practices are implemented, applied and communicated within a workgroup, as well as how colleagues within a work group respond to the same practices. In short, the context within which HRM happens is likely to significantly influence individuals’ perception of and reaction to HRM practices.

As pointed out by Johns (2006), contexts can be approached from a number of standpoints e.g. contexts as situational saliency, situational strength, bundles of stimuli, events, shapers of meanings, and simply constants or omitted variables. A shared feature of contexts,

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1 Figure adapted from Minbaeva (2010): The Need for Micro-Foundations in SHRM Research, Symposium presentation, presented at the Academy of Management Meeting, Montreal.
however, is that they constrain the range of observed variables (Johns, 2006). In other words, contexts restrict variance within any group being studied and hence also impact on the potential deviation of member responses within that group.

In this thesis I focus on the capacity of the HRM system in forming strong social influence situations that restrict variance in responses. Bowen and Ostroff (2004) conceptualize a strong HRM system as one that forms a powerful situation (cf. Mischel, 1976) in which employees respond to the HRM practices in uniform ways. More specifically, defined as “implicit or explicit cues provided by external entities regarding the desirability of potential behaviors’, the strength of a situation is assumed to reduce variance in behaviors by intensifying the psychological pressure on employees to engage in particular behaviors” (Meyer et al., 2010: 122).

In Meyer et al.’s (2010) recent framework, features of situational strength include clarity, consistency, constraints and consequences. Clarity refers to the extent cues regarding behavioral requirements are available and easy to understand; consistency is the extent to which these cues are mutually compatible; constraints refer to the limitation of an individual’s freedom of action; and consequences imply that behaviors are coupled with positive and/or negative implications. In Bowen and Ostroff’s (2004) HRM process framework the features of HRM strength are distinctiveness, consistency and consensus about behavior-reward relationships. These two models are to some degree analogous in that they share clarity/distinctiveness and consistency of situational cues. Also, constraints and consequences are implied in Bowen & Ostroff’s (2004) model as it explicitly deals with the promotion of behavior-reward relationships, where an instrumental link between behaviors and their implications is assumed to reduce employee action incompatible with the organization’s intent. On the contrary, consensus is an additional feature of HRM strength as it reflects the collective assessment of HRM system fairness coupled with agreement on the purpose of HRM practices among HRM decision makers. Hence, the definition of HRM strength contains a dimension of collective judgment central to the socially constructed saliency of cues signaled by HRM practices.

The process features of a strong HRM system are important with regards to the formation of employee attitudes and performance in that they characterize a particularly restricting context (Johns, 2006). Within a work group, employees may often be subject to a variety of different cues that can be ambiguous in their content and especially implications (Bowen & Ostroff, 2004). Ambiguity in HRM signals leads to inexplicit perceptions of proposed behavior-reward relationships as well as unstable judgments about appropriate behaviors (Guzzo & Noonan, 1994). If we accept that an instrumental relationship between desired
behaviors and expected rewards facilitates ‘appropriate’ action, then the saliency of a particular interpretation of HRM signals will increase the likelihood that employees will attend and adhere to the message implied in HRM practices as intended. Viewed as a strong situation, a strong HRM system triggers systematic processing of HRM signals resulting in stable interpretations that are shared within a workgroup (Eagley & Chaiken, 1993; Guzzo & Noonan, 1994).

In summary, Bowen and Ostroff’s (2004) theorization builds on the notion that specific HRM process features determine the strength of the HRM system. A strong HRM process is then proposed to engender strong organizational climates in terms of a collective understanding of expected behaviors and incentives to perform them. The HRM process theorization does not, however, specify the explicit climate that can be used to capture the effects of a strong/weak HRM process.

Both Bowen and Ostroff (2004) and Meyer et al. (2010) talk about desired or appropriate responses, and Bowen and Ostroff (2004) specifically argue for the centrality of strategically aligned organizational climates that emerge from individual level psychological climates. Ostroff and Bowen (2000) argued that such organizational climates emerge when both psychological climates (perceptions of the organizational context, e.g. the HRM system) and psychological contracts (perceptions about the exchange between employees and the employer) are shared across employees. The former reflects employee perceptions of what the organization is like (Ostroff & Bowen, 2000), including the strategic priorities of the organization. The latter correspond to employees’ perceptions of behavior-reward (cause-effect) relationships, or promised organizational inducements and expected employee obligations, signaled by the HRM system.

In the present thesis I specifically concentrate on employee obligations to engage in behaviors desired by the organization and argue that employee obligations are a logical outcome of Bowen & Ostroff’s (2004) theorization of employees” cause-effect attributions to the HRM system. In so doing, I do not focus on perceptions of general organizational strategies or objectives but examine the role of the HRM process in promoting collective psychological contracts (cf. normative collective contracts in Ostroff & Bowen, 2000) as well as the process through which shared contracts emerge.

### 2.2.5. HRM process outcomes: psychological contracts

Within social exchange theory-based approaches to HRM, systems or practices are defined as a set of inducements that are returned to the organization as employee contributions (e.g. Tsui, Pearce, Porter, & Tripoli, 1997; Wang, Tsui, Zhang, & Ma, 2003). Based on the norm of
reciprocity (Gouldner, 1960), this perspective focuses on the exchange processes between the organization and the employees. Simply put, employee attitudes and behaviors are viewed as responses to the inducements employees receive from the organization through investments in HRM practices. According to psychological contract theory (Rousseau, 1989, 1995), this setup of organizational inducements for employee contributions is the essence of a social relationship. Psychological contracts as implicit, dynamic and subjective perceptions of the employment deal function as a framework for predicting employee attitudes and behaviors (Conway & Briner, 2005; Guest, 2004; Rousseau, 1995). For HRM research, psychological contract obligations, referring to employees’ felt commitment to exert positive behaviors for the organization are central attitudes that can be used to capture the effect of HRM systems on employees’ attitudes towards developing their skills, exerting effort and taking initiatives to fulfill organizational objectives.

A central contention of this thesis is that a psychological contract framework can be usefully applied to capture attitudinal reactions to HRM systems, and that these reactions centrally influence the intensity and direction of employee behaviors (Guest, 2004). In line with Bowen and Ostroff’s (2004) theory, HRM systems have the potential to influence how employees perceive, interpret and understand organizational cues (Bowen & Ostroff, 2004; Rousseau & Greller, 1994). HRM systems continuously send cues about both routine and uncustomary events such as recruitment and promotion of personnel, selection of participants to training programs, delivery of feedback and distribution of compensation (Guzzo & Noonan, 1994). All these events influence employees’ conception of the principles that guide behaviors desired by the organization. Centrally, employees’ perceptions of the terms of their employment relationship are construed by receiving explicit and implicit cues about the kind of behaviors or achievements that are expected and rewarded within the work group (Bowen & Ostroff, 2004; Guest, 2004; Rousseau & Greller, 1994). From this perspective, an employee’s psychological contract can be conceived as the result of a sense-making process through which an interpretation of available signals about the terms of the exchange relationship is construed (Rousseau, 1995; Weick, Sutcliffe, & Obstfeld, 2005). These interpretations contained in the psychological contract form the basis for employees’ choices regarding the organization e.g. “whether to join, how to expend effort, what to learn, how long to stay and how to treat other people” (Rousseau & Greller, 1994: 385). The psychological contract, therefore, functions as a framework for determining employee action and interaction within the organization. For example, in line with the AMO view of HRM, an employee’s willingness or felt obligation to develop skills, exert effort and take initiatives depends on whether these behaviors are perceived as desired and are linked to some sort of reward and/or recognition. As a consequence, how the HRM system influences the construction of psychological contracts is of particular interest to this thesis.
2.3. Conceptual summary

The thesis and the four essays build on the above conceptual framework in examining the linkages between the HRM system and psychological contracts at the individual and collective level of analysis. Hence, I position the psychological contract as a central outcome of the HRM system content and process features. Importantly, I extend previous psychological contract research by examining the role of the HRM process in shaping the sharedness (or variance) in psychological contract obligations. Thereby, I view strong HRM systems as antecedents of the extent to which psychological contracts emerge as shared collective constructs. In so doing, I focus explicitly on psychological contract obligations as proximal antecedents of employee action and interaction with the organization (cf. Guest, 2004). In essence, I argue that the psychological contract framework functions as a fruitful lens to assess the extent to which the HRM process engenders desired attitudinal responses preceding employee performance. In particular, I extend this concept to the collective level of analysis by focusing on the extent to which the HRM process promotes both high and shared psychological contract obligations within groups that ultimately lead to desired outcomes such as employee and organizational performance. This conceptual setup of the thesis is displayed in Figure 3.

![Figure 3 - Conceptual overview](image-url)
3 METHODS

The thesis builds on three different empirical quantitative studies. In this chapter I outline the general methodologies applied in the different studies. I direct readers to the individual essays in the appendices for a more detailed overview of the methods used in each study. Nevertheless, for the purpose of clarity the operationalization of the HRM system construct requires some attention. In all studies the HRM system was measured by means of employee perceptions. In study 1 I examined perceptions of HRM content, using talent management as the focal type of HRM practice. In study 2 I assessed perceptions of HRM process, using performance appraisals as the focal type of HRM practice. In study 3 I applied a comprehensive measure of a wide range of HRM practices capturing employee perceptions of the process features of the entire system.

Below I describe the general methodological framework for the thesis as well as the data collection process and key constructs for each individual study.

3.1. A multilevel research approach

The stated research questions concerning the relationships between HRM and attitudes and performance at different levels pose some challenges for both research design as well as data analysis.

Firstly, the question of how HRM practices are perceived by employees and how such perceptions relate to organizational outcomes requires research that captures responses to entire HRM systems at the individual level of analysis and bridging these perceptions to higher-level HRM outcomes, such as human capital or organizational performance. In terms of research design the challenge lies in obtaining a sufficiently large sample of employees nested within a sufficiently large number of groups such as teams, units or organizations to obtain statistical power at both levels. Unfortunately, there are at present no general sampling recommendations for multilevel research designs.

Secondly, once a multilevel sample has been obtained, the researcher must consider the methodological implications of the hierarchical or nested nature of the sample (Mathieu & Chen, 2010). The reason for this is that it is highly likely that many relationships between organizational (behavior) constructs occur at multiple levels simultaneously, but potentially in different ways at different levels of analysis (Kozlowski & Klein, 2000). For example, a relationship between two constructs may hold at multiple levels, at one level only or may even have the opposite direction at another level of analysis (Mathieu & Chen, 2010). Therefore, it becomes necessary to avoid “fallacies of the wrong level”; that is, erroneously
attributing a phenomenon, theoretical construct or relationship to a certain level when it in
fact is at least partly attributable to another (Dansereau, Cho, & Yammarino, 2006: 537). In
practice, if a construct exhibits variance at multiple levels of analysis it is difficult to make the
assertion that it can and should only be attributed to a single level of analysis.

Within this thesis three different studies were carried out to approach the stated research
questions from different methodological as well as theoretical perspectives. In study 1, I used
a single-level research design using each individual as the key informant for organizational
practices and organizational outcomes. While much used, this approach comes with the
disadvantage that the reliability of the informant’s response cannot be assessed. Therefore,
research has increasingly moved towards using multiple employees as respondents (Takeuchi
et al., 2009; Takeuchi et al., 2007). This research design was applied in study 2 where
multiple employee responses within a large sample of groups (subsidiaries) were aggregated
to the group-level to reflect the collective perception of HRM, attitudes or performance. In
study 3, this research design was further extended to include both multiple employees as
respondents at the individual level and supervisors as respondents at the group level. This
research design enabled simultaneous analysis of relationships at multiple levels.

3.1.1. Analysis methods
The method of analysis for each study was determined by the nature and structure of the data
as each research design posed different requirements for reliable analysis. The research
design of study 1 did not involve nested data, therefore the analysis was performed using a
single-level structural equation model (SEM). In contrast, the issue of variance at different
levels of analysis was methodologically approached in study 2 and 3. Study 2 specifically
focuses on the antecedents and consequences of within-group variance. Referred to as a
dispersion model, the applied method involves examining the within-group variance of any
The use of dispersion models is thus different from traditional aggregation considering
within-group variance as “little more than a statistical hurdle in the process of establishing a
rationale for aggregation” (Meade & Eby, 2007: 76). Dispersion models specifically help the
researcher to extend the analysis of aggregated data by explicitly examining the role of the
variance; that is, the standard deviation of responses within each surveyed group of
employees.

In study 3, I adopt a multilevel structural equation modeling (SEM) framework, the potential
of which has been recognized but not yet fully realized within management research (Hitt,
Beamish, Jackson & Mathieu, 2007). The strength of this method is that it decomposes the
variance of a construct into two uncorrelated latent variables, i.e. within vs. between, and thus enables analysis of simultaneous relationships at more than one level. This procedure is more reliable than traditional aggregation of data to a higher level as it estimates measurement-error free latent scores for the group-level variable.

These applied procedures are illustrated in Figure 4, which serve as a starting point for the following presentation of the individual essays in Section 5.

**Figure 4 – Methodological setup**

### 3.1.2. Procedures to increase validity & reliability

I followed the recommendations by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) to reduce potential common method variance in all three studies. Firstly, in order to differentiate the psychological context in which the different questions were answered, I allocated the measures for the independent and dependent variables in different sections of the questionnaire. Secondly, in order to reduce potential social-desirability bias anonymity was guaranteed to all respondents.

Before proceeding with the main analysis, all measures included in the respective study were first tested for discriminant² and convergent³ validity in a CFA measurement model. The purpose of the CFA measurement model is to specify the theorized model and evaluate the fit of the model against the structure of the data. High fit indices reflect acceptable discriminant and convergent validity. In practice, if individual questions reflecting the same measure do not correlate, and if questions from different measures do correlate the CFA would result in poor fit indices.

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² Discriminant validity = items in one measure diverge (do not correlate) from other theoretically unrelated items.
³ Convergent validity = items in a measure converge (do correlate) with the other theoretically related items.
As the CFA measurement models in all studies displayed acceptable fit to the data, I then proceeded to specify a full structural equation model (SEM) to test the hypotheses developed in each essay. The SEM technique is a flexible statistical technique that allows for the simultaneous analysis of multiple relationships among any observed or latent variables. The use of latent variables with multiple factor indicators (items) allows the researcher to increase the reliability of the analysis by excluding measurement error from the observed measures.

In addition to the above, in study 2 I applied the CFA marker technique to reduce the effect of common method bias as recommended by Richardson, Simmering and Sturman (2009). The idea is to partial out non-substantive variance by including a theoretically unrelated construct that reflects the most likely source of shared variance (cf. effect of positive affectivity in Williams & Anderson, 1994). Therefore I included an unrelated three-item marker using the same scale as all the substantive variables in the model and defined paths from a latent common method marker to the three items as well as all other items to partial out shared variance in the final model.

The practice for developing the questionnaires consisted of (1) literature reviews of previous research, (2) multiple rounds of iterations and discussions within a research team, and (3) pilot-testing the questionnaires with HR managers, and managers in similar positions as the respondents. The purpose of this iterative process was to establish validity of the measurement instrument by making sure that the questions captured the focal phenomena as intended and were understandable to respondents.

The data collection procedure and key constructs are briefly described for each study below. In all studies the operationalized constructs were measured on 7-point likert scales.

### 3.2. Study 1 – Essay 2

#### 3.2.1. Data collection

Study 1 consists of two datasets. First, I conducted qualitative exploratory data from 17 face-to-face interviews with heads of HR in Nordic multinational corporations (MNCs) (see study 2 for more detail). Second, I completed a quantitative survey of 126 Finnish managers and professionals among business school alumni. The purpose of the exploratory interviews was to gain information about the role of talent management as an HRM practice as well as how business organizations define and distinguish talent in employees. From the interview material I extracted a categorization of talent that I subsequently applied in constructing a measure of talent inducements for the subsequent quantitative survey.
I collected the data for the main study by means of a web survey conducted between November 2009 and January 2010. The survey was sent by e-mail to a sample of managers and professionals among alumni from a Finnish business school as part of a monthly newsletter administered by the school. The e-mail was sent to 2,259 addresses recorded in an alumni contact database. A reminder was sent in connection with a subsequent newsletter one month later. A total of 126 questionnaires were completed yielding a total response rate of 5.6 per cent. Low response rates raise concerns for non-response biases that result from significant differences in the demographic profiles of respondents and non-respondents that in turn may influence relationships between variables of interest (Keener, Miller, Kohut, Groves, & Presser, 2000). To minimize the risk for non-response bias I tested our sample for demographic differences by comparing the means of a range of demographic variables between respondents completing the questionnaire before and after the reminders were sent (see e.g. Curtin, Presser, & Singer, 2000). Independent samples t-tests revealed no significant mean differences (p>.10) between early (N=83) and late respondents (N=43) with regards to: age, graduation year, position level, tenure in organization, tenure in position and work experience in other organizations.

The final sample consisted of Swedish-, Finnish- and English-speaking alumni. The language used in the questionnaire was English throughout because members of the target group where deemed to be sufficiently proficient as a result of their educational background. The average tenure of the respondents was 5.1 years in the organization and 3.0 years in their current position. More detailed descriptive statistics are reported in Table 2.
<table>
<thead>
<tr>
<th>N = 126</th>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Organization size</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;10 employees</td>
<td>11.9</td>
</tr>
<tr>
<td></td>
<td>11-100 employees</td>
<td>23.8</td>
</tr>
<tr>
<td></td>
<td>101-1 000 employees</td>
<td>27.8</td>
</tr>
<tr>
<td></td>
<td>1 001-10 000 employees</td>
<td>15.9</td>
</tr>
<tr>
<td></td>
<td>10 001 or more employees</td>
<td>19.0</td>
</tr>
<tr>
<td></td>
<td><strong>Type of organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government or municipal institution</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>Private company</td>
<td>52.4</td>
</tr>
<tr>
<td></td>
<td>Non-profit organization</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Corporation</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td><strong>Position level</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partner</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>Top management</td>
<td>13.5</td>
</tr>
<tr>
<td></td>
<td>Middle Management</td>
<td>19.8</td>
</tr>
<tr>
<td></td>
<td>Professional/Expert</td>
<td>46.8</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td><strong>Function</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Business management</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>Sales, marketing or customer service</td>
<td>22.2</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>24.4</td>
</tr>
<tr>
<td></td>
<td>Logistics and sourcing</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>HR</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>Research and development</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>Legal and administration</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 or younger</td>
<td>34.1</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
<td>31.0</td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>51-60</td>
<td>7.9</td>
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<tr>
<td></td>
<td>61 – 70</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>70 or older</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>42.1</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>57.9</td>
</tr>
</tbody>
</table>

Table 2 - Descriptive data, study 1

### 3.2.2. Key constructs

**HRM content: Skill-enhancing HRM practices.** I used four items from Takeuchi, Lepak, Wang and Takeuchi’s (2007) employee-rated high-performance work-systems scale (originally from Lepak & Snell, 2002), reflecting HRM practices enhancing employee skills and abilities. The items reflected HRM practices (selection, job-design and development) emphasizing the overarching objective of increased skills and abilities of the organization’s human capital. Example items include: 1) *selection places priority on potential to learn and 2) jobs are designed around individual skills and abilities.*

---

4 Sums may not amount to 100% due to missing values
**HRM inducements.** I constructed a measure of HRM inducements based on our findings from the pre-study. The measure contained the dimensions of talent that the interviewed organizations included in their definition of talent, i.e. (1) high performance, (2) high capabilities and skills, (3) proactive initiative taking and (4) active support of organizational strategy, values and leadership behaviors. I asked the respondents to rate the extent to which they perceived that their organization had committed itself to provide career and promotion opportunities based on the above. Example items include: 1) to provide highly capable and skilled individuals with career and promotion opportunities and 2) to provide individuals proactively taking new initiatives with career and promotion opportunities.

### 3.3. Study 2 – Essay 3

#### 3.3.1. Data collection

Data for study 2 was collected in the context of a large-scale research project on global HRM during 2008-2010. The first step in the data-collection process was to identify the twenty largest Finnish multinational corporations (MNCs) in terms of number of employees. We also established that the scope of their international operations was suitable for the purpose of our project. Our aim was to gain access to 10 subsidiaries in 10 MNCs, and the result was that eight of them chose to participate in the project. In the second phase we targeted additional Swedish and Norwegian MNCs of a similar size to increase comparability, and as a result one Swedish and three Norwegian companies joined the project. The resulting twelve Nordic MNCs represent a variety of industries, ranging in size from 2,500 to 60,000 employees and with subsidiaries in approximately 30 different countries.

The research design consisted of pilot-interviews with the HR director of all MNCs (N = 12), structured telephone-interviews with each participating subsidiary’s general manager and HR manager (N = 2 x 123), and a web-based survey of managers and professionals in each subsidiary. The purpose of this research design was to obtain data about the HRM systems in each MNC at different levels of analysis. The data from the subsequent telephone interviews with HR and general managers were for the purpose of this thesis only used as background data in constructing the subsequent web-based survey for subsidiary employees. A general overview of the participating MNCs and subsidiaries are displayed in Table 3.
<table>
<thead>
<tr>
<th>Company</th>
<th>Home country</th>
<th>Subsidiaries included in the study</th>
<th>Subsidiary locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNC1</td>
<td>Finland</td>
<td>16</td>
<td>Australia, Belgium, China, Finland (x 2), France, Germany, Italy, India, Mexico, Russia, Spain, Sweden, Turkey, UK, US</td>
</tr>
<tr>
<td>MNC2</td>
<td>Finland</td>
<td>13</td>
<td>England, Estonia, Finland (x 2), Germany, Latvia, Poland, Russia, Sweden (x 5)</td>
</tr>
<tr>
<td>MNC3</td>
<td>Finland</td>
<td>13</td>
<td>Brazil, China (x 3), Finland, Germany (x 2), India, Indonesia, Israel, Italy, UAE, US</td>
</tr>
<tr>
<td>MNC4</td>
<td>Finland</td>
<td>11</td>
<td>Australia, Canada, China, Finland, France, Germany, India, Netherlands, Sweden, UK, US</td>
</tr>
<tr>
<td>MNC5</td>
<td>Finland</td>
<td>10</td>
<td>China (x 3), Finland (x 2), Germany, Italy, Sweden (x 2), US</td>
</tr>
<tr>
<td>MNC6</td>
<td>Finland</td>
<td>8</td>
<td>Latvia, Denmark, Estonia, Finland (x 2), Russia (x 2), Sweden</td>
</tr>
<tr>
<td>MNC7</td>
<td>Finland</td>
<td>8</td>
<td>Brazil, China, Finland (x 2), Germany, Poland, UK, US</td>
</tr>
<tr>
<td>MNC8</td>
<td>Finland</td>
<td>8</td>
<td>Australia, Canada, Chile, Finland, Germany, South Africa, Sweden, US</td>
</tr>
<tr>
<td>MNC9</td>
<td>Norway</td>
<td>10</td>
<td>Brazil, China, Denmark, Germany, Italy, Norway, Poland, UAE, UK, US</td>
</tr>
<tr>
<td>MNC10</td>
<td>Norway</td>
<td>10</td>
<td>Belgium (x 2), Brazil, China, Finland (x 2), Norway (x 2), Spain, UK</td>
</tr>
<tr>
<td>MNC11</td>
<td>Norway</td>
<td>9</td>
<td>China, Holland, Italy, Malaysia, Norway, Russia, Singapore, UK, US</td>
</tr>
<tr>
<td>MNC12</td>
<td>Sweden</td>
<td>7</td>
<td>China, Denmark, Germany, Hong Kong, Sweden, UK, US</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>123</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average / MNC</strong></td>
<td></td>
<td><strong>10.25</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 - Overview of MNCs

For the web-based study that forms the empirical basis of Essay 3, each subsidiary HR manager (whom we had interviewed over the phone approximately 6 months earlier) chose 10 respondents within the subsidiary according to the following criteria: 1) there should be a fairly even balance between managers (with direct subordinates) and professionals/specialists from each subsidiary, 2) the managers should be 1-2 hierarchical steps away from the General Manager (i.e. they report to the General Manager or to a manager that reports to the General Manager), and 3) managers and professionals/specialists from the HR function were not accepted.

The respondents were then sent an e-mail briefly describing the project and inviting respondents to complete a web-based questionnaire. We created unique questionnaires for each MNC to enable the inclusion of some MNC-specific terminology concerning HRM practices. Reminders were sent after 1-2 weeks. In case the response rate remained low after two reminders, the HR manager was contacted to remind respondents personally or provide additional respondents. After this we also sent a final reminder to the remaining respondents.
The data collection effort resulted in a total of 11 MNCs and 106 subsidiaries due to attrition of one MNC and a total of 17 subsidiaries. Within these subsidiaries the final sample consisted of 930 managers and professionals producing a response rate of 80%. The survey was answered anonymously, with individual respondents being unidentifiable. Descriptive data for this sample is presented in Tables 4 and 5.

<table>
<thead>
<tr>
<th>Subsidiaries</th>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidiary size (no. employees)</td>
<td>&lt;100</td>
<td>17.9</td>
</tr>
<tr>
<td></td>
<td>100-500</td>
<td>41.5</td>
</tr>
<tr>
<td></td>
<td>501-1000</td>
<td>19.8</td>
</tr>
<tr>
<td></td>
<td>&gt;1000</td>
<td>19.8</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>0.9</td>
</tr>
<tr>
<td>Subsidiary age (years in the MNC)</td>
<td>&lt; 5 years</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>5-10 years</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>11-20 years</td>
<td>29.3</td>
</tr>
<tr>
<td></td>
<td>&gt; 20 years</td>
<td>48.1</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>0.9</td>
</tr>
<tr>
<td>Size of the HR function (no. people)</td>
<td>1</td>
<td>24.5</td>
</tr>
<tr>
<td></td>
<td>2-5</td>
<td>30.2</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td>&gt;10</td>
<td>25.5</td>
</tr>
<tr>
<td>Acquisition</td>
<td>Yes</td>
<td>49.1</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Table 4 - Descriptive data, study 2 – subsidiaries
### Table 5 - Descriptive data, study 2 – individuals

<table>
<thead>
<tr>
<th>Individuals</th>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 930</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Gender       | Male          | 74.0 |
|             | Female        | 25.5 |
|             | Missing       | 0.5  |

<table>
<thead>
<tr>
<th>Tenure in the MNC (years)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 month</td>
<td>1.1</td>
</tr>
<tr>
<td>7-11 month</td>
<td>1.6</td>
</tr>
<tr>
<td>1-2 years</td>
<td>13.2</td>
</tr>
<tr>
<td>3-5 years</td>
<td>24.0</td>
</tr>
<tr>
<td>6-10 years</td>
<td>18.8</td>
</tr>
<tr>
<td>11-15 years</td>
<td>18.8</td>
</tr>
<tr>
<td>16-20 years</td>
<td>8.4</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>14.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Function</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Management</td>
<td>14.5</td>
</tr>
<tr>
<td>Manufacturing/Production/Operations</td>
<td>18.3</td>
</tr>
<tr>
<td>Sourcing/Purchasing/Logistics</td>
<td>9.2</td>
</tr>
<tr>
<td>Service</td>
<td>10.3</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>4.4</td>
</tr>
<tr>
<td>Sales/Marketing/Communications/PR</td>
<td>19.4</td>
</tr>
<tr>
<td>Finance/Accounting</td>
<td>8.8</td>
</tr>
<tr>
<td>Other</td>
<td>14.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting to General Manager</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40.2</td>
</tr>
<tr>
<td>No</td>
<td>59.8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Nr of subordinates</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (none)</td>
<td>33.4</td>
</tr>
<tr>
<td>1-4</td>
<td>19.6</td>
</tr>
<tr>
<td>5 or more</td>
<td>47.0</td>
</tr>
</tbody>
</table>

### 3.3.2. Key constructs

**HRM process.** Bowen and Ostroff (2004) note that an important topic for future research is to develop measures of HRM process features. In pursuing this, and given that there currently is no knowledge of the relative importance of these features, we focused on a subset of them covering all of the three dimensions of situational contingencies as described by Bowen and Ostroff (2004), i.e. distinctiveness, consistency and consensus. The specific process features under examination in the present study were visibility (distinctiveness), validity (consistency), and procedural and distributive justice (consensus). In developing these measures we followed Bollen (1989) and began by focusing on face validity, extracting definitions and key characteristics of the HRM process features as described by Bowen and Ostroff (2004). The operationalizations were then developed through multiple rounds of iterations in meetings with the six person research team that together developed the present research design and collected the data. We pre-tested the operationalizations in pilot
interviews with four external managers in equivalent positions to the respondents in the present study. Based on their feedback we re-worded some questions. The final measure consisted of three items for each HRM process features. Example items are listed below. 

**Visibility:** there is a lot of emphasis on the performance appraisal process in this unit. 

**Validity:** the performance appraisal process really helps me understand how I perform in my job. 

**Procedural justice:** the performance appraisal process is applied without any bias. 

**Distributive justice:** on the whole, the outcomes of the performance appraisal process (rewards, career and development opportunities) reflect fairly my contribution to the organization.

**Employee obligations.** To measure employee obligations we used items from Rousseau’s (2000) psychological contract inventory (PCI), and used 3 items for accepting performance demands and 3 items for the commitment to building skills respectively. We asked respondents to indicate to what extent they felt they had made a range of commitments to their employer. Example items include 1) to accept increasingly challenging performance requirements and, 2) to seek out developmental opportunities that enhance my value to my employer.

### 3.4. Study 3 – Essay 4

**3.4.1. Data collection**

The data for this study was collected from the management and IT consultancy industries in Sweden (roughly 80% of the observations) and Finland (roughly 20%). These types of companies are highly dependent on their employees’ contributions (Swart, 2007; Skaggs & Youndt, 2004) and thus offer favorable conditions for investment in HRM. Having respondents from only one industry helped us to control for possible industry effects. We identified 120 management and IT consultancy companies employing at least 20 consultants. With the help of the CEO (our first contact in each company) one senior consultant in 112 organizations agreed to participate in the study. Each senior consultant was asked to choose three subordinate consultants whose work performance he/she was familiar with. Questionnaires were then sent both to the senior consultants, who evaluated the subordinate consultants’ and organizational performance, and the subordinate consultants who responded to questions related to their perceptions of the company’s HRM system. Confidentiality was guaranteed to all parties, and procedures were in place that enabled us to match the subordinates’ responses with the respective individual performance evaluations obtained from the senior consultants. We obtained the requested performance data from the senior consultant together with at least one subordinate consultant’s responses from 62
companies. The overall number of responding subordinate consultants was 164. We used list-wise deletion on all observations missing two or more items in a construct. The effective sample comprised of 147 observations related to subordinate consultants spread out among 54 companies. This amounted to 45 per cent of the 120 contacted organizations, and 41 per cent of the targeted three subordinate consultants in each of them.

The questionnaire was administered in English in the two countries mentioned above as most people in the type of organization in question are fluent in the language. We conducted a pilot study in one Finnish and two Swedish consultancy firms, one of the researchers being present while, in each firm, one manager and three consultants filled out the questionnaire. We subsequently made some revisions to it.

3.4.2. Key constructs

HRM process. In Essay 4 we measured HRM process features for each of the following practices: selection, socialization, performance appraisal, training and development, communication, compensation, autonomy and involvement. These practices (HRM content) are in line with those included in prior research on HRM (Appelbaum et al., 2000; Boselie et al., 2005). We measured the following HRM process features of each of the practices: their perceived understandability and relevance (according to Bowen and Ostroff (2004) fostering system distinctiveness) and validity and stability (according to Bowen and Ostroff (2004) fostering system consistency). Each process feature was measured with eight items (one for each practice) and these items were, in line with Bowen and Ostroff’s (2004) suggestions (2004, p. 217), used to create an additive scale for each feature.

Employee performance. Supervisor rating of subordinate consultants’ performance was measured with four items, two reflecting employee productivity (efficiency and meeting deadlines) and two reflecting the quality of work (making errors and receiving customer complaints). The items correspond to the job performance measure validated by Welbourne, Johnson and Erez (1998) and include items such as 1) (Efficiency) ‘always meets or beats deadlines for completing work’ and 2) (Quality) ‘performs his/her duties with unusually few errors’.
4 SUMMARY OF THE ESSAYS

In this section I briefly provide a summary of the theoretical setup and main findings from each essay. Each summary begins with an overview of the addressed research question, the applied theoretical perspectives, sample, analysis method and operationalization of the HRM system construct. For the sake of clarity, the examined relationships are depicted in a figure illustrating the linkage to the conceptual overview depicted in Figure 3 in chapter 2. Any additional results or findings are discussed in the actual summary for each essay. The implications of the findings are discussed in Section 5.


Author: Mathias Höglund

A previous version of this paper was published in the Best Papers Proceedings, Academy of Management Meeting, 2010. The current version is under review in Group & Organization Management.

<table>
<thead>
<tr>
<th>Essay</th>
<th>RQ</th>
<th>Issues addressed</th>
<th>HRM construct</th>
<th>Sample</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>i</td>
<td>The effects of employee perceptions of the HRM system on work-group psychological contract obligations.</td>
<td>HRM Content &amp; HRM Process</td>
<td>Conceptual</td>
<td>Conceptual</td>
</tr>
<tr>
<td></td>
<td>ii</td>
<td>The effects of the level of and variance in psychological contract obligations on human capital in work-groups.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Essay</th>
<th>RQ</th>
<th>Issues addressed</th>
<th>HRM construct</th>
<th>Sample</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>i</td>
<td>The effects of employee perceptions of the HRM system on work-group psychological contract obligations.</td>
<td>HRM Content &amp; HRM Process</td>
<td>Conceptual</td>
<td>Conceptual</td>
</tr>
<tr>
<td></td>
<td>ii</td>
<td>The effects of the level of and variance in psychological contract obligations on human capital in work-groups.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In this essay, I present a conceptual framework on the influence of Human Resource Management (HRM) on employee psychological contracts in work-groups. Drawing on multiple streams of literature, I provide an integrative theory for understanding how HRM influences within the context of a work group form individual and collective obligations towards the organization. Applying a perspective of HRM as signals, I draw on situationism and psychological contract theory to depict a theoretical framework on the antecedents and consequences of the average level as well as within group variance of employee obligations in work-groups.

This essay forms the basis for the theoretical framework in this thesis and depicts the mechanisms through which HRM practices (HRM content) signal organizational inducements that employees respond to by adjusting their obligations. I then extend the analysis of psychological contracts to the level of the work-group by proposing how features of the HRM system (HRM process) can reduce the within-group variance in employee obligations. Specifically, I propose that inter-individual cohesiveness in HRM inducements i.e. the similarity in inducements across employees within a group), HRM process strength as well as the horizontal alignment of HRM practices can reduce variance. Under such conditions of low variance I propose that employee obligations can be validly aggregated to the group level of analysis as an obligations climate construct. Lastly, I argue that the level and within-group variance of the obligations climate will interact such that a relationship with human capital is stronger when within-group variance is low. Finally, I present avenues for future research and suggestions for empirical testing of the framework.

---

5 Levels of analysis are separated by a dashed line.
Grey boxes and arrows represent constructs and relationships outside the scope of the essay.
4.2. Essay 2 - Quid pro quo? Examining talent management through the lens of psychological contracts.

Authors: Mathias Höglund


<table>
<thead>
<tr>
<th>Essay</th>
<th>RQ</th>
<th>Issues addressed</th>
<th>HRM construct</th>
<th>Sample</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>i</td>
<td>❖ The mediating role of psychological contracts in the relationship between employee perceptions of the HRM system and human capital.</td>
<td>HRM Content (Talent management)</td>
<td>Business school alumni from various Finnish organizations. (N = 126)</td>
<td>Individual-level SEM.</td>
</tr>
</tbody>
</table>

**Figure 6 - Essay 2 framework**

Building on the conceptual framework in Essay 1, Essay 2 explores the linkages between HRM content, perceived inducements, employee obligations and human capital. In so doing, it extends previous research on the direct effects of HRM practices (HRM content) (e.g. Youndt, Subramaniam, & Snell, 2004) to examine how employee responses to HRM practices mediate the linkage between HRM and human capital (cf. Boxall & Macky, 2009). A second contribution of this essay is that it presents and validates a measure of contingent organizational inducements developed based on 17 interviews with the head of HR in Nordic MNCs.
The results indicate that HRM practices are positively related to employee-perceived inducements and that the perceived level of these inducements fully mediates the direct relationship between HRM and human capital. What is more, psychological contract obligations to develop skills partially mediate the relationship between talent inducements and human capital. Hence, this paper shows how a psychological contract lens consisting of perceived organizational inducements and employee obligations can be usefully applied to capture how cues about the HRM system are perceived, interpreted and translated into relevant HRM outcomes.

4.3. Essay 3 – HRM strength and employee obligations: the case of the performance appraisal process

Authors: Mats Ehrnrooth, Mathias Höglund

Unpublished essay

<table>
<thead>
<tr>
<th>Essay</th>
<th>RQ</th>
<th>Issues addressed</th>
<th>HRM construct</th>
<th>Sample</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>i</td>
<td>The relationships between employee perceptions of the HRM system and the level of and variance in psychological contract obligations.</td>
<td>HRM process (Performance appraisals)</td>
<td>106 subsidiaries of multinational organizations with approx. 9 managers/professionals each. (N = 930)</td>
<td>Aggregated level SEM – Dispersion model.</td>
</tr>
</tbody>
</table>

![Figure 7 - Essay 3 framework](image_url)
Essay 3 forms a second and more comprehensive test of the framework presented in Essay 1. Specifically, in this essay we introduce a measure of the HRM process and examine the effect of the strength of the HRM process on both the level and within-group variance of an obligations climate. The results indicate that group HRM process level predicts the obligations level whereas group HRM process variance predicts variance in obligations. HRM process variance was also positively related to the obligations level. Finally, our analysis confirmed a moderating effect of HRM process variance on the relationship between HRM process level and obligations level. This implies that the HRM process is more strongly related to psychological contract obligations under circumstances of low within-group variance.

In general, these findings render support for the hypothesis that the collective perception of the HRM process is positively related to collective employee obligations. However, the main proposition put forth by the HRM process theory, namely a negative effect of the HRM process level on within-group variance in employee obligations, was rejected.

**4.4. Essay 4 - A two-level mediation test of HRM process effects on employee and organizational performance**

Authors: Mathias Höglund, Mats Ehrnrooth

Unpublished essay

<table>
<thead>
<tr>
<th>Essay</th>
<th>RQ</th>
<th>Issues addressed</th>
<th>HRM construct</th>
<th>Sample</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>i</td>
<td>The mediating role of the level of and variance in employee performance in the relationship between employee perceptions of the HRM system and organizational performance.</td>
<td>HRM process</td>
<td>54 organizations with approx. 3 consultants matched with a supervisor in Finland &amp; Sweden. (N = 147)</td>
<td>Two level SEM – Dispersional model.</td>
</tr>
</tbody>
</table>
In Essay 4 we go beyond Essay 3 and examine the effects of the HRM process on employee performance and extend the analysis to cover the entire path from the HRM process, through individual and collective employee performance, to organizational performance. Using a multilevel structural equation (SEM) approach we also assess to what extent the relationship between the HRM process and employee performance differ at the individual and group levels of analysis. Our analyses provide support for a positive relationship between individual perceptions of the HRM process and individual-level employee performance. However, similarly to previous HRM-employee performance research (Kuvaas, 2008; Peccei & Rosenthal, 2001; Stumpf, Doh & Tymon, 2010), the HRM process explains only a relatively marginal variance in employee performance ($R^2 = .066$). At the group level of analysis we also find a positive relationship between the group perception of the HRM process and organizational performance. Contrary to our hypotheses, the relationship between the group level HRM process and group level employee performance was not supported. These findings indicate that the effect of HRM on individual and collective employee performance may, at best, be weak. Contrary to this argument, we find that the group-level HRM process had an indirect effect on group-level employee performance through the within-group variance in employee performance. This implies that the HRM process does have an effect on group-level employee performance by fostering lower variance in performance among employees.

Figure 8 - Essay 4 framework
5 DISCUSSION

The purpose of this thesis was to contribute to previous HRM theory and research on the processes through which HRM practices become linked to collective outcomes through individual employees’ attitudes and performance. In so doing, the aim was to theoretically develop and empirically examine the effects of employee perceptions of both HRM system content and process by means of the following research questions.

i. How employee perceptions of the HRM system relate to individual and collective employee attitudes and performance.

ii. How employee perceptions of the HRM system relates to variance in employee attitudes and performance.

iii. How collective employee performance mediates the relationship between employee perceptions of the HRM system and organizational performance.

The above research questions were addressed in four different essays using three different datasets and applying Bowen and Ostroff’s (2004) HRM process theory and psychological contract theory. In what follows, I discuss the main findings and contributions and reflect upon the limitations of the thesis. I then present selected managerial implications before I end the thesis with a discussion of avenues for future research.

5.1. Main findings

The bulk of HRM research on the effects of HRM on organizational outcomes such as performance has assumed that organizational HRM practices can enhance organizational performance through their impact on positive employee attitudes and performance (see meta-analysis in Combs, Liu, Hall, & Ketchen, 2006). The mechanisms through which such HRM effects occur, however, remain underexplored. As discussed in this thesis, previous research has predominantly focused the level of analysis at aggregated levels such as the organization, unit or work-group and thereby largely ignored the questions of (1) how systems of HRM practices influence individuals’ attitudes and performance and (2) to what extent HRM systems cause employees to display similar attitudes and performance levels. As a consequence, how employee attitudes and performance, which essentially are individual-level constructs, mediate the linkage between HRM and organizational outcomes remains an unanswered question (cf. Boxall & Macky, 2005).

The purpose of this thesis was to contribute to filling this research gap by examining the relationships between employee perceptions of the HRM content and process and both
individual and collective attitudes and performance. The empirical findings from the essays are summarized in Table 6 whereafter the contributions are discussed.

<table>
<thead>
<tr>
<th>RQ</th>
<th>Level of analysis</th>
<th>Hypothesized relationship</th>
<th>Finding</th>
<th>Essay</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Individual</td>
<td>HRM content » Employee obligations</td>
<td>Yes</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HRM process » Employee performance</td>
<td>Yes</td>
<td>4</td>
</tr>
<tr>
<td>II</td>
<td>Group</td>
<td>HRM process » Obligations climate (level)</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HRM process » Employee performance (level)</td>
<td>No</td>
<td>4</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>HRM process » Obligations climate (variance)</td>
<td>No</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HRM process » Employee performance (variance)</td>
<td>Yes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HRM process » Organizational performance</td>
<td>Yes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HRM process » Employee performance (level) » Organizational performance</td>
<td>No</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 6 - Summary of findings

The contributions of the thesis are as follows. Firstly, I have extended research on the linkages between HRM systems and psychological contracts and thereby responded to calls for applying the psychological contract as a framework for assessing employee perceptions, interpretations and reactions to systems of HRM (Ostroff & Bowen, 2000; Wright & Nishii, 2007).

Specifically, I developed a measure of inducements and confirmed positive relationships between HRM content, perceived inducements and employee obligations at the individual level of analysis. These findings are also in line with Bowen and Ostroff’s (2004) argument that HRM practices always, implicitly or explicitly, send signals to employees about promised rewards (inducements) and behaviors (obligations) expected in return (cf. Guzzo & Noonan, 1994). The strength of these signals (HRM process) is discussed below.

Secondly, I extended the analysis of psychological contracts by presenting an extensive framework of the mechanisms through which different aspects of the HRM system (HRM inducements, process strength and alignment) can influence the group level and within-group variance in work-group psychological contract obligations. I introduced the notion of
an obligations climate and empirically confirmed a positive relationship between the collective perception of the HRM process and the group level of employee obligations. This collective-level relationship indicates that, despite the idiosyncratic and subjective nature of the psychological contract (Rousseau, 1995), parts of it can become shared within groups of employees subject to a strong HRM system and thus have significant implications at a higher level of analysis. This finding renders partial support for the HRM process theorization.

On the contrary, the hypothesized relationship between the HRM process and variance in employee obligations was rejected. Therefore, in the case of an obligations climate, Bowen and Ostroff’s (2004: 213) proposition according to which “the strength of the HRM system will foster the emergence of organizational climate (collective perceptions)” where “variability among employees’ perceptions” is small, was not supported. As a consequence, the question of exactly how HRM impact on the variance or sharedness in psychological contracts remains to be further explored in future research. It is likely that a range of individual characteristics as well as HRM and other work-group influences can produce both heterogeneity and homogeneity in psychological contracts (Ho, 2005). The relative salience of these processes is likely to influence the variance in psychological contracts.

Thirdly, I introduced measures of the HRM process and confirmed linkages between the HRM process and organizational performance at the group level and the HRM process and employee performance at the individual level. In this way, the thesis contributes with one of the first empirical tests of Bowen and Ostroff’s (2004) HRM process theorization.

The confirmed positive relationship between individual perceptions of the HRM process and individual-level employee performance supports their proposition that individual-level interpretations of the HRM process “will have significant associations with individual attitudes and behaviors” (Bowen & Ostroff, 2004: 213). In contrast, the findings did not support a direct relationship between the collective perception of the HRM process and collective employee performance. In general, this result is in line with recent research finding only relatively weak or absent relationships both between HRM and employee performance (Kuvaas, 2008; Pececi and Rosenthal, 2001; Stumpf, Doh and Tymon, 2010), and between HRM and organizational level productivity (Datta et al., 2005; Guest et al., 2003; Sun et al., 2007; Way, 2002; Wright et al., 2005). However, in the context of Bowen and Ostroff’s (2004) theorization this finding was unexpected since an effect of the HRM process on employee performance at the collective level of analysis is one of the major implications of the HRM process theory. In this vein, this finding clearly contradicts the theorization. Nevertheless, the hypothesized negative relationship between the collective perception of the HRM process and the variance in employee performance was supported. What is more, the
entire chain of links from the HRM process through variance in employee performance, and further through the level of employee performance to organizational performance was significant.

These findings are compatible with Bowen and Ostroff’s (2004) theorization of the HRM system influencing collective outcomes through conformity. Nevertheless, the linkages between the HRM process and both the level and variance in employee responses require further validation, given that the same relationship was rejected in the case of employee obligations. Future research capturing several forms of attitudinal and behavioral responses within the same research design is likely to shed more light on this issue.

Fourthly, this thesis contributes to research on situational strength in general and HRM system strength in particular by examining the antecedents and outcomes of within-group variance in perceptions of the HRM process and employee reactions. This approach addresses calls to study the microfoundations of collective phenomena, and specifically, the role of heterogeneity and homogeneity therein (Felin & Hesterly, 2007). In this vein, the findings also provide new insight into alternative conceptualizations of the components of the HRM process (level, variance and interaction).

Finally, in addition to these contributions to theory, the thesis contributes to research methodology by furthering the analysis of within-group variance as an independent construct in its own right as well as applying the multilevel SEM method allowing for simultaneous analysis of relationships at different levels of analysis. As the differential effects of the HRM process on employee performance at the individual and collective levels illustrate HRM effects on employee attitudes and performance can and do take place at different levels of analysis in different ways (cf. Mathieu & Chen, 2010).

5.2. Limitations

As most research, the contributions of this thesis need to be viewed in light of a number of limitations. Each conceptualization, operationalization and research design come with their strengths and weaknesses and inevitably limits the scope and contribution of the research. The limitations of each study in the thesis are detailed within the respective essay. Below I highlight a few general limitations that pertain to the thesis and the research endeavor in general.

Firstly, the key focus of the thesis lies in the influence of the HRM process on the extent to which individual employee attitudes and performance emerge at a higher level of analysis. Clearly, the word emergence hints towards a dynamic process where a whole over time
becomes constituted by the dynamic relationship between the parts. The analyses performed in this thesis are cross-sectional and therefore, by definition, static. As a consequence, the ability to attribute cause and effect in the confirmed relationships remains theoretical.

Secondly, the HRM process was studied through a set of previously unvalidated measures for a limited set of the HRM process features identified by Bowen and Ostroff (2004). An important topic for future research is to develop and validate alternative multidimensional measures of the HRM process encompassing all three metafeatures and their process subfeatures (Bowen & Ostroff, 2004, p. 216). Given the complexity of the theory in question this will inevitably involve initial explorative attempts with researchers over time striving towards a proper and as parsimonious as possible measurement instrument.

Thirdly, although the thesis focuses on the effects of the system of HRM process in terms of both the content and process features, two of the three empirical studies focused on a specific type of HRM practices, i.e. talent management in study 2 and performance appraisals in study 3. From a signaling perspective however, it may be difficult for respondents to isolate a single practice without considering other, possibly interlinked, HRM practices. It is therefore plausible that the relationships attributed to a single practice are inflated. What is more, to what extent these findings generalize to all forms of HRM practices remains an unanswered question.

Fourthly, the present thesis argued for the centrality of the HRM process. Although the thesis deals with both HRM content and process, theoretically and empirically, it does not evaluate the relative importance of HRM content vs. HRM process or potential interaction effects. Hence, if and to what extent, the HRM process explains significant variance in outcomes over and above HRM content remains a question for future research.

Finally, the research design encompassed a purely quantitative hypothetic-deductive approach to research. As a result, the thesis cannot address the detailed, nuanced and context-bound processes through which individuals come to construct a perception of HRM on which they choose to, or not to, act. Given the underdeveloped state of research on the antecedents and consequences of the HRM process, more exploratory research could enable researchers to develop new theory about the interaction between the HRM system, the employee and the local context.

Despite these limitations, I wish to point towards some managerial implications of the contributions and avenues for future research.
5.3. Practical implications

The managerial implications of this thesis stem from the recognition that HRM systems communicate powerful cues that influence how employees individually and socially construe their psychological contracts. As a consequence, HR practitioners need to consider to what extent HRM practices signal desired attitudes and behaviors and associated rewards. As indicated by my results such cues have significant effects on employees’ psychological contracts and performance.

In Figure 9, I have illustrated how the average level and within work-group variance of employee obligations interacts to form different exchange situations. The ideal situation will depend on the organization’s intended HRM objectives for a specific work group as well as the characteristics of the work group in question (Lepak & Snell, 1999, 2002; Lepak, Taylor, Tekleab, & Marrone, 2007). For example, a high-involvement HRM strategy strives to increase the involvement of a core group of employees through initiatives aimed at empowering employees (e.g. Lawler, 1986). Simplified, the degree of desired involvement is signaled through HRM practices, which employees respond to by adjusting their attitudes and behaviors (Boxall & Macky, 2009). The comprehensiveness of HRM practices (HRM content), will differ between organizations and further between work groups within an organization (Lepak Snell, 1999, 2002). Organizations may choose to invest more in the employment relationship with core work groups whereas other work groups in the periphery of the organizational value creation process may be covered by more limited HRM practices.

Judgments concerning the extensiveness of HRM practices from the organizational perspective will be based on whether the perceived benefits of these investments will outweigh the costs for the organization (Boxall & Macky, 2009). In some work groups, the desired level of obligations or involvement may be lower than for others and therefore the HRM investments made for the work group in question will be more limited (see e.g. Wang et al., 2003). In any case, above and beyond the extensiveness of the system HRM practices, that is, HRM content, a weak HRM process is likely to result in the absence of a shared work-group obligations climate. In such a situation, employees will work towards their individual perception of their work priorities which may or may not match the organizational intent.

In this manner, the organizational attainment of strategic objectives will be influenced by the extent to which employees consistently adjust their obligations with the strategic objectives of the work group. This forms the case for organizational attempts to strengthen the HRM system. A strong HRM process should engender perceptions that (1) correspond to organizational intentions and (2) are shared across employees. For managers and HR-
practitioners this line of thought calls for more explicit attention to the assessment of the state of HRM implementation in different organizational units.

HR practitioners need to consider to what extent HRM practices are explicitly communicated and to what extent managerial communication reflect the original intent. As HRM practices can and do have powerful effects on employee attitudes and behaviors it is important to ‘walk the talk’ of HRM. Unmet expectations easily lead to psychological contract breach and feelings of violation that can have serious adverse effects on employee attitudes and behaviors (Morrison & Robinson, 1997; Zhao, Wayne, Glibkowski & Bravo, 2007). If employees perceive the same HRM system in very different ways within a single work-group it is likely that some of these perceptions will not match what the HRM system actually delivers. Hence, work-groups with higher variance in perceptions of HRM are also likely display more frequent feelings of psychological contract violation.

![Figure 9 - Exchange situations](image)

**5.4. Avenues for future research**

It is clear from recent contributions in the HRM literature (see e.g. Kehoe & Wright, 2010; Nishii et al., 2008; Takeuchi et al., 2007; Wright & Nishii, 2007), that the majority of the variance in perceptions of HRM practices resides at the individual level. This implies that the majority of the variance in the arguably most important construct (the HRM system) of the field is explained by individual heterogeneity. This raises a question of crucial importance to HRM research: If, in general, individuals’ perceptions of and reactions to HRM tend to vary more within organizations, units, departments or teams than between, how can we explain the linkage between HRM and performance through aggregate attitudes and behaviors?
Clearly, all of this points to the fact that implicitly assuming homogeneity below the focal level of analysis is unjustified. In fact, as pointed out in this thesis there is a paucity of research examining how individual employees constitute their perceptions of and reactions to HRM. As a consequence, explaining if and under what circumstances the homogeneity assumption is valid is currently very difficult. Hence, more research should be directed towards explaining the actual processes through which employees come to perceive HRM as well as the causal mechanisms through which such perceptions are translated into attitudes and behaviors.

What is more, there is little knowledge explaining how emergent (upward) effects are constituted including the role of HRM in shaping these effects. While this thesis contributes incrementally by examining relationships between the HRM process and collective employee attitudes and performance as well as the within-group variance thereof, there is to my knowledge no research available on the antecedents of the strength of the HRM system in particular, or even strong situations more generally. In this vein, more research is needed to explain how the HRM process influences employee attitudes, behaviors and performance and how such mediators translate into higher-level organizational outcomes.

The results presented in this thesis highlight the importance of paying appropriate attention to the microfoundations of HRM research and especially research on the processes through which individual attitudes and behaviors emerge as shared properties at the collective level of analysis and become linked to organizational outcomes. This thesis shows that such emergent effects can and do take place in organizations. This preliminary finding, however, needs further theoretical and empirical examination. In particular, in order for researchers to be able to explain the linkage between the organizational HRM system and organizational performance, more studies applying various mediators at multiple levels of analysis are needed. Only through an increasing body of research findings is it possible to say more about this relationship.

Given the state of research regarding the notion of emergence in general, and the situational strength hypothesis in particular, the question of whether or not situational stimuli (such as HRM) function as a source of homogeneity is still an unresolved issue. In terms of HRM, this implies that the homogeneity assumption embedded in single-level HRM research e.g. depicting the relationship between organization level HRM and performance, may not be justified or realistic, at least with regards to HRM effects that are thought to be mediated by employee responses to HRM in terms of attitudes and behaviors. As a consequence, the question of naturally occurring employee-level heterogeneity in responses to HRM and the potential of the HRM system to influence this heterogeneity remains a key, yet unresolved
issue in HRM research. To repeat, if responses to HRM are largely idiosyncratic and individual heterogeneity accounts for the majority of variance in responses to HRM, the pertinent question becomes as follows: how can we as HRM researchers reliably assess the cross-level path from HRM systems to employee-attitudes to organizational outcomes? As illustrated in this thesis, this question calls for more multilevel research explicitly studying relationships occurring at multiple levels simultaneously as well as shedding light on how situational influences can impact the variance in collective responses to HRM practices. Whilst this thesis focused exclusively on HRM as a powerful source of influence, other relevant sources should be considered in parallel. It is highly likely that the variance in employee perceptions of and reactions to HRM may be influenced by the larger context in which the messages are perceived. For example, messages from top management, societal values, and organizational culture constitute plausible contextual influences that impact how employees respond to HRM.

The findings in this thesis provide general support for a focus on the microfoundations of organizational research (cf. Felin & Hesterly, 2007; Minbaeva et al., 2010). At the same time they raise some doubts about whether or not this perspective is sufficient to exhaustively account for the effects of HRM on organizational outcomes. The microfoundations view fits well with the commonly accepted mediation theory in HRM whereby employee abilities, motivation and opportunities to pursue organizational goals constitute the HRM-performance linkage. Despite this, the results in this thesis did not show that this linkage was fully explained by individual responses, in this case employee performance. It is therefore plausible to assume that neither a macro, nor a micro perspective is sufficient to truly explore the outcomes of HRM. It is highly likely that HRM systems to some extent influence employee attitudes and behaviors and to some extent have higher-level effects that are not directly experienced by employees. Therefore methodological collectivists, or individualists, in isolation are not likely to be able to shed light on more than a part of the HRM-performance relationship if the phenomena are not studied at and across multiple levels simultaneously.
**LIST OF REFERENCES**


APPENDIX 1 – ESSAY 1

WORK-GROUP OBLIGATIONS AS CLIMATE: A PSYCHOLOGICAL CONTRACT PERSPECTIVE ON HUMAN RESOURCE MANAGEMENT

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ABSTRACT

In this paper, I present a conceptual framework on the influence of Human Resource Management (HRM) on employee psychological contracts in work-groups. Drawing on multiple streams of literatures, I provide an integrative theory for understanding how HRM influences within the context of a work group form individual and collective obligations towards the organization. Applying a perspective of HRM as signals, I draw on situationism and psychological contract theory to depict a theoretical framework on the antecedents and consequences of the average level as well as within group variance of employee obligations in work-groups. In so doing, I shed more light on the specific linkages between HRM systems, work-group obligations and organizational human capital.

INTRODUCTION

Strategic human resource management (henceforth SHRM) implies that systems of HRM practices influence the human capital of an organization so as to increase organizational performance. Despite evidence on an HRM-performance link (e.g. Arthur, 1994; Huselid, 1995; MacDuffie, 1995; Guthrie 2001) considerable conceptual and empirical ambiguity regarding the precise nature of this relationship remains (Arthur & Boyles, 2007). This gap, often referred to as the “black box” of HRM (e.g. Guest, 1997), warrants attention to the processes through which systems of HRM influence performance (Becker & Gerhart, 1996).

While HRM research to date is highly driven by this pertinent question, the field remains fragmented in terms of explanatory frameworks and levels of analysis. At the macro level, HRM scholars have typically explored the performance theme by studying an ‘ideal’ set of high performance work practices (e.g. Becker & Huselid, 1998; Delaney & Huselid, 1996; Huselid, 1995), configurations or horizontal alignment of HRM practices (Delery & Doty, 1996; Wright & McMahan, 1992), or the fit between the HRM practices and the organizational strategy (e.g. Schuler & Jackson, 1987a, 1987b; Wright & Snell, 1998). These
Macro views converge in that they seek to depict the relationship between multiple HRM practices and unit level performance using higher level constructs of HRM systems. At the other end of the scale, micro-level HRM scholars have focused extensively on the effect of individual HRM practices on the attitudes and behaviors of individuals (Wright & Boswell, 2002). Until recently however, there has been little theoretical and empirical insight available at the intersection of the two levels of analysis (Wright & Boswell, 2002). As a result of this divide, our current knowledge of the assumed causal path from higher-level HRM systems, through individual-level employee reactions, to higher-level organizational outcomes is sparse (Arthur & Boyles, 2007; Ostroff & Bowen, 2000; Paauwe, 2009; Wright & Nishii, 2007). Therefore, the field of HRM calls for more research on the processes through which individual responses to HRM practices can become linked to organizational outcomes (Nishii, Lepak, & Schneider, 2008; Sanders, Dorenbosch, & de Reuver, 2008; Wright & Nishii, 2007).

To address this question I apply a signaling perspective of HRM (e.g. Bowen & Ostroff, 2004; Guzzo & Noonan, 1994) to illustrate how HRM systems can cause idiosyncratic psychological contract obligations to emerge as a shared work-group climate. I then proceed to theoretically depict how both the average level and within work-group variance in employee-perceived obligations can influence the level of organizational human capital. In doing so, I address calls for research that explores the processes through which employees come to share perceptions of HRM practices as well as the differential effects of weakly and strongly shared perceptions on organizational outcomes (Nishii et al., 2008:531). Against this background, I now proceed to review previous HRM research so as to position the psychological contract as a central lens through which to capture cross level reactions to HRM (cf. Wright & Nishii, 2007).
THEORETICAL BACKGROUND

In this section I review previous HRM theory and research on the processes through which HRM practices impact outcomes at different levels. Research attempting to address how HRM practices become linked to individual, work-group and organizational outcomes is faced with an abundance of theories, models and approaches. In a critical review of the field, Fleetwood and Hesketh (2008) list no less than 49 different approaches to the HRM-performance linkage. Because the HRM literatures are extensive and these ‘black-box’ explanatory schemes diverse, the following review is necessarily selective and readers are directed to recent HRM reviews for a more comprehensive overview (e.g. Boxall & Mackey, 2009; Paauwe, 2009). The present review serves the purpose of contextualizing the focus on employee experiences of HRM within a psychological contract perspective.

Responding to earlier recommendations for HRM research (e.g. Wright & Gardner, 2003), I focus the discussion on multiple levels, but concentrate the propositions on (1) how perceptions of HRM are constituted at the individual level and (2) how the context of a work group and the characteristics of an HRM system influence the within group variance or sharedness in perceptions about the HRM system. In line with Johns (2006: 388) I maintain that “if we do not understand situations, we will not understand person-situation interactions” and thereby limit the potential of our research to “explain how individual or team activity gets translated into larger organizational outcomes”. In terms of HRM, an employee’s interpretation of and reaction to a practice is likely to depend on the context in which HRM ‘happens’, i.e. the situation in which HRM practices are perceived. For example, an employee’s perception of HRM is likely to be influenced by the perceived saliency of the practices within a work group, how organizational practices are implemented, applied and communicated within a work group, as well as how colleagues within a work group respond to the same practices. Furthermore, the effect of different reactions to HRM practices on
individual and work-group level outcomes may be contingent on aspects such as the following: whether few or many employees within a work group deviate from the mean (within work-group variance), and whether the work group as a whole deviates from the mean of the organization (between work-group variance) (Harrison & Klein, 2007). The interest of this paper lies in how HRM related situational factors at the work-group level influence the degree of sharedness or variance in perceptions among employees within a work group. Hence, I focus the discussion on the contextual HRM influences that shape individual reactions to HRM systems emerging as shared meanings at the work-group level. To frame this focus, I will next briefly describe previous HRM research at different levels of analysis.

HRM: LEVELS OF ANALYSIS

Organizational level: HRM Structures. Within organizational-level HRM research the notions of high performance, high-commitment, high-involvement, and human capital enhancing HRM systems have received considerable attention (e.g. Arthur, 1994; Huselid, 1995; Guthrie 2001, Youndt, Snell, Dean, & Lepak, 1996). These universalistic perspectives assume that organizations can implement a set of best practices to increase organizational performance (Lepak & Snell, 1999, 2002). While these strands of research have initiated and contributed to an important debate about the link between HRM and organization level performance, significant challenges remain (see Boxall & Mackey, 2009 for a review). In particular, these approaches do not offer explanations as to why and how a particular setup of HRM practices in a system is superior to others and thereby largely ignore the processes through which these practices become effective (Paauwe, 2009). Also, a universal or best practice approach does not specify the conditions under which a set of practices is expected to be effective for a given objective (Boxall & Mackey, 2009; Purcell, 1999). As pointed out by Lepak et al. (2006), the HRM field is characterized by a lack of consensus regarding both the content and the objective of HRM systems. Typically the selection of practices is motivated
by exploratory factor analyzes grouping individual practices based on their assumed effect on organizational human capital (e.g. Snell & Dean 1992; Wright, Dunford, & Snell, 2001), which corresponds to the aggregated sum of employees’ knowledge, skills and abilities (KSAs) (Delery & Shaw, 2001; Mathieu & Chen, 2010). This approach corresponds to the commonly used AMO theory (Appelbaum, Bailey, & Kalleberg, 2000) that positions employee abilities, motivation and opportunities as central mediating variables between HRM systems and organizational outcomes. While these contributions are laudable and the framework intuitively compelling, research showing how HRM systems influence the overall level of such employee features in an organization is scarce (Takeuchi, Chen, & Lepak, 2009).

Within an AMO perspective, the setup of HRM practices can be argued to be driven by the strategic goals of the organization (Bowen & Ostroff, 2004). When the HRM practices support collective employee performance against a strategic objective, organizational performance will emerge as the result of collective mutually supportive behaviors. At the organizational level the objective of an HRM system is, in this view, to enable understanding of organizational objectives and increase employee abilities, motivation and opportunities to pursue them. Therefore, HRM practices such as recruitment and selection, training and development, performance appraisals, and compensation should enable the organization to recruit, develop, motivate and empower employees to fulfill the strategic objectives. Simplistically put, HRM systems ‘should’ be structured to acquire human capital with the requisite abilities and to some extent motivation from the external labor market and further develop the acquired human capital pool through training practices, motivate with incentive compensation and empower through adequate job-design.

This structural view provides a basic framework for thinking about HRM at the organization level. Simultaneously however, it implicitly assumes that all employees within a
group will respond to HRM practices in the same way. Therefore, by assuming homogeneity in attitudinal and behavioral reactions to HRM (cf. Felin & Hesterly, 2007) this perspective does not address the question of how or whether individual employees perceive and react to HRM practices differently and how this variance may influence the linkage between HRM and organizational outcomes. For example, within-organization variance in individual employee attitudes towards development of skills that enhance their value to their employers or proactively taking initiatives to apply these skills for their employer is likely to affect how key HRM mediators i.e. ability, motivation and opportunity emerge as human capital at the organizational level (cf. Mathieu & Chen, 2010). Because most HRM research focuses on the organizational level however, employee responses in terms of attitudes and behaviors are more often implied than actually being the focus of analysis. As a result, the question of (1) whether desired employee reactions are realized and (2) whether employees perceive and react to HRM practices in different ways remains open (Nishii et al., 2008).

Individual level: Idiosyncratic perceptions. The question of how HRM practices are perceived by employees and how such perceptions relate to organizational outcomes requires HRM research capturing responses to entire HRM systems at the individual level of analysis and bridging these perceptions to central HRM outcomes, such as human capital, at higher levels of analysis (Boxall & Macky, 2009; Nishii et al., 2008; Wright & Nishii, 2007). However, a multilevel approach to studying perceptions of and reactions to HRM systems will inevitably need to deal with the concept of variance at different levels of analysis (Wright & Nishii, 2007). Variance in employee attitudes, conceptualized as separation from the mean within an organization (Harrison & Klein, 2007), results not only from ‘objectively’ differing HRM practices for different employees within an organization but also from idiosyncratic interpretations of HRM practices and their implications (Liao, Toya, Lepak, & Hong, 2009; Wright, Gardner, Moynihan, Park, Gerhart, Delery, 2001). Recent research indicates that
perceptions of HRM practices often differ between employers and employees as well as within and between groups of employees because implemented practices are idiosyncratically perceived and interpreted (Liao et al., 2009; Wright & Nishii, 2007). Given that perceptions of organizational practices precede attitudinal and behavioral reactions (Guest, 2004), this implies that HRM outcomes differ at different levels of analysis even if the actual setup of HRM practices would be held constant (Wright & Nishii, 2007).

The central contention of this paper is that a psychological contract framework can be usefully applied to capture attitudinal reactions to HRM practices, and that these reactions centrally influence the extent to which employees direct their behaviors towards organizational outcomes (Guest, 2004). For this purpose, the view of HRM as signals (e.g. Bowen & Ostroff, 2004; Guzzo & Noonan, 1994) serves as a useful starting point. HRM practices continuously send signals about both routine and uncustomary events such as recruitment and promotion of personnel, selection of participants to training programs, delivery of feedback and distribution of compensation (Guzzo & Noonan, 1994). All these events influence employees’ conception of the principles that guide behaviors desired by the organization. Centrally, employees’ perceptions of these principles or terms are construed by receiving explicit and implicit cues about the kind of behaviors or achievements that are expected and rewarded within the work group (Bowen & Ostroff, 2004; Guest, 2004; Rousseau & Greller, 1994).

According to psychological contract theory, these terms of exchange are what constitutes a psychological contract (Rousseau, 1995). In essence, a psychological contract therefore consists of perceived organizational inducements and employee felt obligations offered in return (Conway & Briner, 2005). In this vein, employee psychological contracts as implicit, dynamic and subjective perceptions of the employment deal can be used as a framework to predict employee obligations towards the organization e.g. ‘… whether to join,
how to expend effort, what to learn, how long to stay and how to treat other people’’
(Rousseau & Greller, 1994: 385). For HRM research, employees’ psychological contract
obligations form a central lens through which to capture how HRM systems can engender
positive attitudes towards desired behaviors such as developing skills, exerting effort and
taking initiatives to fulfill organizational objectives. As a consequence, how HRM practices
can help construe the psychological contract by signaling desired behaviors and resulting
rewards is of particular interest to this paper. Importantly however, as opposed to previous
research focusing on variance in psychological contracts between individuals (e.g. Coyle-
Shapiro & Neuman, 2004), the present paper concentrates on the circumstances under which
psychological contracts can become shared in work-groups (Johns, 2006).

**Work-group level: Contextual influences.** The linkage between perceived HRM
investments or inducements and employee obligations has been established in previous
research at the individual level of analysis (e.g. Rousseau, 1994). In contrast to most HRM
research however, employee attitudes or perceptions have within the psychological contract
framework been viewed as highly idiosyncratic or subjective. Therefore, it is not well known
to what extent employees differ in or come to share psychological contracts. It is however,
likely that a range of individual characteristics as well as work-group influences can produce
both heterogeneity and homogeneity in psychological contract perceptions (Ho, 2005). In
particular, the context in which employees construct their psychological contracts is likely to
significantly influence the sharedness or variance in contract perceptions.

As pointed out by Johns (2006), an explicit feature of contexts is precisely that they
constrain the range of an observed variable. Building on the same line of reasoning and the
notion of situational strength (e.g. Mischel, 1973) Bowen and Ostroff (2004) argued that the
HRM system can form a strong situation that restricts variance by reducing the potential
deviation of employee responses within a work group. In general, they argue, employees
within a work group may perceive organizational signals and interpret their implications in
different ways (Bowen & Ostroff, 2004). A strong HRM situation however, is theorized to
send unambiguous signals that create more salient psychological situations (e.g. Mischel,
1973) and trigger more systematic information processing (Guzzo & Noonan, 1994), leading
employees to perceive and interpret the situation in a uniform way. Hence, the core message
of the HRM strength theorization is that under a strong HRM system, employees can
collectively construct stable judgments about organizational inducements and the desired
behaviors to attain those inducements. Therefore, the potential of a system of HRM practices
to influence employee psychological contracts depends on the strength of the situation it
creates. Viewed as a strong situation, a strong HRM system triggers systematic processing of
HRM signals resulting in stable interpretations that are shared within a work group (Eagley &
Chaiken, 1993; Guzzo & Noonan, 1994).

Defined as ‘implicit or explicit cues provided by external entities regarding the
desirability of potential behaviors’, the strength of a situation is assumed to reduce variance
in behaviors by intensifying the psychological pressure on employees to engage in particular
behaviors (Meyer, Dalal, & Hermida, 2010: 122). In other words, a psychological situation is
strong to the extent that it induces uniform perceptions of appropriate behaviors and provides
incentives to fulfill those behaviors (Mischel, 1973). In Meyer, Dalal and Hermida’s (2010)
recent framework, features of situational strength include clarity, consistency, constraints and
consequences. Clarity refers to the extent cues regarding behavioral requirements are
available and easy to understand; consistency is the extent to which these cues are mutually
compatible; constraints refer to the limitation of an individual’s freedom of action; and
consequences imply that behaviors are coupled with positive and/or negative implications.
Similarly, Bowen & Ostroff (2004) illustrate how features of an HRM system determine the
signaling strength of HRM, i.e. the capacity to signal salient cues that result in stable
judgments about behavior-reward relationships. These process features of *HRM strength* are distinctiveness, consistency and consensus about behavior-reward relationships (Bowen & Ostroff, 2004). These two models are to some degree analogous in that they share clarity/distinctiveness and consistency of situational cues. Also, constraints and consequences are implied in Bowen & Ostroff’s (2004) model as it explicitly deals with the promotion of behavior-reward relationships, where an instrumental link between behaviors and their implications is assumed to reduce employee action incompatible with the organization’s ‘intent’. However, consensus is an additional feature of HRM strength as it reflects the collective assessment of HRM system fairness coupled with agreement on the purpose of HRM practices. Hence, the definition of HRM strength contains a dimension of collective judgment central to the socially constructed saliency of cues signaled by HRM practices.

Next, I present a conceptual framework on the influence of HRM practices and HRM strength on the formation of work-group level psychological contract obligations.

**HRM SYSTEM EFFECTS**

In the framework I focus on the HRM system as an antecedent of the psychological contract. I focus the discussion on employee-perceived obligations as these are particularly proximal to subsequent actions. In line with Rousseau and Greller (1994:386), I define employee obligations as ‘*the actions employees believe are expected of them*’ by their employer. In developing the framework, I focus on the work-group level of analysis and illustrate how different aspects of the HRM system influence (1) the level of employee-perceived obligations within a work group, and (2) the within work-group variance of these perceptions. A key argument is that central elements of individual-level employee obligations become shared through collective experiences of organizational practices as well as collective sensemaking of these experiences and hence emerge as meaningful constructs at the work-group level of analysis. I conceptualize collective employee obligations at the work-group
level as an obligations climate. Finally, I discuss how both aspects of an obligations climate, i.e. average level and within-group variance, interact to influence the level of work-group human capital. I present an overview of the theoretical framework in Figure 1 before elaborating on the proposed processes and relationships in more detail below.

While recognizing that the psychological contract is formed by an array of organizational signals and processes (Rousseau, 1995) I limit the discussion to the HRM system. HRM practices are conceptualized as inducements applied to endow the employee-organization relationship (see e.g. Tsui et al., 1997; Wang et al., 2003). As highlighted by Shaw, Dineen, Fang and Vellella (2009), HRM practices as inducements “manifest not only the rules or norms of exchange from an employer’s point of view, but also specify the resources of exchange between employers and employees” i.e. the nature of organizational inducements and employee obligations.

WORK-GROUP OBLIGATIONS: CLIMATE LEVEL
Among early psychological contract scholars Levinson, Price, Munden and Solley (1962) and Argyris (1960) described the employer-employee relationship as an interdependent exchange relationship where each party commits to fulfill the other’s needs. Since Rousseau’s (1989) seminal reconceptualization the psychological contract has been studied in terms of organizational inducements and employee obligations based on implicit and explicit promises communicated through repeated patterns of behavior (Conway & Briner, 2005). The reciprocal nature of the psychological contract implies that organizational inducements and employee obligations are interlinked such that contributions are made to receive something in return (Conway & Briner, 2005). Hence, organizational inducements are positively related to employee obligations (e.g. Rousseau, 1990; Shore & Barksdale, 1998). An HRM system can
be conceived as a range of HRM inducements that if valued are returned to the organization expressed as employee obligations (Rousseau, 1995). In the psychological contracts literature *inducements* usually refer to items such as high pay, training, support, development, job security and career advancement. These HRM practices activate the norm of reciprocity when employees perceive that the employer has invested in the exchange relationship and feel obliged to reciprocate with greater effort and commitment (Cole, Schaninger, & Harris, 2002; Pfeffer, 2007). In line with this logic, Guest and Conway (2002) found that in organizations with extensive HRM practices, employees perceive more organizational inducements. However, extensive HRM practices do not necessarily refer to a ‘simple number’ of HRM practices but to the level of inducements that are offered through investments in HRM (see e.g. Youndt, Subramaniam, & Snell, 2004). Similarly, employee obligations do not refer to an absolute number of behavioral commitments but rather to the scope of engagement towards the objectives of the exchange relationship (Cole et al., 2002).

To summarize previous research: HRM system practices are related to individual-level psychological contracts such that the HRM inducements foster employees’ perceived obligations towards the organization and its objectives. In line with this research, Bowen and Ostroff (2004) argued that the main task of the HRM system is to maintain and communicate instrumental behavior-reward relationships in line with organizational objectives. The psychological contract, by definition, represents employee perceptions of promised rewards (inducements) and behaviors (obligations) exerted in return. However, with regards to the linkage between HRM and performance, not only individual but perhaps even more importantly collective perceptions are of interest. The assertion of this paper is that psychological contracts as perceptions at the individual level become, at least partly, shared at the work-group level because of various collectively shared organizational experiences in the work-group context (such as HRM and other organizational signals), as well as collective
sensemaking of those experiences (Ho, 2005). This is not to dispute the idiosyncratic nature of the psychological contract as depicted in research thus far (e.g. Rousseau, 1995), but is to argue that differing HRM systems between work-groups can contribute to the emergence of psychological contract subcultures or –climates (cf. Rousseau & Greller, 1994).

HRM systems have been argued to facilitate the emergence of organizational climates from individual level psychological climates, influencing collective attitudes and behaviors at different levels of analysis (Bowen & Ostroff, 2004; Lepak et al., 2006; Ostroff & Bowen, 2000). The central argument is that shared climate perceptions will foster collective attitudes and behaviors that bridge organizational objectives with outcomes (Ostroff, & Bowen, 2000). We may illustrate this as follows: as organizations are generally aligned around some form of strategic objectives, organizational practices, at least to some extent, support, facilitate or enable the coordination of actions towards these objectives. With regards to HRM, investments in practices are intended to support work-group performance against strategic objectives in direct or indirect ways (Delery & Doty, 1996). For example, recruitment and selection practices are likely intended to make sure that the organization has a sufficient pool of individuals with the necessary knowledge, skills and abilities to achieve organizational objectives. Training and development practices are applied to further refine and develop this organizational knowledge base. Compensation practices further direct attention and incentivize individuals to work towards defined objectives. In this manner, most HRM practices will display some level of vertical fit i.e. alignment with organizational strategy (Wright & Snell, 1998). Furthermore, a particular work group is likely to serve an even more specific strategic purpose in the organization, with HRM practices aligned to support this purpose. As a consequence it is plausible that HRM systems contribute to forming collectively shared employee experiences in that (1) employees will be subject to similar practices and (2) these practices will share common elements pertaining to the strategic
priorities of the work group. Therefore, I suggest that the relationship between HRM inducements and employee obligations can be aggregated to the work-group level. Against this background I put forth the following proposition:

Proposition 1: the individual relationship between HRM inducements and employee obligations will generalize to the work-group level of analysis such that the collectively perceived level of HRM inducements will be positively related to the collective level of employee obligations.

WORK-GROUP OBLIGATIONS: CLIMATE VARIANCE

Processes of aggregation may differ by studied phenomena, and therefore, specific theoretical judgments as to why the focal phenomena can emerge at the group level must be made (Klein & Kozlowski, 2000). In order for climates to become effective within a specific organizational context they should be aligned around a particular objective or strategic focus of an organization (Lepak et al., 2006). With regards to HRM, a climate that supports desired HRM outcomes such as the development of employee ability, motivation and opportunities to exert effort and apply knowledge in line with an organization’s strategic objectives is assumedly desirable. I suggest that an obligations climate aggregated from individual level employee obligations to develop skills, exert effort and take initiatives towards organizational objectives is a central outcome of an HRM system and that the within-group variance of this climate will influence a work group’s capacity to impact on organizational objectives.

Recent studies have found a relationship between work-group level HRM systems and perceptions of social exchange indicating that individual-level exchange perceptions can be shared and thus aggregated to higher levels of analysis (Nishii et al., 2008, Takeuchi, Lepak, Wang, & Takeuchi, 2007). Of course, within-group variance on employee attitudes including employee obligations will vary depending on the nature and characteristics of the work group and the individuals that make up that group. For example, similarity in roles, task interdependence as well as the physical and cultural proximity of employees are likely to foster similar climate perceptions whereas diversity in e.g. roles, tasks, and demographics is
likely to increase variance in felt obligations. Overall, it is unlikely that all employees within a work group by default construct their psychological contracts in the same way. Employees may naturally differ in the processes through which they construct their employment relationship (Rousseau, Ho, & Greenberg, 2006). Individual attributes such as equity sensitivity (tolerance for inequity), exchange ideology (tendency to reciprocate treatment) and creditor ideology (tendency to return greater or smaller favors than received) (Coyle-Shapiro & Neuman, 2004), may lead individuals to respond differently to the same inducements.

Simultaneously however, a strong work-group context is expected to restrict diversity in responses to inducements. As discussed previously, within the context of a work-group, it is unlikely that employees would construct completely idiosyncratic obligations independent of contextual influences. On the contrary, it is likely that collective perceptions about desired behaviors and associated organizational rewards emerge around the objectives of a work group when employees are subject to the same HRM practices. As a consequence, it is reasonable to assume that employee attitudes towards work do not emerge independently of the social information available in the local context. For example, as employees receive, interpret and evaluate signals about HRM practices they are likely to calibrate their evaluations with a significant group of social referents (Ho, 2005; Salancik & Pfeffer, 1977). According to theories of social information processing, employees’ attitudes in the work context are powerfully influenced by the saliency of available information as well as the evaluations of significant others and hence ‘multiple social influences on attitudes are more consequential for predicting attitudes at work than are individual needs or other characteristics’ (Salancik & Pfeffer, 1977: 248). Where strong social perceptions emerge, perceptions that deviate from the norm are more likely to be subject to revision according to more salient socially accepted patterns (Hackman, 1992; Ho, 2005). At the employee level,
this would imply that parts of the psychological contract will be construed within the context of and in interaction with the work group in which an employee works (Cole et al., 2002).

In summary, simultaneous processes produce heterogeneity and homogeneity in employee obligations at the work-group level (Ho, 2005). The relative salience of these processes is likely to influence the variance in employee obligations as responses to HRM inducements. As shared experiences with HRM practices and the collective sense-making of those experiences is a relevant driver of homogeneity, the extent to which members of a work-group are *de facto* subject to the same practices will influence the within-group variance of work-group obligations. For example, inter-individual cohesiveness of HRM inducements is likely to reduce the variance in work-group employee obligations whereas individualized HRM inducements (e.g. Rousseau et al., 2006) are likely to increase dispersion in perceptions. Therefore, I put forth the following proposition:

**Proposition 2**: *inter-individual cohesiveness of HRM inducements within a work-group will be negatively related to within-group variance in work-group obligations.*

According to Bowen and Ostroff (2004), the potential of the HRM system to reduce variance in employee perceptions and attitudes can be evaluated in terms of a variety of features, i.e. distinctiveness, consistency and consensus. Together these features are theorized to constitute a strong HRM situation in which the HRM signals and their signals, in terms of expected behaviors and resulting rewards, are uniformly interpreted. A strong HRM system is thus one that signals unambiguous behavior-reward relationships. In other words, when expected behaviors and resulting rewards are visibly and consistently signaled by the HRM practices in a system and there is consensus among employees and HRM decision makers on the viability of the HRM system (Bowen & Ostroff, 2004), it is more likely that (1) the understanding of employee obligations corresponds to the intended purpose of the HRM system and (2) that the understanding is shared among employees within a work group.
Therefore, I suggest that the strength of the HRM system process increases the restricting effect of the work-group context and increases the salience of uniform sensemaking whereby a work-group obligations climate can emerge from individual level employee obligations (cf. Bowen & Ostroff, 2004; Schneider, 2000).

**Proposition 3:** the signaling strength of the HRM system will be negatively associated with the within-group variance of work-group obligations.

HRM system strength implicitly assumes that all HRM practices share the common purpose of supporting strategic objectives. While this notion of vertical fit highlights the importance of aligning the HRM system with strategic objectives, the horizontal fit (Wright & McMahan, 1992) between HRM practices in a system is potentially even more central with regards to the emergence of a shared work-group obligations climate. When the HRM system is horizontally aligned around particular expected behaviors and resulting rewards, the psychological situation emerging around this ‘desirable state’ is potentially stronger than when different HRM practices signal different behavior-reward relationships. Therefore, it is likely that horizontally aligned HRM systems will have stronger signaling effects when the signals regarding the exchange relationship share a common message, which is to the extent possible, unambiguously communicated by all HRM practices in the system. As a result the HRM system would communicate consistent messages and reduce within work-group variance in subsequent employee obligations.

**Proposition 4:** the within work-group variance of employee obligations will be lower when all HRM inducements are internally aligned; that is, all HRM practices associate inducements with similar desired behaviors.

**WORK-GROUP OUTCOMES**

At the individual level, psychological contracts predict a range of attitudinal and behavioral work outcomes through a process of reciprocation (see Conway & Briner, 2005; Gouldner, 1960). In line with goal-setting (e.g. Locke & Latham, 1979) and expectancy theories
Vroom, 1964), the psychological contract is assumed to function as a framework to structure goals and align objective oriented behaviors (Conway & Briner, 2005). In this vein, the psychological contract is likely to be a central mediator between HRM practices and collective outcomes (Guest, 1998). In line with this argument, recent studies have found group level perceptions of organizational inducements positively associated with performance measures such as labor productivity (e.g. Subramony, Krause, Norton, & Burns, 2008). Another study showed that perceived inducements aimed at motivating and developing capabilities stimulate strategically aligned behaviors among employees (van Riel, Berens, & Dijkstra, 2009). Employee obligations is a particularly useful concept for assessing what employees believe are expected of them and hence what kind of actions they are likely to pursue (Rousseau & Greller, 1994). With regards to HRM outcomes, obligations to develop skills, exert effort and take initiatives to realize the strategic objectives of a work group are likely to predict employee ability, motivation and opportunity at the individual level that become realized as human capital at the work-group level (cf. Snell & Dean, 1992). Recent studies have found that organizations with more comprehensive HRM investments have higher levels of human capital (Takeuchi et al., 2007; Youndt et al., 2004). I argue that this linkage will partially be mediated through collective employee felt obligations to engage in desired behaviors, i.e. develop skills, exert effort and take initiatives.

**Proposition 5: the level of work-group obligations partially mediates the effect of the perceived level of HRM inducements on the level of human capital within a work group.**

In the HRM literature, practices influence outcomes at different levels of analysis through both individual and collective processes (Boxall & Macky, 2009). I suggest that the work-group obligations climate has group level effects beyond the sum of individual level employee obligations. Specifically, I argue that beyond the nature and extent of obligations, the within group variance of employee obligations is an important variable in its own right (Henderson,
The methodological approach using within group variance as an independent correlate is known as a dispersion model (Brown & Kozlowski, 1999; Chan, 1998). This approach assumes that individual level constructs emerge as group level phenomena through social interaction processes (Gonzalez-Roma et al., 2002). While relatively scarce, (Klein, Conn, Smith, & Sorra, 2001) empirical research indicates that variance in different work-group members’ climate perceptions have significant interaction effects on group level outcomes (e.g. Gonzalez-Roma et al., 2002; Klein et al., 2001; Schneider et al., 2002). In line with these findings, I argue that the within-group variance in employee obligations moderates the effect of the level of employee obligations on human capital through two similar but distinct processes: firstly, shared employee obligations enhance synergies by reducing variance in employee behaviors and goal-orientations within a work group (cf. Schneider et al., 2002). Conversely, when employee obligations are dispersed, work-group members may work towards mutually incompatible objectives or simply spend more time negotiating priorities and coordinating efforts. Secondly, diverse employee obligations reflect ambiguity in the desired state with regards to the behaviors that are rewarded within a work group. Ambiguity in behavior-reward relationships in turn, is likely to hinder the development of the specific human capital necessary to attain strategic work-group objectives.

Proposition 6: the within-group variance in work-group obligations will moderate the effect of the level of work-group obligations on the level of human capital within a work group.

DISCUSSION

I have proposed that a work-group obligations climate aggregated from individual level employee obligations mediates the effect of HRM inducements on work-group level outcomes. Hence, I maintain that the effects of HRM practices centrally manifest themselves at the work-group level (e.g. Takeuchi et al., 2009) and echo previous calls for research
focusing on employee experiences of HRM in the space between management practices and organizational outcomes (Boxall & Macky, 2009). In so doing, I address previous calls for multilevel research in HRM to provide avenues for future research (e.g. Boselie et al. 2005; Bowen & Ostroff, 2004; Wright & Boswell, 2002; Wright & Nishii, 2007). I have examined the process through which HRM systems impact on performance by focusing on employee perceptions of HRM signals and presented a framework specifying the effect of HRM on the social construction of employee-perceived obligations within work groups. I have built on the idea that there are cross-level processes through which HRM systems influence individual level psychological contract obligations, which can become conceptually meaningful at the group level of analysis (Nishii et al., 2008). In contrast to recent multilevel theorizations of HRM (e.g. Bowen & Ostroff, 2004, Wright & Nishii, 2007) which have convincingly illustrated why HRM practices are perceived differently in different work groups at different organizational levels, the focus of this paper has been on the collective construction of employee obligations within work groups.

The theoretical contributions of this paper focus on the processes through which HRM practices become linked to outcomes at different levels of analysis (Nishii et al. 2008; Wright & Nishii, 2007). First, I have applied the concept of the psychological contract to describe attitudinal and behavioral responses to HRM systems. Thus, I have focused on the role of HRM signals in constructing employee-perceived obligations. Second, I have proposed how the psychological contract can be aggregated to the group level as a shared work-group obligations climate. Third, I have illustrated how the within-group variance in work-group obligations influence collective outcomes at the work-group level, thus shedding light on the processes through which individual level psychological contracts ‘emerge in conceptually meaningful ways at higher levels of analysis’ (Nishii et al., 2008:527) Hence, I contribute to
previous research on how group level perceptions serve as a linking mechanism between HRM practices and outcomes (e.g. Bowen & Ostroff, 2004; Takeuchi et al., 2009).

The application of psychological contract theory in HRM research is not novel (see e.g. special issue in Human Resource Management, 1994, Vol. 33; Guest, 1998; Guest & Conway, 2002; Guest, 2004; Takeuchi et al., 2007). However, as the psychological contract has in previous literature been regarded as a purely individual level construct, the link between different features of the HRM system and work-group level obligations has not been depicted using a psychological contract framework. The concept of the psychological contract is well suited to bridge the gap between micro and macro HRM research as it is presently the main literature that explores individual reactions to multiple or systems of HRM practices (Wright & Nishii, 2007).

**IMPLICATIONS**
A few boundary conditions are likely to be central for the proposed framework. It is possible that agreement, in some circumstances, may be detrimental for a work group (Meade & Eby, 2007). For example, agreement on negative attitudes such as low or limited obligations is plausibly more harmful for the group than more dispersed attitudes. Furthermore, the effects of agreement are likely to be different in different contexts. In work groups where tasks are highly interdependent (e.g. Kiggandu, 1981), agreement can be expected to affect work-group outcomes positively whereas this relationship may be insignificant or even negative if tasks are independent or require autonomous work. As a consequence, judgments about HRM system content and process characteristics need to be made in relation to a particular context or situation.

In Figure 2, I have illustrated how the average level and within work-group variance of employee obligations interact to form different exchange situations. The ideal situation will depend on the organization’s intended HRM objectives for a specific work group as well
as the characteristics of the work group in question (Lepak & Snell, 1999, 2002; Lepak, Taylor, Tekleab, & Marrone; 2007). For example, a high-involvement HRM strategy strives to increase the involvement of a core group of employees through initiatives aimed at empowering employees (e.g. Lawler, 1986). Simply put, the degree of desired involvement is signaled with HRM inducements, which employees respond to by adjusting their obligations and aligning behavior (Boxall & Macky, 2009). The comprehensiveness of HRM investments, however, will differ between organizations and further between work groups within an organization (Lepak Snell, 1999, 2002). Organizations may choose to invest more in the employment relationship with core work groups whereas other work groups in the periphery of the organizational value creation process may be covered by more limited HRM practices. Judgments concerning the appropriate degree of HRM inducements from the organizational perspective will be based on whether the perceived benefits of these investments will outweigh the costs for the organization (Boxall & Macky, 2009). In some work groups, the desired level of obligations or involvement may be lower than for others and therefore the HRM investments made for the work group in question will be more limited (see e.g. Wang et al., 2003). However, in the absence of a shared work-group obligations climate, employees will work towards their individual perception of their work priorities which may or may not match the organizational intent. The organizational attainment of strategic objectives is likely to be influenced by the extent to which employees consistently adjust their obligations with the strategic objectives of the work group.

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LIMITATIONS

The limitations of this paper are as follows: first, I have not discussed the possibility that individual practices may vary in their relative influence on the psychological contract. For
example, it is likely that practices with more tangible consequences for employees, such as compensation and performance management, receive greater attention (cf. Takeuchi et al., 2009). Therefore, some practices may influence employee obligations more than others.

Second, I have proposed that HRM inducements, cohesiveness of inducements, HRM strength and the internal alignment of HRM inducements have independent effects on work-group obligations. From theory in HRM however, it is far from clear to what extent these concepts overlap. For example, it is possible that the strength of the HRM system is dependent on the level, inter-individual cohesion as well as horizontal alignment of HRM inducements. Likewise, it is possible that HRM strength may have direct influences on the level of employee obligations. To what extent these concepts overlap or interact remains a question for future research. Third, I have limited the discussion to HRM as a signaling system. In practice however, it may be difficult to distinguish between experiences related to HRM practices and other organizational activities. Organizational activities, including HRM, are intertwined and perceived in the locally embedded context (Purcell, 1999). Organizational level variables such as organizational structure and distribution of roles (in particular the questions of who administers and implements HRM practices) as well as individual level variables such as supervisor characteristics, individual pre-employment experiences and differential treatment of employees may result in differential perceptions of HRM signals (Rousseau, 1995; Rousseau et al., 2006). Controlling for some of these issues would be important when empirically testing the propositions presented here. Finally, and importantly, I have focused my analysis on a particular part of the psychological contracts i.e. employee obligations with regards to behaviors desired by the organization. Thereby I have largely ignored the many multifaceted and idiosyncratic elements that psychological contracts may contain especially with regard to interpersonal relationships such as leader-member exchange.
FUTURE RESEARCH

This paper gives directions and ideas for further theoretical and empirical development and provides a basis for research testing the proposed framework. Some of the constructs already exist whereas others require further operationalization. Measures of employee obligations are readily available (see Conway & Briner, 2005 for a review) and the HRM literature contains previous research assessing HRM practices as inducements (e.g. Shaw et al., 2009; Tsui et al., 1997; Wang et al., 2006). The view of HRM as signals however, emphasizes a shared understanding of specific HRM objectives, not only terms in general (see Bowen & Ostroff, 2004). Therefore, it would be advisable to apply measures of psychological contracts that assess qualitatively different forms of obligations. One of the most extensive constructs of obligations is the psychological contract inventory (Rousseau, 2000) validated by Hui, Lee and Rousseau (2004). This measure contains items such as obligations to enhance skills (ability), and exert effort (motivation) that can be usefully adapted to HRM research. Unfortunately, to date there is no validated construct of HRM strength. The validation of such a construct would be highly valuable.

I position this contribution within the mesoparadigm at the intersection of macro and micro levels of analysis to enable simultaneous assessment of the individual, group and organizational level (House, Rousseau, & Thomas-Hunt, 1995). At best, multilevel research is complex, rigorous and able to capture the complexity of organizational life (Klein & Kozlowski, 2000). However, such an approach calls for methodological and theoretical caution in moving between levels of analysis. It is my opinion that this approach can be usefully applied to combine research on HRM and psychological contracts. I have suggested that the within work-group variance of employee obligations can usefully be assessed as a separate variable moderating the effect of employee obligations on group level outcomes. This requires careful consideration of the ideal sample used. Preferably, a sample of
organizational units or teams that show high between and low within group variance would be used.

Lastly, in multilevel research it is important to define the nature of each construct at different levels. Klein and Kozlowski (2000), distinguish between global, shared and configural group properties. Global properties are objective, descriptive characteristics of a group, shared properties are held in common by all individuals in a group and configural properties emerge from individual members’ properties. The operationalization of the framework must first and foremost be driven by the theoretical foundation. The psychological contract is commonly defined as an individual’s subjective perception. Therefore, the natural level of construct operationalization would be the individual and any group properties would be configural.
REFERENCES


Brown, K. G., & Kozlowski, S. W. J. 1999. Dispersion theory: Moving beyond a dichotomous conceptualization of emergent organizational phenomena. Paper presented at the 14th annual meeting of the Society of Industrial and Organizational Psychology, Atlanta, GA.


FIGURE 1
Overview of theoretical framework

FIGURE 2
Exchange Situations

Within group variance of work-group obligations
APPENDIX 2 – ESSAY 2

QUID PRO QUO? EXAMINING TALENT MANAGEMENT THROUGH THE LENS OF PSYCHOLOGICAL CONTRACTS

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PURPOSE
In the present paper we explore the direct and indirect linkages between HRM practices and human capital within a talent management framework. We extend previous research on the direct effects of HRM (e.g. Youndt, Subramaniam, & Snell, 2004) to examine how employee responses to HRM practices mediate the linkage between HRM and human capital (cf. Boxall & Macky, 2009).

APPROACH
We apply psychological contract theory (Rousseau, 1995) as a lens to assess employee perceptions of the extent to which talent qualities are rewarded and the effect of such perceptions on employee-felt obligations to develop skills.

FINDINGS
Our results indicate that HRM practices are positively related to employee-perceived talent inducements and that talent inducements fully mediate the direct relationship between skill-enhancing HRM and human capital. What is more, psychological contract obligations to develop skills partially mediated the relationship between talent inducements and human capital. These results imply that the differential treatment of employees based on criteria constituting talent can have positive effects on employee motivation and felt obligations to develop skills and apply these in service of the organization.
INTRODUCTION

Since McKinsey’s highly influential 1997 study initiated a debate about ‘the war for talent’ (Michaels, Handfield-Jones, & Axelrod, 2001), the term talent management has become firmly manifested in the jargon of company executives, HR (Human Resource) practitioners and consultants alike. At the time of writing a quick search on Google returns over 30 million hits. Despite this surge of interest within the practitioner community, the academic research on what talent management is all about is surprisingly scarce (Lewis & Heckman, 2006). Conceptual and normative frameworks illustrating how it should be done have slowly begun to emerge within the field of Human Resource Management (HRM) (e.g., Boudreau & Ramstad, 2007; Collings & Mellahi, 2009; Tarique & Schuler, 2010). Simultaneously, however, there is a serious lack of empirical contributions. Generally, talent management has been defined as ‘the process through which employers anticipate and meet their needs for human capital’ (Cappelli 2008, p. 1). Having the right people with the right skills in the right jobs is assumed to be a major source of competitive advantage (Barney & Wright, 1998). In the current state of research however, there is a serious lack of consensus about the term talent (i.e. what is to be managed) as well as how its management will influence human capital.

In the present paper we address this research gap and examine the direct and indirect effects of HRM practices on human capital from a talent management perspective. For this purpose, we conceptualize talent management as the explicit differentiation of employees based on the capacity and potential of employees to influence organizational performance (Collings & Mellahi, 2009). We argue that employee responses (cf. Boxall & Macky, 2009) to differentiation in terms of contingent inducements centrally mediate the direct relationship between HRM practices and human capital (Youndt, Subramiam, & Snell 2004). In so doing, we apply psychological contract theory (Rousseau, 1995) as a lens to
assess employee perceptions of the extent to which talent qualities are induced and the effect of such perceptions on employee felt obligations to develop skills.

**THEORY & HYPOTHESES**

Collings and Mellahi (2009, p. 309) discuss talent management in terms of a differentiated HRM structure ‘that acknowledges the differential contributions that specific worker groups can make’. This approach reflects the resource-based view (Barney, 1991) in that individuals possessing organization-specific, valuable, rare and inimitable qualities facilitate the accrual of competitive advantage. We build on Collings and Mellahi’s (2009) definition and conceptualize talent in terms of the specific behaviours and/or qualities the organization defines as essential for the achievement of its current and future goals. Our starting point is the assumption that the rationale for investing in talent management from an organizational viewpoint is the expectation that the HRM practices applied to manage talent will result in increased levels of human capital (Cappelli, 2008; cf. Collings & Mellahi, 2009; Tarique & Schuler, 2010).

Assuming this perspective, we develop a theoretical framework delineating direct and indirect effects of HRM practices on human capital. We conceptualize direct HRM effects in terms of HRM influences on the configuration of skills and abilities in the organization’s human resource pool. Indirect effects we examine in terms of the extent to which talent qualities are induced within the organization as well as the extent to which employees respond positively to such inducements by aligning their felt obligations to develop skills and abilities. We illustrate our theoretical framework in Figure 1 and describe the hypothesized relationships in the following sections.

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INSERT FIGURE 1 ABOUT HERE

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Direct effects of HRM

Strategic HRM (SHRM) offers a natural starting point for research on talent management (Lewis & Heckman, 2006). In general, SHRM concerns the linkages between HRM practices, business strategies and organizational outcomes (e.g., Becker & Gerhart, 1996; Becker & Huselid, 1998). The relationship between HRM practices and organizational performance in particular, has received substantial research attention (see meta-analysis in Combs, Liu, Hall, & Ketchen, 2006). There exists relatively well established theoretical frameworks used to explain this relationship, e.g., the ability-motivation-opportunity and human capital frameworks (see Delaney & Huselid, 1996; Delery & Shaw, 2001; Lepak, Liao, Chung, & Harden, 2006). In line with the general purpose of talent management (Cappelli, 2008), we focus specifically on human capital, conceptualized as the realization of the employee knowledge, skills and abilities required for the achievement of organizational objectives (Snell & Dean, 1992; Wright, Dunford, & Snell, 2001).

Youndt, Subramaniam and Snell (2004), distinguish two central processes through which HRM practices can enhance human capital i.e. make or buy approaches. The latter involve externally-focused HRM practices (cf. compositional HRM in Kaše, Paauwe & Zupan 2009) that shape the set of individuals possessing requisite skills and abilities in an organization’s human resource pool. The former pertain to internally-focused HRM practices (cf. configurational HRM in Kaše et al., 2009) that further develop the skills and abilities of employees, and provide them with opportunities to utilize their skills in service of the organization (e.g. Delaney & Huselid, 1996; Delery & Shaw, 2001; MacDuffie, 1995). Both categories of HRM practices are also likely to exhibit sorting effects through attraction-selection-attrition processes (Rynes, Gerhart, & Parks, 2005; Schneider, Goldstein, & Smith, 1995). These processes are relatively well established and there is general agreement in the HRM literature that HRM practices are directly linked to human capital through their
influence on employee skills and abilities as well as the opportunities of employees to apply these skills (Delery & Shaw, 2001; Lepak et al., 2006).

From an SHRM perspective, and given the overarching objective to accrue higher levels of human capital (Cappelli, 2008), talent management implies a significant emphasis on HRM practices directed at increasing the skills and abilities in the human resource pool. Therefore we hypothesize that:

Hypothesis 1: Skill-enhancing HRM practices will be positively related to human capital.

Indirect effects of HRM
The above hypothesis approaches talent management as little more than ‘a means to highlight the ’strategic” importance of a HR specialty’, namely an emphasis on skill-enhancing HRM directed at recruiting employees possessing qualities considered as talent and further developing such qualities (Lewis & Heckman, 2006, p. 141).

Highlighting the importance of specific talent qualities through HRM however, is likely to have implications for employee attitudes and behaviours more generally. Recently, HRM scholars have argued that employee perceptions of and reactions to HRM practices feature an underutilized lens to study the indirect effects of HRM practices on organizational outcomes such as human capital (Boxall & Macky, 2009, Wright & Nishii, 2007). Many higher-level HRM outcomes are mediated through perceptual processes that influence individual employee attitudes and behaviours (Ostroff & Bowen, 2000). Specifically, attitudinal effects in terms of employee understanding of and motivation to pursue organizational goals offer a parallel explanation as to how HRM practices become linked to organizational outcomes (Lepak et al., 2006). As Gottschalg and Zollo (2007) point out, the potential advantages of organizational knowledge and skills are only realized to the extent that
employees are motivated to behave in line with organizational goals. As a consequence, the potential of HRM practices to increase the human capital of an organization is partly contingent on the extent to which employees respond to HRM practices by adjusting their behaviours and taking initiatives to develop the desired qualities. Such employee responses have previously been examined within psychological contract theory (e.g. Guest & Conway, 2002). The psychological contract framework focuses explicitly on employee perceptions of the employment deal, i.e. the type of inducements that the organization offers and the kind of behaviours that are expected in return (Rousseau, 1995). Therefore, the psychological contract has been put forth as a useful and proximal lens through which to examine indirect effects of HRM (Wright & Nishii, 2007).

**Psychological contracts**

Recent theorizing within HRM emphasizes the role of HRM practices in communicating organizational objectives and motivating desired behaviours (Bowen & Ostroff, 2004; Guzzo & Noonan, 1994). According to this view, HRM practices can influence how employees perceive and react to organizational signals (Guest & Conway, 2002; Guest, 2004). Specifically, HRM practices always, intentionally or intentionally, send signals that employees interpret and make sense of to form an understanding of desired behaviours and related rewards (Guzzo & Noonan, 1994). As a consequence HRM practices have a central role in promoting behaviour-reward relationships (Bowen & Ostroff, 2004) that guide employee perceptions of the kind of qualities, attitudes and behaviours that are desired and rewarded. Within the psychological contracts literature, these dynamics have been studied in terms of employee perceived inducements and employee felt obligations to contribute to the organization (Rousseau, 1995). The psychological contract reflects employee perceptions of the rules of the exchange relationship between the employer and the employee as well as the
resources that are being exchanged. In essence, the psychological contract specifies the nature of organizational inducements as well as the behavioural criteria upon which they are endowed (cf. Shaw, Dineen, Fang, & Vellella, 2009).

With regards to talent management, we posit the psychological contract as a useful lens through which to examine employee perceptions of the extent to which the organization induces talent. Specifically, as employees interpret explicit and implicit cues from the HRM system they construct a belief of the specific qualities and behaviours that constitute talent in the organization. HRM practices provide salient information that employees incorporate in their cognitive framework that guides subsequent behaviours (Guzzo & Noonan, 1994). The more the organization focuses on skill-enhancing HRM, the more employees will come to perceive that such qualities are valued and induced in the organization. To the extent that employees perceive that qualities and behaviours that reflect talent are valued and rewarded, employees will have an incentive to align their behaviour and develop desired qualities. As a result, how employees perceive and react to differential inducement of talent is central for the accrual of human capital.

An explicit example of the proposed process can be found in the area of talent-scouting for college sports teams: Team-agents apply particular practices to find talented athletes that are attracted by the prospect of receiving a college scholarship. Athletes observing how individuals are chosen and granted scholarships interpret and make sense of the sometimes implicit selection criteria and can align their behaviours towards achieving such criteria. In line with goal-setting (e.g., Latham & Locke, 1979) and expectancy (Vroom, 1964) theories, such criteria and related inducements are likely to function as a framework within which to structure goals and align efforts. Based on this argumentation we put forth the following hypothesis.
Hypothesis 2: Talent inducements will mediate the relationship between skill-enhancing HRM practices and human capital.

As argued above, talent inducements are likely to function as a cognitive framework for aligning behaviours in line with organizational goals. However, the proposed relationship assumes that employees de facto align their obligations to contribute to the organization. This assumption is in line with the norm of reciprocity (Gouldner, 1960) in that individuals perceiving that the organization has invested in the employment relationship will feel an obligation to repay the investment (Cole, Schaninger, & Harris, 2006). Specifically, as employees interpret the organization’s commitment to endowing the employment relationship with talented employees, they would in line with the norm of reciprocity be expected to align their obligations towards building skills and applying these skills in service of the organization. Such links between HRM practices, perceived inducements and employee obligations however, have not been explicated on a detailed level of analysis within the psychological contracts literature. This is a major challenge in that talent-management practices, in order to contribute to organizational outcomes, should reinforce the specific behaviours and qualities required by the organization (Wang, Tsui, Zhang, & Ma, 2003).

Employees are likely to differentially perceive, value and react to HRM practices in general (Bowen & Ostroff, 2004, Nishii, Lepak, & Schneider, 2008), and to different forms of inducements in particular. Most psychological contract studies however, have focused on the reciprocation process in general, i.e. the linkages between a general level of inducements and the level of employee obligations (e.g. Guest & Conway, 2002; Rousseau, 1990). The central tenet of talent management is the accrual of human capital (Cappelli, 2008). Therefore, implicitly or explicitly communicated talent inducements should naturally compel employees
to engage in continuous development of their skills and abilities. Therefore we hypothesize that:

**Hypothesis 3:** Employee obligations to develop skills will mediate the relationship between talent inducements and human capital.

**METHODS**

We conducted an exploratory pre-study in order to gain insight into how organizations define and distinguish talent in employees. This study comprised 17 face-to-face interviews with heads of HR in Nordic multinational corporations (MNCs) carried out between September 2008 and April 2009 in connection with a wider research project concerning HRM in MNCs. Given that talent management is a relatively new concept it was our opinion that larger organizations were most likely to have introduced formalized practices and would therefore serve as good references for exploring the different approaches. Due to the relatively small home markets, larger corporations in the Nordic area tend to be multinational. The sample consisted of 10 Finnish, two Swedish and five Norwegian MNCs ranging in size from 2,500 to 60,000 employees. The majority of these organizations used explicit criteria for distinguishing talent. From the interview material we extracted a categorization of talent that we subsequently applied in constructing a measure of talent inducements reflecting employee perceptions of the extent to which their organization provided career and promotion opportunities based on the criteria that constituted talent. The findings from this study, along with the final measure of talent inducements, are reported in the Appendices.

We collected the data for the main study by means of a web survey conducted between November 2009 and January 2010. The survey was sent by e-mail to a sample of managers and professionals among alumni from a Finnish business school as part of a monthly newsletter administered by the school. The e-mail was sent to 2,259 addresses recorded in an
alumni contact database. A reminder was sent in connection with a subsequent newsletter one month later. A total of 126 questionnaires were completed yielding a total response rate of 5.6 per cent. This relatively low rate should be viewed in the light of the practical constraints: the business-school policy regarding the use of contact-information data does not allow direct contact with alumni. It is thus probable that the number of alumni actually receiving and reading the survey invitation in the newsletter were significantly lower than the number of entries in the contact database. Unfortunately however, the actual response rate among alumni receiving the invitation to participate could not be verified.

Low response rates raise concerns for non-response biases that result from significant differences in the demographic profiles of respondents and non-respondents that in turn may influence relationships between variables of interest (Keeter, Miller, Kohut, Groves, & Presser, 2000). To minimize the risk for non-response bias we tested our sample for demographic differences by comparing the means of a range of demographic variables between respondents completing the questionnaire before and after the reminders were sent (see e.g. Curtin, Presser, & Singer, 2000). Independent samples t-tests revealed no significant mean differences ($p > .10$) between early (N=83) and late respondents (N=43) with regards to: age, graduation year, position level, tenure in organization, tenure in position and work experience in other organizations.

The final sample consisted of Swedish-, Finnish- and English-speaking alumni. The language used in the questionnaire was English throughout because members of the target group where deemed to be sufficiently proficient as a result of their educational background. The average tenure of the respondents was 5.1 years in the organization and 3.0 years in their current position. More detailed descriptive statistics are reported in Table 1.

------------------------------------------
INSERT TABLE 1 ABOUT HERE
------------------------------------------
Measurement

We developed the first draft of a questionnaire containing the talent-inducement scale through multiple rounds of iterations, an extensive literature review, and discussion within a six-person research team. We subsequently piloted the questionnaire with two HR managers, who gave feedback on the extent to which the items reflected the employment relationship they promoted with regard to talent within the organization. One item was removed based on this feedback. The final operationalizations of the measures are presented below. All the questions were answered on a seven-point Likert scale and are presented in the Appendices.

*Skill-enhancing HRM practices.* We used four items from Takeuchi, Lepak, Wang and Takeuchi’s (2007) employee-rated high-performance work-systems scale (originally from Lepak & Snell, 2002), reflecting HRM practices enhancing employee skills and abilities. The items reflected HRM practices (selection, job-design and development) emphasizing the overarching objective of increased skills and abilities of the organization’s human capital. Example items include: 1) *selection places priority on potential to learn* and 2) *jobs are designed around individual skills and abilities.*

*Talent inducements.* We constructed a measure of talent inducements based on our findings from the pre-study. The measure contained the dimensions of talent that the interviewed organizations included in their definition of talent, i.e. (1) high performance, (2) high capabilities and skills, (3) proactive initiative taking and (4) active support of organizational strategy, values and leadership behaviours. We asked the respondents to rate the extent to which they perceived that their organization had committed itself to provide career and promotion opportunities based on the above. Although a range of inducements has been assessed in previous research (e.g., Rousseau, 1990), we deemed career and promotion opportunities to be of crucial importance in talent management. Example items include: 1) *To provide highly capable and skilled individuals with career and promotion opportunities* and
2) To provide individuals proactively taking new initiatives with career and promotion opportunities.

This measure builds on and extends previous scales in that we used multiple items to capture a single inducement and explicate the criteria for receiving inducements. Thus far inducements have been measured as a larger number of single items entered into post-hoc exploratory factor analyses in order to distinguish different inducement factors (e.g., transactional and relational inducements; Rousseau, 1990). A weakness in this approach is that the items load differently on different factors in different studies, thus making comparison difficult and the results less robust (Conway & Briner, 2005). We argue that it is necessary to use multiple items for a single inducement in order to increase the robustness.

**Employee obligations to develop skills.** In order to capture employee obligations as responses to perceived inducements we used the ability-motivation-opportunity framework that has been widely acknowledged but sparsely applied within HRM research (Lepak et al., 2006). We focused on ability with a measure of development-oriented obligations asking employees about the extent to which they had committed themselves to exerting a range of behaviours (Rousseau, 2000). Example items include: 1) Seek out developmental opportunities that enhance my value to this employer and 2) Build skills to increase my value to this organization.

**Human capital.** The measure of human capital comprised two items from Subramaniam and Youndt (2005) in which respondents are asked to report the extent to which they agree with the following statements: 1) Our people are widely considered the best in our industry, and 2) Our people are experts in their particular jobs and functions.

**Control variables.** To control for individual characteristics that may influence perceptions of organizational practices we included tenure in the organization in years and age as a 6 point ordinal variable.
**Measurement models.** A measurement model (CFA) including all latent constructs displayed excellent fit \(\chi^2 (58) = 66.0, \text{CFI } = .99, \text{ TLI } = .99 , \text{ RMSEA } = .033, \text{ SRMR } = .044\) indicating good discriminant validity of the measures. All factor indicators were significant \((p < .001)\) with standardized loadings ranging from .52 to .93. Introducing the non-latent control variables in the CFA produced acceptable albeit lower fit statistics \(\chi^2 (76) = 109.8, \text{CFI } = .97, \text{ TLI } = .95, \text{ RMSEA } = .059, \text{ SRMR } = .049\).

The estimated correlations between the latent variables reported in Table 1 show that all correlations in the model are below .61. Hence, the model does not seem to suffer from multicollinearity issues given that Kline (2005) suggests that the first indication of substantial multicollinearity is correlation above .85, and the CFA displayed excellent fit to the data.

We followed the recommendations of Podsakoff et al. (2003) to reduce potential common method variance in the analysis. Firstly, in order to differentiate the psychological context in which the different questions were answered we allocated the measures for the independent and dependent variables in different sections of the questionnaire, appearing as separate web pages. Secondly, we guaranteed anonymity on each section in order to reduce potential social-desirability bias. Thirdly, we tested our data for sources of non-substantive variance due to the cross-sectional design of the study. We applied the CFA marker technique as recommended by Richardson, Simmering and Sturman (2009). The idea is to partial out non-substantive variance by including a theoretically unrelated construct that reflects the most likely source of shared variance. In the present study the most likely source of shared variance stems from respondents evaluating organizational practices, inducements, obligations and human capital consistently positively or negatively due to a general or temporal mood-disposition (cf. effect of positive affectivity in Williams & Anderson, 1994). Therefore we included an unrelated three-item marker using the same scale as all the substantive variables in the model. The items reflected the respondents’ perception of the extent to which the business school had benefited...
their career. These items are listed in the appendices. We then defined paths from a latent common method marker to the three items as well as all other items to partial out shared variance in the final model.

Results

The next step was to assess the hypothesized relationships. We used Mplus statistical analysis with latent variables (Muthén & Muthén, 1998-2007) in order to estimate models based on maximum likelihood estimation with missing data using all the available data (assuming values were missing at random (MAR), Little & Rubin, 2002). The coverage of the covariance matrix displayed valid data entries above 96 per cent. We report two-tailed significance level and standardized results. Figure 2 depicts our hypothesized model along with the significant findings. The full model including the CFA marker and control variables displayed acceptable fit ($\chi^2 (107) = 143.7$, CFI = .96, TLI = .95 , RMSEA = .052., SRMR = .053). The results are discussed in more detail in the following section.

Hypothesis 1 predicted a positive relationship between skill-enhancing HRM practices and human capital. This hypothesis is supported by our analysis ($\beta = .446$, p < .001) when the path from talent inducements (mediator) to human capital is not estimated.

Hypothesis 2 posits that talent inducements will mediate the relationship between skill-enhancing HRM practices and human capital. Our analysis supports this hypothesis as the relationships between skill-enhancing HRM and talent inducements ($\beta = .629$, p < .001) and talent inducements and human capital ($\beta = .261$, p < .05) are both significant whereas the relationship between skill-enhancing HRM and human capital is insignificant ($\beta = .257$, p > .05). The total indirect effect of skill-enhancing HRM on human capital through talent
inducements is also significant ($\beta = .164, p < .05$). These results suggest full mediation (Baron & Kenny, 1986).

Hypothesis 3 predicted that employee obligations to develop skills will mediate the relationship between talent inducements and human capital. This hypothesis is partially supported as the relationships between talent inducements and employee obligations ($\beta = .372, p < .001$), employee obligations and human capital ($\beta = .270, p < .05$) and talent inducements and human capital ($\beta = .261, p < .05$) are all significant in the estimated model suggesting partial mediation (Baron & Kenny, 1986). The total indirect effect of talent inducements on human capital through employee obligations is also significant ($\beta = .100, p < .05$).

Of the control variables only the path from tenure to talent inducements is significant ($\beta = -.261, p < .01$).

**DISCUSSION**

In the present paper we approached talent management as a specific dimension of SHRM focusing explicitly on the accrual of human capital (Cappelli, 2008). Going beyond previous research on the direct relationship between HRM and human capital (e.g. Youndt et al., 2004) we examined indirect relationships in terms of employee responses to organizational inducements differentiating between employees on the basis of the qualities that constitute talent. In so doing, we respond to calls to apply a psychological-contract perspective in order to assess behavioural and attitudinal reactions to HRM (Wright & Nishii, 2007).

The finding that skill-enhancing HRM is positively related to talent inducements indicates that the use of extensive skill-enhancing HRM practices does communicate the centrality of employee qualities reflecting talent. Such an emphasis can have a motivational effect as employees associate organizational inducements with qualities that reflect talent in the organization. Whether explicitly communicated by the organization, or implicitly derived
by the employees, such inducements are positively related to employee felt obligations to
develop skills. As both inducements and obligations were positively related to human capital,
our results imply that differential treatment of employees based on criteria constituting talent
can have positive effects on employee motivation and felt obligations to develop skills and
apply these in service of the organization. These findings indicate that inducing employees
based on talent qualities can create a continuous tournament, in which employees are
motivated and compelled to develop the qualities desired by the organization. This
perspective reflects a dynamic view of talent management in which talent is not only a label
granted to a fixed group of employees (cf. Mäkelä, Björkman, & Ehrnrooth, 2010; Collings &
Mellahi, 2009). Through the lens of the psychological contract, talent management can
function as a framework within which to define, communicate and engender the development
of qualities considered important for the achievement of present and future organizational
goals.

**Directions for future research**

Research on talent management is surprisingly scarce, especially given the growing interest
within the practitioner community (Lewis & Heckman, 2006). As a consequence, there is
little knowledge about the array of positive and negative consequences talent management
may have on employee attitudes and behaviours. This study provides indicative support for
positive effects on human capital and psychological contract obligations. How these dynamics
develop over time is however, an unexplored issue. A plausible caveat of the presented
*continuous tournament* view of talent management is that communicated talent inducements
may raise expectations concerning employee rewards that may later be difficult to fulfil by the
organization. This is a particular risk in organizations that formally identify, define and
communicate membership in different pools of talent (Cappelli, 2008). A central line of future
research is therefore to explore how psychological contract obligations differ between ‘pools’ of employees e.g. employees who know they are identified as talent, employees who know that they are not identified as talent and employees who don’t know whether or not they are identified as talent. Future research is pertinently needed to fill this research gap in order to increase our knowledge of the consequences of talent management practices.

Managerial implications

HRM practices always, intentionally or intentionally, send signals that employees interpret and make sense of to form an understanding of desired behaviours and related rewards. As a consequence, HR practitioners need to consider to what extent talent management practices, including talent inducements, are explicitly communicated. As indicated by our results talent inducements can have powerful effects on employee behaviours. At the same time however, it becomes even more important to ‘walk the talk’ of HRM as unmet expectations easily lead to psychological contract breach and feelings of violation that can have serious adverse effects on employee attitudes and behaviours (Morrison & Robinson, 1997; Zhao, Wayne, Glibkowski & Bravo, 2007).

Limitations

The limitations of this preliminary study are as follows. Firstly, given its cross-sectional nature and the use of single respondents, we could not completely rule out the possibility of common method variance despite our attempts to reduce the magnitude of this problem (Podsakoff et al., 2003; Richardson et al., 2009). In particular, the assessment of human capital would in future studies benefit from the use of multiple key informants. Secondly, the sample used for testing the theoretical framework was restricted to managers and professionals among selected organizations in Finland and may not generalize to other
organizational and cultural/institutional contexts. Thirdly, we applied the psychological contract as a lens through which to capture reactions to organizational practices, but were unable to tap into all of the possible multifaceted and idiosyncratic elements. Lastly, we did not have data on the formal identification of talent in the sample organizations and could therefore not compare reactions to talent inducements between employees considered talent and non-talent. Despite these limitations, however, we argue that the present framework and findings contribute to the literature and offer avenues for future research on HRM and talent management.
REFERENCES


### TABLE 1 – Descriptive statistics

<table>
<thead>
<tr>
<th>N = 126</th>
<th>Category</th>
<th>%</th>
</tr>
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<tr>
<td><strong>Organization size</strong></td>
<td>&lt;10 employees</td>
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</tr>
<tr>
<td></td>
<td>11-100 employees</td>
<td>23.8</td>
</tr>
<tr>
<td></td>
<td>101-1 000 employees</td>
<td>27.8</td>
</tr>
<tr>
<td></td>
<td>1 001-10 000 employees</td>
<td>15.9</td>
</tr>
<tr>
<td></td>
<td>10 001 or more employees</td>
<td>19.0</td>
</tr>
<tr>
<td><strong>Type of organization</strong></td>
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</tr>
<tr>
<td></td>
<td>Private company</td>
<td>52.4</td>
</tr>
<tr>
<td></td>
<td>Non-profit organization</td>
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</tr>
<tr>
<td></td>
<td>Corporation</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>Other</td>
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</tr>
<tr>
<td><strong>Position level</strong></td>
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<tr>
<td></td>
<td>Top management</td>
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<td></td>
<td>Middle Management</td>
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<tr>
<td></td>
<td>Professional/Expert</td>
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<td></td>
<td>Other</td>
<td>9.5</td>
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<tr>
<td><strong>Function</strong></td>
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</tr>
<tr>
<td></td>
<td>Sales, marketing or customer service</td>
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<tr>
<td></td>
<td>Finance</td>
<td>24.4</td>
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<tr>
<td></td>
<td>Logistics and sourcing</td>
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<td>HR</td>
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</tr>
<tr>
<td></td>
<td>Research and development</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>Legal and administration</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>30 or younger</td>
<td>34.1</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
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<td>41-50</td>
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<td></td>
<td>61 – 70</td>
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<tr>
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<td>70 or older</td>
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<tr>
<td><strong>Gender</strong></td>
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</tr>
<tr>
<td></td>
<td>Female</td>
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</tr>
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</table>

*6 Sums may not amount to 100% due to missing values*
TABLE 2 – Correlation Table

<table>
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<tr>
<th>Correlations</th>
<th>SD</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skill-enhancing HRM</td>
<td>.82</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Talent Inducements</td>
<td>1.35</td>
<td>.609***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Obligations to develop skills</td>
<td>.97</td>
<td>.453***</td>
<td>.388***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Human Capital</td>
<td>1.10</td>
<td>.563***</td>
<td>.541***</td>
<td>.467***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. Tenure in organization</td>
<td>5.81</td>
<td>.159</td>
<td>-.157</td>
<td>-.154</td>
<td>.084</td>
<td>1</td>
</tr>
<tr>
<td>6. Age</td>
<td>2.60</td>
<td>-.116</td>
<td>-.243**</td>
<td>-.141</td>
<td>-.282**</td>
<td>.106</td>
</tr>
</tbody>
</table>

FIGURE 1 – Hypothesized framework
FIGURE 2 – Results

Control variables in grey. In the interest of clarity loadings of the marker items are not displayed.

Two tailed significance estimates *** = p < .001, ** = p < .01, * = p < .05, † = p < .10

Fit excluding control variables: (χ² (84) = 95.5, CFI = .99, TLI = .98 , RMSEA = .033., SRMR = .050)

Fit including control variables: (χ² (107) = 143.7, CFI = .96, TLI = .95 , RMSEA = .052., SRMR = .053)
APPENDIX 1 - Pre-study findings

The semi-structured interviews typically lasted around 60 minutes, were recorded and transcribed verbatim. From the transcriptions we summarized the respective talent-management processes and definitions of talent in a table containing all MNCs in order to give an overview and enable comparison of the findings. We then grouped the different definitions based on similarity in criteria, and subsequently assigned overarching labels to the categories reflecting the content of each one. The emerging categorization is depicted below.

<table>
<thead>
<tr>
<th>Category</th>
<th>Expressed by the head of HR as:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>‘constantly delivers above expectations, proven performance, current and past performance, factual performance, consistently strong in performance’</td>
</tr>
<tr>
<td>Skills</td>
<td>‘good leadership skills, capable of jumping 1-2 steps up, capable of coping with change, potential for at least one step advancement, good educational background, professional capabilities, formal qualifications, good communication and collaboration skills, ability to execute strategy in own area, ability to rise and succeed in more senior critical roles, growth and development potential, future leaders’</td>
</tr>
<tr>
<td>Proactive attitudes</td>
<td>‘interested in developing self and others, motivation for self-development, taking risks to achieve objectives, cross-functional interest and attitude, organizational agility, engagement and aspiration to rise and succeed in more senior critical roles, mobile’</td>
</tr>
<tr>
<td>Behavioural compliance</td>
<td>‘adherence to values, behaviour in line with leadership capabilities, recognized leadership- and value-based behaviour, value-based behaviour’</td>
</tr>
<tr>
<td>Other</td>
<td>‘understanding of strategy, customer oriented, retainable, and recognized as talented in the organization’</td>
</tr>
</tbody>
</table>

APPENDIX 2 – Measures

1. Skill-enhancing HRM practices (Takeuchi et al., 2007)

In this section we ask you to respond to statements concerning HRM practices in your organization. We ask you to focus on upper staff e.g. managers, professionals and experts (i.e. excluding operatives or manual workers).

Please indicate to what extent you agree with the following statements regarding HRM practices in your organization (1 = not at all, 7 = very much):

- a. Jobs are designed around individual skills and abilities.
- b. Selection places priority on potential to learn.
- c. Training is continuous.
- d. Training programs emphasize on-the-job learning.

2. Talent-inducement scale

In this section we are interested in your perception of your employer’s relationship with its employees. We ask you to focus on the relationship with upper staff e.g. managers, professionals and experts (i.e. excluding operatives or manual workers).

Please indicate to what extent you perceive your organization has made the following commitments (1 = not at all, 7 = very much):

- a. To provide high-performing individuals with career and promotion opportunities.
- b. To provide highly capable and skilled individuals with career and promotion opportunities.
- c. To provide individuals proactively taking new initiatives with career and promotion opportunities.
- d. To provide individuals actively supporting the organization’s strategy, values and leadership behaviours with career and promotion opportunities.

3. Human capital (Subramaniam & Youndt, 2005)

In this section we ask you to evaluate aspects of your organization’s employees. We ask you to focus your evaluation on upper staff e.g. managers, professionals and experts (i.e. excluding operatives or manual workers).

Please indicate to what extent you agree with the following statements regarding people in your organization (1 = not at all, 7 = very much):

- a. Our people are widely considered the best in our industry
- b. Our people are experts in their particular jobs and functions

4. Obligations to develop skills (Rousseau, 2000)

Please indicate to what extent you have committed yourself to exert the following behaviours for your organization (1 = not at all, 7 = very much):

- a. Seek out developmental opportunities that enhance my value to this employer.
- b. Build skills to increase my value to this organization.
- c. Actively seek internal opportunities for training and development.

5. CFA Marker Scale (1 = not at all, 7 = very much):

- a. How much would you say the education you received at [the business school] has helped your career development?
- b. How much would you say the social network you created at [the business school] has helped your career development?
- c. Overall, how big a part does the social network you created at [the business school] play in your current life outside work?
APPENDIX 3 – ESSAY 3

HRM STRENGTH AND EMPLOYEE OBLIGATIONS: THE CASE OF THE PERFORMANCE APPRAISAL PROCESS.

Unpublished working paper

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Hanken School of Economics
ABSTRACT

In this paper we examine Bowen and Ostroff’s (2004) recognized but empirically underdeveloped HRM process theorization. Specifically, we test the proposed relationships between emergent HRM climates and collective employee responses in a sample of 930 managers and professionals in 106 subsidiaries of Nordic multinational corporations (MNCs). In so doing, we build on the notion of psychological contracts (Rousseau, 1995), reflecting employees’ perceptions of behavior-reward (cause-effect) relationships, thereby responding to calls for applying psychological contract theory as a lens to study employee reactions to HRM systems (Ostroff & Bowen, 2000; Wright & Nishii, 2007). More specifically, we test the relationships between the HRM process level and variance as well as their interaction, and employee obligations level and variance. As a consequence, we contribute by furthering theory development not only concerning the HRM-performance relationship but also by empirically and conceptually extending the analysis of situational strength (Meyer et al., 2010) and the antecedents of strong climates (Schneider et al., 2002)

Key words: Attribution theory, situational strength, climate strength, HRM strength, HRM process, psychological contract, emergence.
INTRODUCTION

For a number of years researchers have been occupied with the organizational value creating potential of human resource management (HRM) (Becker & Huselid, 1998; Wright, Dunford, & Snell, 2001; Barney & Wright, 1998). The bulk of this line of research has focused on testing relatively distal relationships between organizational HRM practices, and outcomes such as productivity and organizational performance (e.g. Huselid, 1995). In the last few years however, HRM scholars have begun to apply multi-level research designs to analyze how more proximal collective attitudinal and behavioral outcomes can explain the HRM-performance link (Collins & Smith, 2006; Sun, Aryee, & Law, 2007; Takeuchi, Chen, & Lepak, 2009; Takeuchi, Lepak, Wang, & Takeuchi, 2007). Taken together, this research has significantly contributed to advancing knowledge about the HRM-performance linkage by pursuing what has been called content-based arguments about the effects of HRM (Bowen & Ostroff, 2004). This stream of research implies that the content of a system of HRM practices create, in one form or another, engender individual and collective ability, motivation and opportunities to act in line with organizational objectives (see Lepak, Liao, Chung, & Harden, 2006 for a review). The underlying assumption is that organizational HRM practices can enhance organizational performance, through their impact on various employee attitudes and behaviors (see meta-analysis in Combs, Liu, Hall, & Ketchen, 2006). However, there are still many open questions concerning this path from HRM to organizational-level outcomes such as performance (Becker & Huselid, 2006; Boxall & Macky, 2009; Paauwe, 2009; Wall & Wood, 2005).

In some contrast to the content-based theorizations of HRM’s effects, Bowen and Ostroff (2004) introduced a process theorization, conceptualizing HRM as a signalling system that enables employees to develop strong individual and collective perceptions of expected attitudes and behaviours, and the motivation to pursue them. At its core, this
theorization builds on Kelley’s (1967) causal attribution theory, implying that individuals’ attributions of causal significance to the HRM practices are crucial for their individual level effects on attitudes and behaviors. These attributions Bowen and Ostroff (2004) refer to as the HRM process. However, going beyond Kelley (1967), Bowen and Ostroff (2004) propose that employees’ causal attributions to the HRM system, contribute to the emergence of not only individual, but also collective attitudes and behaviors. This emergence of collective attitudes and behaviors Bowen and Ostroff (2004) explain by equating a strong HRM process with the notion of situational strength (Cooper & Withey, 2009; Meyer et al., 2010; cf. Mischel, 1973). Specifically, a strong HRM process, i.e. strong causal attributions to the HRM system, is theorized to limit variance in individuals’ attitudinal and behavioral responses to the HRM system. This restricting capacity of the HRM process enables uniform attitudinal and behavioral climates to emerge (cf. Gonzaléz-Romá, Peiró, & Tordera, 2002; cf. Schneider et al., 2002).

As such, the process theorization is a welcomed contribution to the under-theorized field of HRM (Boselie, Dietz & Boon, 2005; Guest, 1997; Boxall & Macky, 2009) with great potential to shed more light on the mechanisms of HRM’s influence on organizational outcomes (Bowen & Ostroff, 2004). As the theory focuses on how individual responses to HRM emerge at a higher level of analysis it also addresses the micro-macro divide in HRM research (Wright & Boswell, 2002; Minbaeva, Foss & Snell, 2009; Molloy, Ployhart, & Wright, 2010). Specifically, the HRM process theorization takes a causal attribution perspective on the much-debated question of how collective organizational phenomena emerge from individual-level experiences and perceptions (Coleman, 1990; Klein & Kozlowski, 2000; Morgeson & Hofmann, 1999 and answers to the general call for research on the micro-foundations of organizational phenomena (Felin & Foss, 2005; Felin & Hesterly, 2007). Despite the theoretical richness and potentially far-reaching implications of this
theorization, few studies have attempted to empirically explore and test it. In fact we have been able to identify only two attempts to apply it in empirical research (Sanders, Dorenbosch, & De Reuver, 2008; Li, Frenkel, & Sanders, forthcoming).

Against this background, the present study situates the HRM process theorization within the wider debates of micro-foundations, emergence and, situational strength, clarifies the causal logic of the theorization, and derives a number of key hypotheses embedded in it. We then test these hypotheses in a sample of 930 managers and professionals in 106 subsidiaries of Nordic multinational corporations (MNCs). In so doing, we focus explicitly on the performance appraisal process (PA process) and build on the notion of psychological contracts (Rousseau, 1995) to argue that a key outcome of performance appraisal strength (PA strength) is a strong climate of employee obligations. More specifically, we test the relationships between the PA process level and variance, and employee obligations level and variance. Our intended contribution is twofold. Firstly, our aim is to further theory development of the relationship between HRM and organizational outcomes by empirically testing key hypotheses in the HRM process theorization (Bowen & Ostroff, 2004). Secondly, our aim is also more generally to contribute to the understanding of the micro-level foundations (Felin & Foss, 2005; Felin and Hesterly, 2007) of situational strength (Meyer, Dalal, & Hermida, 2010) and the related notion of the emergence of strong organizational climates (Schneider, Salvaggio, & Subirats, 2002).
THEORY

SITUATING THE HRM THEORY

The notion of HRM strength is central in the HRM process theorization. It is closely related to the notion of situational strength, the roots of which may be traced back at least to Kurt Lewin (see Reis, 2009; Cooper & Withey, 2009) and Max Weber (Meyer et al., 2010). The concept of situational strength embodies the idea that social contexts are important determinants of human behavior and, more specifically, that such contexts can restrict the effects of individual dispositions and/or incentivize collectively aligned behaviors (Johns, 2006; Meyer et al., 2010). Thus, HRM strength essentially deals with the issue of how HRM can restrict variance in employee responses, and more specifically with how subjectively experienced psychological climates emerge at a higher level of analysis as collective organizational climates (cf. Schneider, 2000; cf. Klein & Kozlowski, 2000; cf. Morgeson & Hofmann, 1999). Next, we shortly discuss these issues, focusing on the relationship between the HRM process theorization and situational strength. Subsequently we clarify the more specific causal logic of the theorization, based on which we move to the explicit derivation of our hypotheses.

Situational strength

While the situational strength hypothesis has become widely accepted in the behavioral sciences, and in the organizational behavior literature (Cooper & Withey, 2009), there is within social psychology a longstanding debate on how to identify and conceptualize the role of situational characteristics that are likely to influence individual behavior (Hogan, 2009; Funder, 2006; Kenny, Mohr, & Levesque, 2001; and Reis 2008). Some scholars argue that the situational strength hypothesis is essentially a dogma without empirical evidence and even that the whole hypothesis is uninteresting (Cooper & Withey, 2009). Nota bene, this debate in...
social psychology concerns the specific situational strength hypothesis which postulates that individual dispositions matter less in strong situations than in weak (Cooper & Withey, 2009; Meyer et al., 2010). This has been labeled the ‘restriction in variance’ hypothesis (Meyer et al., 2010: 133) due to its focus on situational strength as an antecedent of variance in individuals’ attitudes and behaviors.

A different situational strength hypothesis concerns the power of situations in general (Cialdini, 2008; Johns, 2006) and can be called the ‘main effects hypothesis’ of situational strength (Meyer et al., 2010, p. 129; cf. Cooper & Withey, 2009). This hypothesis has been pursued in research on climate strength focusing on the consequences of variance in individuals’ attitudes and behaviors for various outcomes (e.g. Dineen, Noe, Shaw, Duffy & Wiethoff, 2007; Gonzalez-Romá et al., 2002; Schneider et al., 2002).

Bowen and Ostroff’s (2004) theorization explicitly addresses both the ‘main effects hypothesis’ and the ‘restriction in variance hypothesis’ by identifying particular situational HRM process features and arguing that both the level and variance in perceptions about such features have implications for the level and variance in attitudinal and behavioral responses among employees. This is a significant contribution since the key challenge for research on situational strength has been to specify situational contingencies that are likely to create strong situations and induce collective-level conformity in attitudes and behaviors (Cooper & Withey, 2009; Meyer et al., 2010). In the pursuit of such contingencies Bowen and Ostroff (2004) build on research on social cognition and social influence, in the first hand on Kelley (1967), to propose that a strong HRM process is constituted by three features, i.e. HRM system *distinctiveness, consistency* and the *consensus* about it. These process features are argued to constitute the signaling strength of the system of HRM practices. Strong HRM signals are then theorized to reduce variance in interpretations of expected behaviors and associated rewards and therefore induce conformity in attitudinal and behavioral responses.
This conformity reflects Bowen and Ostroff’s (2004) view on emergence, that is, emergence is seen as the extent to which attitudinal and behavioral responses become similar among employees whereby the individual level constructs become valid at a higher level of analysis.

Based on this overall understanding of the HRM process theorization, we now turn to a more detailed examination of its causal logic, focusing on the role of causal attributions, the HRM process features and HRM strength, in turn.

KEY ELEMENTS OF THE HRM PROCESS THEORIZATION

The theoretical foundation for the HRM process theorization is Kelley’s (1967) version of attribution theory, which Bowen and Ostroff (2004) extend in three important ways. First, they extend it to the context of HRM, framing the HRM system as a signaling system that provides cues about expected attitudes and behaviors. Second, they extend it by identifying a number of HRM process features that foster the situational characteristics proposed by Kelley (1967) i.e. distinctiveness, consistency and consensus. Third, they extend Kelley’s (1967) theory by arguing that strong causal attributions induce conformity in responses and enable individual attitudes and behaviors to emerge as collective climates. Below, we discuss these extensions in turn.

Kelley’s theory of causal attributions applied to HRM

Kelley’s theorization (1967; 1972) deals with the “attributional processes that may underlie an individual’s causal inferences” concerning a particular phenomenon (Ziegler, Diehl, Zigon & Fett, 2004: 353). More specifically, it identifies the informational conditions under which an individual (A) is likely to attribute the cause of an event to a particular causal source candidate, for example an actor (B) rather than some other source such as the circumstances under which the event occurs. Kelley (1967) proposed that three source characteristics may be relevant for such attributions: the distinctiveness and the consistency of B’s behavior, and the
extent to which there is consensus about B causing the event (Kelley, 1967; Ziegler et al., 2004; White, 2002). Bowen and Ostroff (2004: 207) argue that the same characteristics are important for an employee’s attributions of causal significance to the HRM system, and that such attributions influence the employee’s understanding of the signals the HRM system send about the attitudes and behaviors the organization expects from her or him. In Bowen and Ostroff’s (2004) application of Kelley’s (1967) attribution theory, the potential ‘causal source candidate’ and ‘actor’ is thus the HRM system, ‘the event’ is the understanding of expected attitudes and behaviors and the HRM process features represent the informational conditions that should influence employees’ attributions of causal significance to the HRM system (Bowen and Ostroff, 2004), and thus employees’ understanding of the expected attitudes. Next we discuss the HRM process features.

The HRM process

The HRM process refers to “the features of an HRM system that send signals to employees that allow them to understand the desired and appropriate responses and form a collective sense of what is expected” (Bowen & Ostroff, 2004: 204). Bowen and Ostroff (2004) identify a large number of such HRM process features that, as noted above, should foster the HRM system distinctiveness, consistency and consensus, and thus employees’ attributions of causal significance to the system, and thereby employees’ understanding of expected behaviors. Currently there is no empirical or conceptual evidence of the relative importance of these process features. In order to begin the testing of the causal logic of the theorization, we examine the influence of a subset of the features. Next, we explain the role of these features.

According to Bowen and Ostroff (2004: 210) the perceived distinctiveness of an HRM system ensures that it is seen “as significant in defining the social context for employee behavior”. A fundamental process feature related to system distinctiveness, which we include
in the present study, is the visibility of the HRM practices. According to Bowen and Ostroff (2004: 208), visibility functions as “a prerequisite for interpretation”, in that it stimulates employees’ attention to and their interpretation of the meaning of the messages of the practices (Bowen & Ostroff, 2004; cf. Taylor & Fiske, 1978; cf. Tajfel, 1968) and thus employees’ attributions of causal significance to them. Ziegler et al. (2004) go further and argue that the more distinct a causal source is, the more likely it is to be judged as causally valid.

Perceived consistency, in this case the consistency “across HRM practices, time and employees” (Bowen & Ostroff, 2004: 210) should promote the perceived instrumentality of the practices and thus enhance employees’ attributions of causal significance to them. This is in line with Ziegler et al. (2004) according to which consistency should contribute to the validity and trustfulness of a particular causal source candidate. The present study focuses on a central feature of consistency which is denoted perceived process validity and refers to the “consistency between what [HRM practices] purport to do and what they actually do” (Bowen & Ostroff, 2004: 211).

The third of Kelley’s (1967) key characteristics, the perceived consensus (among relevant others) about the causal significance of a particular causal source candidate, is also important for an individual’s attribution of causal significance to the candidate in question, specifically by influencing an individual’s judgment of the correctness of such attribution (Ziegler et al., 2004). Bowen and Ostroff (2004: 212) argue that the perceived fairness of the HRM system promotes consensus among employees about the system’s causal implications, and thus attributions of causal significance to it.

According to our interpretation of Bowen and Ostroff (2004), all of the above HRM process features (visibility, validity and fairness) should thus, by way of their influence on employees’ attributions of causal significance to the HRM practices, have an impact on the
practices’ individual level signaling strength vis-à-vis expected attitudes and behaviors, and thereby individual employees’ understanding of, and compliance with, those expectations.

**HRM strength**

Bowen and Ostroff (2004) then extend the above individual level argumentation to the collective level of analysis. This is where the notion of HRM strength comes into play. In one of Bowen and Ostroff’s (2004: 213) formulations, HRM strength denotes a situation where the “variability among employees’ perceptions of the meaning of the situation [i.e. the signals of the HRM system] will be small”. This definition of HRM strength, referring to the variance in employee perceptions of the HRM process, is in line with how the notion of climate strength has been conceptualized in previous research (e.g. Lindell & Brandt, 2000; Schneider et al., 2002). Notably however, Bowen and Ostroff (2004: 207; 208; 213; 217) also argue that the within-group mean level of the perceived HRM process and the variance of the perceptions of the HRM process are both indicators of HRM strength. We interpret them as suggesting that HRM strength is ultimately a function of both the level and the variance of the HRM process and that both may have independent effects.

This suggested emergence of collectively high and shared attributions of causal significance (i.e. perceptions of the HRM process features), and thus collectively high and shared understandings of expected behaviors, represents Bowen and Ostroff’s (2004) extension of Kelley’s (1967) attribution theory to the collective level of analysis. The extension is logical, involving the implicit proposition that the stronger each individual’s attribution of causal significance to the HRM system is, the stronger (higher and more shared) should also the collective causal attributions be. The underlying logic is that strong social cues should lead to employees engaging in deeper cognitive information processing (Guzzo & Noonan, 1994; Salancik & Pfeffer, 1977; Ziegler et al., 2004), resulting in stable cognitive
schema shared across employees (cf. Tajfel, 1968). The social influence of this cognitive information processing represents the key argument which justifies Bowen and Ostroff’s (2004) extension of Kelley’s (1967) theory to the collective level of analysis. The essential argument is that the HRM process, based on individual-level causal attributions, can foster high and shared collective causal attributions through social influence. In this way, consistent with Ross and Nisbett (1991) and Shoda and Mischel (2000), individual employee perceptions of the HRM process represent the micro-level foundations (Felin & Foss, 2005; Felin & Hesterly, 2007) of strong HRM systems. It is important to note, that the HRM process theorization concerns two different aspects of organizational climates. The first is the HRM climate which refers to collective causal attributions to the HRM system. The second concerns the consequences of this, i.e. the resulting climate in the sense of the collective understanding of the meaning of the situation and the resulting attitudes and behaviors.

In summary, the central claim that can be derived from our elaboration of Bowen and Ostroff (2004: 213) is that the identified HRM process features should create a strong social “influence situation” in which employees collectively construct “cognitive maps”. Such cognitive maps become visible in both high and shared within-group understandings of the HRM signals and consequently of “the appropriate ways of behaving” (Bowen & Ostroff, 2004: 213). The theorized outcome of this is that employees, as a collective, come to “yield to the message”, that is respond with positive and similar attitudes and behaviors (Bowen and Ostroff, 2004: 213). The inverse argument is that “if the HRM system is weak, HRM practices will send messages that are ambiguous and subject to individual interpretation producing dispersed attitudinal and behavioral responses (Bowen and Ostroff, 2004: 213).

Having clarified the general connection between Kelley’s (1967) attribution theory and Bowen and Ostroff’s (2004) HRM process theorization, explained the specific role
of the process features under examination in the present study, and elaborated on the extension of Kelley’s (1967) attribution theory to the collective level of analysis, we now turn to the specific role of the performance appraisal practice, the focal HRM practice in the present study.

**Performance appraisal process strength and employee obligations**

As noted in the introduction, in the present study we focus on the performance appraisal (PA) practice. While acknowledging that Bowen and Ostroff’s (2004) process theory applies to the whole HRM system, we note that in so doing it also applies to each HRM practice. In fact, the PAs are likely to play a key role in a strong HRM system. The overarching purpose of a PA process is to communicate organizational objectives in the organization and evaluate employee performance against these objectives (Chiang & Birtch, 2010). Through these primary functions, PAs “serve as the motivational basis for employee behavior” and form an important basis for HRM decisions regarding employee development and allocation of rewards (Chiang & Birtch, 2010: 3). In line with Bowen and Ostroff (2004) all of these aspects of the PA practice should, depending on the PA process, increase employees’ understanding of the organization’s strategic priorities and their motivation to pursue them. As a whole, PAs represent a primary example of an HRM practice that is likely to send signals to employees about expected attitudes and behaviors and the consequences of displaying or not displaying such attitudes and behaviors. In this sense, the PA forms a basis for communicating the terms of the employee-organization relationship or the psychological contract (cf. Guest & Conway, 2002). In fact, Rousseau and Greller (1994: 97) argued specifically that “the formal performance appraisal process constitutes a key contract making feature”. We thereby approach the PA process “as a critical determinant in eliciting employees to behave in ways supportive of organization goals” (Ostroff & Bowen, 2000:
The psychological contract is generally conceptualized as an individual’s idiosyncratic perception of the terms of the exchange relationship, that is, organizational inducements and employee obligations (Conway & Briner, 2005; Rousseau, 1995). In essence, the psychological contract thus reflects a ‘cognitive map’ consisting of desired attitudes and behaviors and the associated rewards (cf. Ostroff & Bowen, 2000). In the present study we focus on how the PA practice and specifically perceptions of the PA’s process features can promote both high and shared collective employee obligations, that is a strong obligations climate. The contention is not to dispute the idiosyncratic nature of psychological contracts, but to examine the circumstances under which they become collectively strong and shared (cf. Ostroff & Bowen, 2000).

Against this background we are now in a position to focus on specific propositions in Bowen and Ostroff (2004) that need and deserve to be empirically tested. We stress that, given the richness and complexity of the theorization in question, it is important to begin testing specific arguments embedded therein.

HYPOTHESES DEVELOPMENT

One specific argument in Bowen and Ostroff (2004) concerns the influence of the within-group mean level of perceptions of the HRM process: “an HRM system high in distinctiveness, consistency, and consensus should enhance clarity of interpretation in the setting, thereby allowing for similar ‘cognitive maps’… to develop among people” (Bowen & Ostroff, 2004: 213). Thus, a high within-group mean level of employee perceptions of the HRM process should, based on strong within-group attributions of causal significance to the HRM system and a resulting high average understanding of expected behaviors, create a social “influence situation” through which a collective of employees should “yield to the message”, that is display positive attitudinal and behavioral responses to the HRM signals
Bowen and Ostroff’s (2004) second key argument is that the level of the HRM process, through social information processing, influences the emergence of shared “cognitive maps” and thereby the “conformity” in employees’ attitudinal and behavioral responses. Thus, the level of the perceptions of the HRM process should be related to the variance in attitudinal and behavioral responses. To test these two arguments we formulate the first two hypotheses, with specific reference to the PA process and employee obligations, as follows:

**Hypothesis 1:** The within-group mean level of the PA process is positively related to the mean level of employee obligations.

**Hypothesis 2:** The within-group mean level of the PA process is negatively related to the variance of employee obligations.

Bowen and Ostroff (2004: 217) also argue that “the strength of the [HRM] climate is indicated by the degree of variability in responses, regardless of the level of the aggregate rating on the content of climate”. As a second indicator of a strong HRM system, low variance in the perceptions of the HRM process should not only induce “uniform expectancies about responses” and thereby collective “conformity”, but also collective “yielding” with the desirable attitudes and behaviors as communicated through the HRM system (Bowen & Ostroff, 2004: 213). By collective yielding, Bowen and Ostroff (2004) refer to the within-group mean level of responses (high/low), and by conformity to the variance of such responses. Hence they essentially argue that low variance in the perceived HRM process should be associated with firstly, low variance, and secondly, a high level of attitudinal and behavioral responses (Bowen and Ostroff, 2004: 213).

However, we see no theoretical or logical reason for the suggested relationship between variance in perceptions of the HRM process and the level of resulting attitudes and
behaviors. In contrast, an association between the variance in perceptions of the HRM process and the variance in responses is to be expected since the perception of the HRM process at the individual level should be directly related to the understanding of HRM system messages and responses to them. The less variance in understanding, the less variance there should be in employee attitudes and behaviors. This leads us to formulate the following hypothesis, again with reference to the PA process and obligations:

*Hypothesis 3: The within-group variance of the PA process is positively related to the variance of employee obligations.*

Given that both the within-group mean level and the variance in the HRM process should have independent effects on the outcomes, we argue that the strongest influence situation, and thus also the strongest yielding, would emerge when the HRM process is both on average highly rated and employees agree on their ratings (low variance). Consistent with recent research on organizational climates (Dineen et al., 2007; Gonzalez-Roma et al., 2002; Schneider et al., 2002), this suggests an interaction effect between the within-group mean level and the variance of the HRM process over and above either linear effects. However, we go beyond the latter stream of research in suggesting that such an interaction effect should influence both the mean level and the variance of employee responses to the HRM system signals.

Support for this can be found in Bowen and Ostroff’s (2004: 214) proposition that: if the signals employees attend to are highly distinctive but inconsistent or conflicting, “…confusion, disillusionment, or other negative reactions will likely result. In such a case, not only will shared perceptions about the practices and climate particularly be unlikely to emerge, but many employees may have negative attitudes”. In this quote, Bowen and Ostroff
(2004) discuss the scenario where distinctiveness is high and consistency and consensus are low. They do not really consider the possibility of situations where the HRM signals are strong (high average distinctiveness, consistency and consensus) but conflicting (high variance) or conversely weak but uniform signals. This is due to the argument that strong individual attributions are theorized to lead to both high and shared collective attributions, that is, high individual-level ratings on the HRM process should automatically lead to a high collective level and low variance of in HRM process perceptions.

While the argument for level is a question of direct mathematical aggregation, and hence true by definition, the argument for variance is theoretical and implies that there should be a negatively linear relationship between level and variance in HRM process ratings. Therefore a high level coupled with high variance should not be theoretically possible. However, we claim that the theorized relationship between level and variance is unlikely to be fully realized due to varying individual dispositions and therefore a variety of combinations of level and variance are empirically likely to exist. This provides two key opportunities to test Bowen and Ostroff’s (2004) arguments about the social influence effects of the HRM process on the yielding (level) and emergence of conformity (variance) in responses to the HRM system signals.

Thus, to the extent that the social influence effect in the sense of shared cognitive maps matter as implied by Bowen and Ostroff (2004: 207), the following should apply: The lower the within-group variance, the stronger should be the effect of the mean level of the HRM process ratings have on the level of employee obligations (i.e. the higher the average yielding to the HRM messages should be). Based on this we formulate our fourth hypothesis, more specifically concerning the emergence of strong collective climates based on social information processing and social influence, as follows:
Hypothesis 4: The within-group variance of the PA process will moderate the relationship between the mean level of the PA process and the mean level of employee obligations such that the latter relationship is weaker when the variance of the PA process is high.

With regards to variance in employee responses, it is also conceivable that the level and variance in HRM process ratings can have a similar interacting effect. Bowen and Ostroff (2004) centrally argue that perceptions of the HRM process reflect the general causal power of the HRM system signals in producing positive responses. Specifically, in the situation of high average HRM process ratings but with significant variance it is especially unlikely that shared perceptions about the HRM system and the expected attitudes and behaviors will emerge (Bowen & Ostroff, 2004: 214). As a consequence, while conflicting experiences of the HRM system signals will lead to conflicting responses, this effect will be even stronger when the average ratings of the HRM process are high, that is, employees display strong causal attributions to the HRM system. This can be seen as another more specific argument concerning the variance in employee responses, in this case specifically based on attributions of causal significance to the HRM practices. Correspondingly, the higher the mean level of the HRM process is, i.e. the stronger employees’ attributions of causal significance to the HRM practices are on average, the more effect should the variance of the HRM process have on the variance of employees’ responses. We thus formulate our last hypothesis as follows:

Hypothesis 5: The within-group mean level of the PA process will moderate the relationship between the variance of the PA process and the variance of employee obligations such that the latter relationship is weaker when the level of the PA process is low.
In summary, focusing on specific statements in Bowen and Ostroff (2004), we have arrived at the following model of the causal logic of the HRM process theorization (Figure 1). We now proceed to test this model.

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METHODS

Sample
This study is based on data collected in the context of a large-scale research project on global HRM. The data used for this paper were gathered in the spring of 2010. During this time we conducted a web-based survey of 930 managers and professionals in 106 MNC subsidiaries within eleven Nordic MNCs. The first step of the entire data-collection process was to identify the largest Finnish MNCs in terms of number of employees. We also checked that the scope of their international operations was suitable for the purpose of our project. Our aim was to gain access to at least 10 subsidiaries in 10 MNCs, one home-country and nine foreign units, (excluding representative offices) in each MNC. Initially, eight MNCs chose to participate in the project. We then targeted additional Swedish and Norwegian MNCs of similar size, resulting in one Swedish and three Norwegian MNCs joining the project. During the process one MNC withdrew due to a major restructuring process. The resulting 11 Nordic MNCs represent a variety of industries, ranging in size from 2,500 to 60,000 employees and have units in an average of 30 different countries.

For the web-based study that forms the empirical basis of the current paper, each subsidiary HR manager (whom we had interviewed over the phone approximately 6 months earlier) chose 10 respondents within the subsidiary according to the following criteria: i) there should be a fairly even balance between managers (with direct subordinates) and professionals/specialists from each unit, ii) the managers should be 1-2 hierarchical steps from
the General Manager (i.e. they report to the General Manager or to a manager that reports to the General Manager), and iii) managers and professionals/specialists from the HR function were not accepted. The purpose of these criteria was to obtain a coherent sample with sufficient variation.

The respondents were then sent an e-mail briefly describing the project and inviting respondents to complete a web-based questionnaire. We created unique questionnaires for each MNC to enable the inclusion of some MNC-specific terminology concerning HRM practices. Reminders were sent after 1-2 weeks. In case the response rate remained low after two reminders, the HR manager was contacted to remind respondents personally or provide new names. After this we also sent a final reminder to the remaining respondents. The final number of individuals responding to the survey was 930 spread across 106 MNC subsidiaries, producing a response rate of 80%. Characteristics of the sample are provided in Table 1. Before proceeding with our analysis we scanned our data for outliers with extreme influence on our results. As a consequence, we removed one subsidiary with 8 respondents. Thus, the resulting final sample was 922 respondents in 105 MNC subsidiaries. The survey was answered anonymously, with individual respondents being unidentifiable.

The questionnaire language was English as this was the official language of the MNCs and all respondents occupied rather senior positions. The questionnaire took between 15 to 20 minutes on average to complete.

**Measures**

**Performance appraisal process.** Bowen and Ostroff (2004) note that an important topic for future research is to develop measures of HRM process features. In pursuing this, and given
that there currently is no knowledge of the relative importance of these features, we focused on a subset of them covering all of the three dimensions of situational contingencies as described by Bowen and Ostroff (2004), i.e. distinctiveness, consistency and consensus. The specific process features under examination in the present study were visibility (distinctiveness), validity (consistency), and procedural and distributive justice (consensus). All measures are exhibited in Appendix 1. In developing these measures we followed Bollen (1989) and began by focusing on face validity, extracting definitions and key characteristics of the HRM process features as described by Bowen and Ostroff (2004). The operationalizations were then developed through multiple rounds of iterations in meetings with the six person research team that together developed the present research design and collected the data. We pre-tested the operationalizations in pilot interviews with four external managers in equivalent positions to the respondents in the present study. Based on their feedback we re-worded some questions.

In justifying the importance of the visibility of the HRM system Bowen and Ostroff (2004: 208) argue as follows: “The creation of a strong organizational situation requires that situational characteristics be salient and visible throughout much of employees’ daily work routines and activities”. Our measure (Appendix 1) is intended to account for the visibility of performance appraisals in this sense. With regards to validity of the HRM system Bowen and Ostroff (2004: 211) argue as follows: “HRM practices must display consistency between what they purport to do and what they actually do in order for them to help create a strong situation”. In designing the measure of validity of the performance appraisal process we focused on this description of validity and the purpose of performance appraisals. With reference to the importance of the fairness of the HRM system Bowen and Ostroff (2004:213) argue that agreement among employees’ perceptions of desired behaviors and associated rewards are influenced by “perceptions of whether HRM practices adhere to the principles of
delivering three dimensions of justice: distributive, procedural and interactional”. We adapted questions concerning these features from Colquitt (2001) to suit the purpose of performance appraisals (Appendix 1).

**Employee obligations.** To measure employee obligations we used items from Rousseau’s (2000) psychological contract inventory (PCI), and used 3 items for accepting performance demands and 3 items for the commitment to building skills respectively (Appendix 2).

**Variance.** Consistent with previous research (e.g. Dineen et al., 2007; Chan, 1998; Lindell & Brandt, 2000; and Schneider et al., 2002, we conceptualized within-group variance as the differences in perceptions among group members, and measured it as the within-group standard deviation of each construct.

**Factor analysis**

To validate our measures we first carried out a hierarchical CFA with robust standard errors correcting for the autocorrelation occurring due to the nested data structure. In the first step of the CFA we defined paths from each HRM process and employee obligations dimension to the corresponding items. In the second step we defined paths from a single HRM process and employee obligations construct to the corresponding dimensions. We allowed the residuals of the distributive and procedural justice factors to correlate due to their close theoretical relation. The CFA displayed decent fit ($\chi^2 (127) = 238.21$ ; CFI = .99, TLI = .99, RMSEA = .031, with standardized factor loadings ranging from .73 to .95 ($p < .001$), providing evidence of convergent and discriminant validity of the measures.

Based on this CFA we created an additive scale for each process feature and employee obligations dimension. The Cronbach’s alpha was .88 for the visibility scale, .95 for the validity scale, .86 for the procedural justice scale and .96 for the distributive scale. The Cronbach’s alpha was .92 for both obligations scales. The composite scales were aggregated to the subsidiary level of analysis and used as factor indicators for a latent construct of the PA.
process (for an overview of parceling methods see e.g. Landis, Beal & Tesluk, 2000). The intra-class correlations for the composite scales were: ICC1 between .04 and .10 and ICC2 between .29 and .50. These values are below the generally recommended cutoff point of 0.7 (Klein & Kozlowski, 2000). Contrary to most climate research however, the use of dispersion models require measures of climate that exhibit adequate variability (Schneider et al., 2002). Clearly, to the extent that a phenomenon is interesting from a situational strength point of view, there needs to be both significant variance in the average level and in the variance between the groups, otherwise there is little to explain. In our case, the ANOVA F-test was significant for all aggregated variables (p < .001 - p < .01) and the variance estimates of all variables in a confirmatory factor analysis (CFA see below) were significant (p < .001).

Finally, we performed a second CFA using the aggregated composite scores and standard deviations of each construct to form separate factors for the level and variance of the PA process and employee obligations. The CFA displayed acceptable fit ($\chi^2 (46) = 62.23$; CFI = .97, TLI = .96, RMSEA = .058) with standardized loadings ranging from .58 to .88 (p < .001). We fixed the residuals of two factor indicators at 0 due to small and insignificant negative residual correlations. Due to the theoretical proximity of the two justice measures we allowed their residuals to correlate freely. Both correlations were significant (p < .001). For two factor indicators we also allowed the level and variance residuals to correlate since both measures are essentially derived from the same construct. Both correlations were negative and significant (p < .001) indicating the presence of an autocorrelation between the level and variance of these indicators. We discuss the implications of this autocorrelation below. Correlations and standard deviations of our focal constructs are displayed in Table 2.

---

Insert Table 2 about here
---
ANALYSIS

Schneider et al., (2002) analyzed interaction effects between climate level and variance. However, as Lindell and Brandt (2000) and Bliese and Halverssson (1998) have argued, an inverted U-shaped relationship between level (mean) and variance (standard deviation) of perceptual constructs may in some instances be mathematically expected. Therefore, for example, Dineen et al. (2007) used the squared term of both the level and variance as additional controls for potential curvilinear relationships. However, with regards to latent variable modeling, adding numerous latent interaction terms can frequently cause convergence problems due to increasing multicollinearity between the variables. What is more, even if there is a mathematically expected curvilinear relationship between level and variance, in practice this may not always be the case as distributions of data often are skewed towards either the higher or lower ends of the Likert scales. Because of theoretical unclarity and absence of empirical evidence for an inverse U-shaped relationship between the PA process and employee obligations level and variance, we explored our particular data to test what the relationship in fact is. We thus analyzed the relationships between variance and both the average level and the squared average level of each construct8. Having PA process variance as the dependent variable the level of the PA process the (linear) relationship was significant (β = -.517, p = .000) whereas for the squared PA process construct the (curvilinear) relationship was not (β = -.161, p = .077). Similarly, the (linear) employee obligations construct was significantly related to employee obligations variance (β = -.607, p = .000) whereas the squared term was not (β = -.025, p = .751). This indicates that the most appropriate control in our subsequent analyses is the linear relationship (cf. Schneider et al., 2002). Based on these findings we proceeded with the main analysis using the average level or variance as a linear control to rule out variance due to autocorrelation. The results of these

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8 Due to negative residual variances, the first factor loading of each factor was estimated freely rather than fixed at 1.
models are presented below. We report unstandardized estimates with two-tailed significance levels.

**Model 1**

In Model 1 we examined the effect of PA process level and variance on obligations level. Hypothesis 1 predicted a positive relationship between the PA process level and employee obligations level. Controlling for PA variance and obligations variance, this hypothesis is supported ($\beta = .332$, $p = .000$).

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**Model 2**

In Model 2 we assessed the effects of PA process level and variance on obligations variance. Hypothesis 2 predicted a negative relationship between the PA process level and employee obligations variance. While the bivariate correlation (Table 2) is in the expected direction, controlling for both employee obligations level and PA process variance, Model 1 offers no support for this hypothesis ($\beta = .080$, $p = .400$). Hypothesis 3 however, is supported in that PA process variance is positively related to obligations variance when controlling for PA process level and obligations level ($\beta = .417$, $p = .010$).

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**Model 3**

In model 3 we tested hypothesis 4 i.e. a moderating effect of PA process variance on the relationship between PA process level and obligations level. Controlling for obligations

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9 $\chi^2 (47) = 68.90$, CFI = .96, TLI = .95, RMSEA = .067

10 $\chi^2 (46) = 62.23$, CFI = .97, TLI = .96, RMSEA = .058

11 $R^2$ and fit indices not available for numerical integration models with latent variables.
variance model 3 confirms a negative relationship in support of our hypothesis ($\beta = -1.025$, $p = .011$), meaning that the lower the variance in the PA process is, the stronger is the relationship between the levels of the PA process and employee obligations.

While the constitutive terms in interaction analyses are not interpretable as average linear relationships (Brambor, Clark, & Golder, 2006), to examine the nature of the moderation we plotted the terms one standard deviation above and below the mean (Figure 6). This plot indicates, first, that PA process level is more strongly related to employee obligations under conditions of low variance and, second, that the highest level of obligations is eventually reached when employees rate the PA process highly and employees share this perception of the PA process. Conversely, the lowest level of obligations is reached when both the PA process level and variance are low, that is, when employees have a shared understanding that the PA process is weak.

Model 4

In model 4 we tested the moderating effect of the PA process level on the relationship between the PA process variance and employee obligations variance (Hypothesis 5). Controlling for the employee obligations level the results show no support for this hypothesis ($\beta = -.180$, $p = .599$).

\[12\] Latent factor scores are centred around 0. Trendlines added. 
\[13\] $R^2$ and fit indices not available for numerical integration models with latent variables.
DISCUSSION

The primary aim of this study was to further research on the HRM process (Bowen & Ostroff, 2004) by empirically examining the relationships between mean-levels and variance in the HRM process and employee obligations. The present study also extends previous research on the effects of climate level and variance pursued in research on climate strength (Dineen et al., 2007; Gonzalez-Roma et al., 2002; Dineen et al., 2007) by focusing on antecedents of both the mean level and the variance in outcomes. Our analyses have shown that both the HRM process level and variance are related to both the level and the variance in outcomes. Below we discuss several implications of these findings.

Firstly, the confirmed positive relationship between PA process level and obligations level indicates that the PA process, as hypothesized, is likely to influence the formation of psychological contracts in positive and important ways, as suggested by several authors (e.g. Ostroff & Bowen, 2000; Wright & Nishii, 2007). In broad terms this finding also confirms Bowen and Ostroff’s (2004) theorization about the importance of employees’ attributions of causal significance to the HRM practices.

Secondly, the positive relationship between PA variance and obligations variance indicates that when employees share their attributions of causal importance to the HRM practices it is likely that a shared understanding of the content of the psychological contract will emerge, despite the subjective nature of this concept as it has been conceived in prior research (Rousseau, 1995).

Thirdly, the confirmed negative moderating effect of the PA process variance on the relationship between PA process level and the level of obligations is consistent with a situational strength related social influence effect of shared perceptions of the PA process, as implied by Bowen and Ostroff’s (2004) theorization. Specifically, the analysis (Figure 5) clearly indicates that the effect of the PA process level is stronger under conditions of low
variance, while it has only a marginal effect under conditions of high variance. In our data the interaction effect becomes most visible when the PA process is low. Hence, the most detrimental situation in the sampled organizations occurs when the PA process level and variance are both low, a condition not really considered by Bowen and Ostroff (2004). In other words, the level of employee obligations will be lowest in the group of employees where there is agreement among employees that the PA process has little causal significance. This fact, and the fact that we did not detect a corresponding effect of shared and high levels of the HRM process, is likely to be a result of the sampled organizations in general not having achieved very high and consistent implementation of the HRM practices. This is also visible in the rather low ICC(1) intraclass correlation of the HRM process construct suggesting that the HRM process is rather inconsistently perceived in the surveyed organizations. Given that also prior multilevel HRM research has generally found that on average, the distribution of variance tends to be strongly tilted towards the individual level and only about 20% of the variance resides at the organization or group level of analysis (e.g. Takeuchi et al., 2007, 2009) this finding is likely to be generalizable. Thus, overall multilevel research on HRM indicates that few organizations have capitalized on the potential influence HRM may have on group and organizational level outcomes (cf. Becker and Huselid, 2006).

Based on the present study, the primary challenge for organizations appears to be to achieve a collectively high and consistently perceived HRM implementation. This study indicates that, in order to improve the organizational climate, and hence achieve positive collective attitudinal and behavioral responses to HRM, it is important for organizations not only to focus on designing and adopting HRM practices that on average are viewed positively by employees, but to direct effort towards communicating and instilling the practices in the organization so that they are consistently recognized and understood by all employees within the organization. The situational strength effect of shared perceptions of the HRM system and
the HRM process on organizational climate is likely to be an important mechanism through which HRM systems can influence positive collective outcomes such as psychological contracts climates. As illustrated in this study, the HRM process can play a significant role in the formation of psychological contracts at both the individual as well as the collective level of analysis.

Limitations

The findings and implications presented above need to be viewed in the light of a number of limitations. Firstly, as we did not tap into all nine process features proposed in Bowen and Ostroff’s (2004) theorization. In combination with the fact that we only examined the effect of the HRM process in terms of the PA process and not an entire system of HRM practices, our estimates are likely to be somewhat conservative. An important line of future research is therefore to develop measures for and examine the effect of all HRM process features as well as their relative importance (Bowen & Ostroff, 2004, p. 216). Secondly, as we applied a cross-sectional design we could not rule out the possibility of common method bias and/or spurious correlation between the independent and dependent variables. Hence, longitudinal research designs would be highly valuable for future development of the HRM process perspective. Simultaneously however, such a research endeavor is bound to be highly challenging since the aggregation of employee reports of HRM and outcomes requires the type of large samples used in this study with groups remaining relatively static over time. Thirdly, our research design yielded quite low intraclass correlations, that is, our sample consisted of relatively heterogeneous groups. While sufficient within group variance constitutes a central criteria for the use of dispersion models (Meade & Eby, 2007; Schneider et al., 2002) this may also be an indication that the surveyed organizations, on average, have not achieved consistent implementation of HRM within different work-groups. As a
consequence, future research may identify organizations with stronger HRM climates to compare the findings present in this study.

Conclusion

A secondary aim of the present study was to contribute to theory development concerning the micro-level foundations (Felin & Foss, 2005; Felin & Hesterly, 2007) and the related notion of emergence of strong organizational climates (Meyer et al., 2010; Schneider et al., 2002). Therefore, beyond providing one of the first studies examining the validity of Bowen and Ostroff’s (2004) theorization, the present study has implications for future research in multilevel HRM research. This is important since the question of how phenomena translate or emerge from one level of analysis to another is not well known although it is widely acknowledged that organizational phenomena can (and often do) occur at multiple levels of analysis simultaneously, (Chan, 1998; Kozlowski & Klein, 2000; Felin & Hesterly, 2007). Specifically, by explicitly focusing on variance as a substantive construct, it becomes possible to analyze the antecedents and outcomes of sharedness and conceptualize it as the extent to which lower level variables emerge at a higher level of analysis.

Prior multilevel research in the field of HRM however, has primarily focused on HRM at an aggregated level only (e.g. Kehoe & Wright, 2010; Snape & Redman, 2010; Takeuchi et al., 2007), thereby treating lower-level or within-group variation “little more than a statistical hurdle in the process of establishing a rationale for aggregation” Meade & Eby, 2007: 76). While these contributions are laudable, HRM and organizational scholars increasingly argue against the sole reliance on methodological collectivism, that is, viewing collective phenomena as social facts determining outcomes through downward causation, and call for research attention on the emergent effects of individual heterogeneity (Minbaeva, Foss, & Snell, 2009; Felin & Hesterly, 2007) and interaction (Felin & Foss, 2005). The
challenge lies in understanding how collective phenomena “emerge from, individual team members’ experiences, attitudes, perceptions, values, cognitions, or behaviors” (Klein & Kozlowski (2000: 217). As Morgeson and Hofmann (1999: 251) argue, “To understand how collective structure emerges, one must first understand the components of collective action”. Bowen and Ostroff’s (2004) theorization explicitly focuses on the components of situations, that is, social HRM cues that reduce the effect of individual heterogeneity. This ‘restriction in variance’ hypothesis in Bowen and Ostroff’s (2004) model, implies that organizational climates can emerge from psychological climates as individuals within organizations develop high and shared cognitions about what the organization is like (cf. Schneider, 2000; cf. Ostroff & Bowen, 2000). In this study, we illustrated that both the mean level and variance of these cognitions have significant implications for collective outcomes.
REFERENCES


TABLES

Table 1 – Descriptive statistics

<table>
<thead>
<tr>
<th>Individuals</th>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 930</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>74.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td>Missing</td>
<td>0.5</td>
</tr>
<tr>
<td>Tenure in the MNC (years)</td>
<td>0-6 month</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>7-11 month</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>1-2 years</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>3-5 years</td>
<td>24.0</td>
</tr>
<tr>
<td></td>
<td>6-10 years</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>11-15 years</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>16-20 years</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>Over 20 years</td>
<td>14.1</td>
</tr>
<tr>
<td>Function</td>
<td>General Management</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>Manufacturing/Production/Operations</td>
<td>18.3</td>
</tr>
<tr>
<td></td>
<td>Sourcing/Purchasing/Logistics</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td>Research &amp; Development</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>Sales/Marketing/Communications/PR</td>
<td>19.4</td>
</tr>
<tr>
<td></td>
<td>Finance/Accounting</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>14.7</td>
</tr>
<tr>
<td>Reporting to General Manager</td>
<td>Yes</td>
<td>40.2</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>59.8</td>
</tr>
<tr>
<td>Nr of subordinates</td>
<td>0 (none)</td>
<td>33.4</td>
</tr>
<tr>
<td></td>
<td>1-4</td>
<td>19.6</td>
</tr>
<tr>
<td></td>
<td>5 or more</td>
<td>47.0</td>
</tr>
</tbody>
</table>

Table 2 – Correlation table

<table>
<thead>
<tr>
<th>Correlations</th>
<th>S.d.</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PA process level</td>
<td>.456</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. PA process variance</td>
<td>.247</td>
<td>-.453</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Obligations level</td>
<td>.462</td>
<td>.458</td>
<td>-.069</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Obligations variance</td>
<td>.362</td>
<td>-.277</td>
<td>.276</td>
<td>-.517</td>
<td>1</td>
</tr>
</tbody>
</table>

14 Latent variables in mplus are centered around 0, therefore we do not display mean values.
FIGURES

Figure 1 – Hypothesized framework

Figure 2 – Model 1
Figure 3 – Model 2

Visibility SD → HRM process level → Obligations level

Visibility SD → HRM process variance → Obligations variance

Skills SD → Obligations level

Performance SD → Obligations level

R² = .331***

Figure 4 – Model 3

Visibility SD → PA process level → Obligations level

Visibility SD → PA process variance → Obligations variance

Skills SD → Obligations level

Performance SD → Obligations level

R² = .331***
Figure 5 – Interaction analysis

Figure 6 – Model 4
APPENDICES

Appendix 1 – The HRM process construct
To what extent do you agree with the following statements concerning the performance management practices used for you and your colleagues in similar positions in your local unit/subsidiary? (1 = Do not agree, 7 = Agree entirely)

<table>
<thead>
<tr>
<th>Visibility (Distinctiveness)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is a lot of emphasis on the performance appraisal process in this unit</td>
</tr>
<tr>
<td>2. I often think about the performance appraisal process in this unit</td>
</tr>
<tr>
<td>3. The performance appraisal process plays a highly visible role in this unit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Validity (Consistency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The performance appraisal process really helps me understand how I perform in my job</td>
</tr>
<tr>
<td>2. The performance appraisal process clearly helps me focus on important behaviours</td>
</tr>
<tr>
<td>3. The performance appraisal process really helps me deliver desired results</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedural justice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The performance appraisal process is applied without any bias (i.e. in a fair way)</td>
</tr>
<tr>
<td>2. I have enough influence over the decisions made in the performance appraisal process</td>
</tr>
<tr>
<td>3. The performance appraisal process is carried out based on accurate information (about my performance and factors influencing it)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distributive justice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On the whole, the outcomes of the performance appraisal process (rewards, career and development opportunities) reflect fairly my contribution to the organization</td>
</tr>
<tr>
<td>2. On the whole, the outcomes of the performance appraisal process (rewards, career and development opportunities) reflect fairly the effort I have put into my work</td>
</tr>
<tr>
<td>3. On the whole, the outcomes of the performance appraisal process (rewards, career and development opportunities) are fair (justified), given my performance</td>
</tr>
</tbody>
</table>

Appendix 2 – Employee obligations
To what extent have you made the following commitments to your employer (your local unit/subsidiary that you work for)? (1 = Do not agree, 7 = Agree entirely)

<table>
<thead>
<tr>
<th>Performance obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To accept increasingly challenging performance demands</td>
</tr>
<tr>
<td>2. To adjust to changing performance demands</td>
</tr>
<tr>
<td>3. To accept new and different performance requirements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skills obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To seek out developmental opportunities that enhance my value to my employer</td>
</tr>
<tr>
<td>2. To build skills to increase my value to my employer</td>
</tr>
<tr>
<td>3. To make myself increasingly valuable to my employer</td>
</tr>
</tbody>
</table>
APPENDIX 4 – ESSAY 4

A TWO-LEVEL MEDIATION TEST OF THE RELATIONSHIPS BETWEEN THE HRM PROCESS, EMPLOYEE PERFORMANCE AND ORGANIZATIONAL PERFORMANCE

Unpublished working paper

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ABSTRACT

Research on the HRM-performance link is increasingly focusing on multi-level research designs and methods to uncover the mechanisms of HRM’s influence. Bowen and Ostroff’s (2004) HRM process theorization provides the first explicitly multilevel perspective on such mechanisms. The present study derives core propositions from this theorization, identifying two different mechanisms of social influence induced by the HRM process. The first concerns a causal attribution-based social information processing effect on the conformity of employee performance, the second an identity-based influence on the average group-level performance. Based on this, hypothesized relationships between the HRM process, employee performance and organizational performance are tested in a multilevel structural equation (SEM) model based on a sample from the consultancy industry. The analysis provides support for a significant indirect path from the HRM process to organizational performance. The paper ends by identifying important avenues for future research on the HRM process.

Keywords: HRM process, social influence, employee performance, multilevel analysis
INTRODUCTION

A driving force for research on human resource management (HRM) has been the notion that human resources and their management can constitute a competitive advantage for organizations (Barney & Wright, 1998). There are, however, many open issues concerning this proposition, the most important being how HRM may create value (Becker & Huselid, 2006; Boxall & Macky, 2009; Grant & Shields, 2002; Paauwe, 2009; Wall & Wood, 2005). Extant research on the HRM-performance link has focused on the nature and influence of HRM content, that is, the specific practices through which organizations can improve the acquisition, development, retention and utilization of their workforce (cf. Bowen & Ostroff, 2004; Boselie, Dietz & Boon, 2005). However, scholars have acknowledged that the mere existence or even extent of implementation (e.g. Huselid, 1995; Collins and Smith, 2006) of HRM content on its own is unlikely to fully account for the mechanisms of HRM’s influence (Wright & Nishii, 2007). Hence, there is a need to focus on the qualities of the implementation and delivery of HRM content, in particular as perceived by employees (Boselie et al., 2005; Bowen and Ostroff, 2004; Gerhart, 2005; Wright & Haggerty, 2005).

Consequently, to shed further light on the HRM-performance relationship, research is increasingly adopting multilevel research designs, measuring organizational HRM practices by multiple employees’ perceptions (e.g. Takeuchi, Chen & Lepak, 2007; Wright, Gardner, Moynihan and Allen, 2005). Through this focus, researchers have increasingly acknowledged that perceptions of HRM differ among employees to a surprisingly large extent (Wright & Nishii, 2007). On average, studies have thus far found that about 80% of the variance in perceptions of HRM resides among employees within groups whereas only about 20% of the variance is found between groups (e.g. Takeuchi et al., 2007). This evidence renders the HRM-performance link all the more interesting, as it indicates that few organizations have accomplished consistently perceived implementation of HRM. For researchers, this fact

Bowen and Ostroff’s (2004) multilevel HRM process theorization is particularly interesting from this perspective as it focuses on employee-perceived features of the HRM process that should foster strong collective climates in the form of employee understandings of expected behaviors as well as employees’ compliance with these expectations. Building on Kelley’s (1967) attribution theory, they propose a causal attribution theorization of the mechanisms through which HRM should influence such collective climates, which in turn should influence organizational performance. In essence, the theorization implies that the effect of a system of HRM practices is dependent on employees’ attributions of causal significance to the practices, that is, the extent to which HRM practices are seen as ‘causing’ organizational events. This, Bowen and Ostroff (2004) refer to as the HRM process. Specifically, the more causal significance employees attribute to the HRM system, the stronger should be the effect of the practices on employee responses. Bowen and Ostroff (2004) explain this in terms of a social influence situation where employees respond to HRM practices in similar ways. Uniformity in attitudinal and behavioral responses in turn, should increase social pressure to respond positively to expected behaviors.

In this way the HRM process theorization holds great promise for shedding more light on the mechanisms through which HRM practices influence individual attitudes and behaviors and the conditions under which individual attitudes and behaviors can be linked to group- and organizational-level outcomes. As Bowen and Ostroff (2004) point out, theory building within HRM seriously lags behind the intuitive acceptance of the HRM-performance and HRM-climate linkages that characterize the field. To date however, few studies have
attempted to more thoroughly apply it empirically (for exceptions see Sanders, Dorenbosch & De Reuver, 2008; Li, Frenkel, & Sanders, 2010).

In the present study we test Bowen and Ostroff’s (2004) propositions concerning a social influence effect of HRM on employee and further organizational performance. Specifically, in a sample of consultancy organizations, we test to what extent attributions of causal significance to the HRM system influence individual and collective employee performance and to what extent uniformity in employee performance influences the average of employee performance within the observed groups of consultants. Finally, we examine the mediating effect of collective employee performance on organizational performance and identify key avenues for future research on the HRM process.

THEORY

The HRM process theorization – an overview and the present focus

One reason for the scarcity of prior research on Bowen and Ostroff’s (2004) HRM process theorization may lie in the challenges associated with its sheer complexity, another in its specific multilevel nature. Therefore, we begin by clarifying its overall causal logic before proceeding with hypothesis development.

Kelley’s (1967) attribution theory provides the foundation of Bowen and Ostroff’s (2004) theoretical reasoning. In trying to explain the occurrence of an event, an individual’s attribution of causal significance to a particular source candidate is, according to Kelley (1967), dependent on the extent to which the candidate’s behavior is characterized by distinctiveness, consistency, and there is consensus about that candidate’s causal significance. Based on this, Bowen and Ostroff (2004) devote the main part of their paper to identifying features of the HRM system, which should influence HRM system distinctiveness, consistency and consensus. These features reflect what Bowen and Ostroff (2004) term the HRM process. Importantly, these HRM process features are not defined as objective
characteristics of an HRM system but rather as subjectively “perceived by employees”. This conceptualization deviates somewhat from Kelley’s original theory according to which the features influence employees’ causal attributions. Bowen and Ostroff’s (2004) emphasis on employee perceptions however, implies that the HRM process itself is defined by employees’ attributions. Therefore, the terms “HRM process” and “causal attributions to the HRM system” will henceforth be used interchangeably.

Given the large number of potentially important HRM process features, the lack of knowledge regarding their relative importance as well as the lack of existing measures, the present paper focuses on a subset of them. Firstly, the understandability and the relevance of the HRM practices, which should influence their distinctiveness (Bowen and Ostroff, 2004, pp. 208-209). Secondly, their validity and stability over time, which should influence their perceived consistency (Bowen and Ostroff, 2004, p. 211). Going beyond Kelley (1967), Bowen and Ostroff (2004) argue that the HRM process translates into the signaling strength of the practices, i.e. the strength of the signals the practices send to employees about expected behaviors. Under a strong HRM process, i.e. when the HRM process features are rated highly, HRM practices send strong signals that engender both high individual and, through social influence, uniform and high collective understandings of expected behaviors as well as positive behavioral responses that ultimately should influence organizational performance.

In summary, the implications of Bowen and Ostroff’s (2004) theory for the mechanisms through which the HRM systems influence individual and collective behaviors are as follows: The HRM process should, through strong signaling effects, have a primary individual level impact on employees’ understanding of expected behaviors, and their behavioral responses to these expectations. An important measure of such behavioral compliance is arguably employee performance. Through social influence effects generated by strong causal attributions and uniform responses, the HRM process should impact on
collective employee performance. Thus, in the present paper we focus on the relationships between the HRM process, employee and organizational performance. Specifically, based on mechanisms of social influence, we test the extent to which both the within-group conformity and average rating of employee performance explain the expected relationship between the HRM process and organizational performance. This chain of effects is broadly in line with Becker and Huselid’s (1998) model of HRM’s influence, albeit now justified by a novel understanding of the nature of the independent variable and the mechanisms involved. We depict the hypothesized relationships in Figure 1 before elaborating on the specific mechanisms in the following section.

HYPOTHESES

A number of prior multilevel HRM studies have attributed the phenomenon of HRM to a single aggregated level of analysis (see e.g. Sun, Aryee, & Law, 2007; Takeuchi et al., 2007). Other studies have explicitly focused on the contextual (downward) effects (Raudenbusch & Bryk, 2002); that is, the influence of higher level HRM practices on lower level outcomes (see e.g. Kehoe & Wright, 2010; Snape & Redman, 2010; Takeuchi et al., 2009). While the particular focus on contextual effects of HRM is in line with the general notion that “the larger context within which lower-level processes are nested generally exerts a greater downward influence than what lower-level variables exert on the higher-level context” (Mathieu & Chen, 2010 p. 7; cf. Meyer, Dalal, & Hermida, 2010 p. 122), we note that emergent (upward) effects are also likely to exist (Raudenbusch & Bryk, 2002; Griffin, 1997). In fact, this upward direction of causality represents an important part of Bowen and Ostroff’s (2004) theorization. Specifically, they argue that the HRM process can “foster the emergence of organizational climate (collective perceptions) from psychological climates (individual-
level perceptions” (p. 213). Therefore, the key question of their theorization concerns the mechanisms and strength of this upward influence.

**HRM process and individual employee performance**

The foundation of the emergent collective level effects of the HRM process thus lies at the individual level of analysis. In fact, Kelley’s (1967) theory of causal attribution is an individual level theory and Bowen and Ostroff (2004) explicitly argue that individual level perceptions of the HRM process “will have a significant association with individual attitudes and behaviors” (p. 213). We argue that employee performance represents an important type of behavioral outcome of the implied individual level effect of the HRM process. Thus, to test the individual-level nomological validity of the theorization we put forth our first hypothesis as follows:

*Hypothesis 1: Individual-level ratings of the HRM process are positively related to individual level employee performance.*

**HRM process and collective employee performance: Social influence**

Moving to the collective level of analysis, one of the key elements of Bowen and Ostroff’s (2004) theorization involves the following propositions: While employees may subjectively interpret (the messages of) organizational HRM practices (Bowen & Ostroff, 2004, p. 206; cf. Wright & Nishii, 2008), the proposed process features should not only, in line with Kelley (1967), influence individuals’ responses but also foster collective responses. Collective attributions, i.e. the collective-level HRM process, should according to Bowen and Ostroff (2004) foster a strong situation in terms of a shared collective understanding of expected behaviors and motivation to respond positively to these expectations.

While many different propositions may be derived from their argumentation, in the present study we focus on the specific argument concerning high scores on the HRM process:
“an HRM system high in distinctiveness, consistency, and consensus should enhance clarity of interpretation in the setting, thereby allowing for similar “cognitive maps” or “causal maps” to develop among people, as well as to create an “influence situation” whereby individuals yield to the message and understand the appropriate ways of behaving” (p. 213). The implied idea is that social contexts in the form of strong situations matter in producing additional (non-redundant) value through social influence, and that a high within-group rating of the HRM process should create such a situation (cf. powerful effects in Mischel, 1973). The core of Bowen and Ostroff’s (2004) theorization thus implies that in the case of high within-group attributions of causal significance to the HRM system, i.e. high ratings on the HRM process features, the strength of the messages due to social influence and social information processing will be amplified and more strongly yielded to as compared to only individual-level relationships across groups.

Our first interpretation of this social influence-based argument with reference to employee performance is the following: the relationship between within-group average ratings of the HRM process and average employee behavioral responses should be stronger than the relationship between employee’s behavioral responses and HRM process ratings at the individual level. This should be the case despite the inevitable noise introduced by subjective interpretations of the HRM process due to individual dispositions. In fact, this hypothesis forms the foundation of the idea of the HRM process contributing to strong situations. Thus, as a first test of this suggested social influence effect of high attributions of causal significance to the HRM system we formulate the following hypothesis:

*Hypothesis 2a:* the average within-group rating of the HRM process is positively related to average within-group employee performance, and this relationship will be stronger than the individual-level relationship between the HRM process and employee performance.
While the above hypothesis can be derived from Bowen and Ostroff’s (2004) reasoning, the exact mechanisms, i.e. what the social influence-based argument more precisely involves, is less clear in their theorization. First, Bowen and Ostroff (2004) explicitly argue that the HRM process should “allow for similar ‘cognitive maps’” to develop and induce “compliance and conformity through social influence” (p. 213). Thus, the second proposition we derive from their suggested social influence effect is that within-group average ratings of the HRM process should create within-group conformity in employee behavioral responses. While empirical support for Bowen and Ostroff’s (2004) argument is scarce, Ziegler, Diehn, Zigon and Fett. (2004) found that the distinctiveness and consistency of information fosters increased message elaboration. Increased message elaboration is in turn likely to increase social information processing which leads to an individual’s “identification with other people” and the “assimilation of information from others” (Taifel, 1968, p. 332). Based on the above we hypothesize that:

Hypothesis 2b: the average within-group rating of the HRM process is positively related to within-group conformity in employee performance

Support for the above hypothesis is an important part of testing Bowen and Ostroff’s (2004) theorization as they explicitly argue that the social influence situation created by shared understanding and shared responses should impact on the degree to which employees collectively yield to the HRM signals (p.213). This may come across as somewhat counterintuitive, and Bowen and Ostroff (2004) do not really elaborate on the causal logic of the social influence involved here. This effect is however crucial in their theorization. The social influence-based argument is the only justification that specifically warrants the extension of Kelley’s (1967) attribution theory to the collective level of analysis and the related argument that the HRM process can create situational strength with non-redundant effects over and above a pure aggregation of individual effects.
Building on Alvesson and Kärreman’s (2007) interpretation of the ceremonial nature of the HRM process, we offer an explanation of how this reasoning can be understood and justified. Essentially, the uniform behavioral responses created by strong HRM signals are likely to foster group-level effects such that employees will be further stimulated to yield to expectations and improve their performance. According to Alvesson and Kärreman’s (2007) interpretation, higher degrees of shared understandings of performance requirements are likely to introduce an element of additional performance pressures and competition among employees. Specifically, they argue that the result of strong HRM signals will result in “aspirational control” among employees, which increases their tendency to comply with expected behaviors (Alvesson and Kärreman 2007, p. 720). Such identity-based aspirational control is bound to lead to increasing competition among colleagues, most of whom are likely to aspire to preserve their identity-based “career idea[s]” (p. 720). In fact, such effects may represent a key component of the impact of notoriously strong HRM systems and tough performance cultures in companies’ like GE (Bartlett and McLean, 2005) and Microsoft (Bartlett, 2001). Thus, our argument is that a strong HRM process should lead to a shared understanding of performance requirements, increasing the conformity of behavioral outcomes. This very effect of conformity is then likely to increase performance pressures and lead to collectively higher performance levels.

Contradicting this line of reasoning, it could be argued that there are symmetrical situations of weak signals, i.e. uniform low responses where employees prompt each other to low performance, in which case there should be no linear effect of the within-group conformity of responses on the average level of responses. In line with this, there is an expected mathematically true inverse U-shaped relationship between the level and the variance of any variable (Bliese and Halversson, 1998; Lindell and Brandt, 2000).
According to Bowen and Ostroff (2004) however, a weak HRM process should lead to significant variance in employee responses within groups and therefore not provide a comparable negative social influence effect. Thus, based on the argument above that a strong HRM process is likely to lead to uniform responses, and thereby to the creation of an identity-based competitive performance culture, we set forth the following hypothesis:

_Hypothesis 2c: within-group conformity in employee performance is positively related to the within-group average of employee performance and this is likely to partially mediate the relationship between the latter and the HRM process._

**HRM process and organizational performance**

The ultimate question of the nomological validity of the HRM process theorization concerns the extent to which the above hypothesized within-group responses to the HRM process can explain the latter’s effect on organizational performance. Bowen and Ostroff (2004) posit that a strong HRM process “can enhance organizational performance owing to shared meanings in promotion of collective responses that are consistent with organizational strategic goals” (p. 213). Based on the argumentation above, and specifically our elaborations of the conformity enhancing social information processing effect of the HRM process and the consequent identity-based social influence effect of aspirational control, we should find the following: firstly, there should be a significant relationship between the average within-group ratings of the HRM process and organizational performance. Secondly, there should be a significant path of relationships from the average within-group ratings of the HRM process through within-group conformity of employee performance that it engenders (Hypothesis 2b), and further through the within-group average of employee performance (Hypothesis 2a), to organizational performance. We thus put forward the following hypotheses:

_Hypothesis 4: there is a significant relationship between the average within-group rating of the HRM process and organizational performance._
Hypothesis 5: the relationship between the average within-group rating of the HRM process and organizational performance will be sequentially mediated through within-group conformity in employee performance, and further through the within-group average of employee performance.

METHODS

The data for this study was collected from the management and IT consultancy industries in Sweden (roughly 80% of the observations) and Finland (roughly 20%). These types of companies are highly dependent on their employees’ contributions (Swart, 2007; Skaggs & Youndt, 2004) and thus offer favorable conditions for investment in HRM. Having respondents from only one industry helped us to control for possible industry effects. We identified 120 management and IT consultancy companies employing at least 20 consultants. With the help of the CEO (our first contact in each company) one senior consultant in 112 organizations agreed to participate in the study. Each senior consultant was asked to choose three subordinate consultants whose work performance he/she was familiar with. Questionnaires were then sent both to the senior consultants, who evaluated the subordinate consultants’ and organizational performance, and the subordinate consultants who responded to questions related to their perceptions of the company’s HRM system. Confidentiality was guaranteed to all parties, and procedures were in place that enabled us to match the subordinates’ responses with the respective individual performance evaluations obtained from the senior consultants. We obtained the requested performance data from the senior consultant together with at least one subordinate consultant’s responses from 62 companies. The overall number of responding subordinate consultants was 164. We used list-wise deletion on all observations missing two or more items in a construct. The effective sample comprised 147 observations related to subordinate consultants spread out among 54 companies. This amounted to 45% of the 120 contacted organizations, and 41% of the targeted three subordinate consultants in each of them.

15 In this paper we assume that the groups of employees we have sampled are representative of the organization both in their perceptions of the organizational HRM practices and their performance.
The questionnaire was administered in English in the two countries mentioned above where most people in the type of organization in question are fluent in the language. We conducted a pilot study in one Finnish and two Swedish consultancy firms, one of the researchers being present while, in each firm, one manager and three consultants filled out the questionnaire. We subsequently made some revisions to it. All the items were measured on Likert scales ranging from one to seven (1: “Strongly disagree”, 7: “Strongly agree”).

*Operationalization*

*HRM process.* (Subordinate consultant perceptions of HRM). There exists no validated measurement instrument for the HRM process but Bowen and Ostroff (2004) suggest listing HRM practices and asking employees to rate their process features (pp. 216-217). In the present study the HRM process was measured for each of the following practices: selection, socialization, performance appraisal, training and development, communication, compensation, autonomy and involvement. These practices (HRM content) are in line with those included in prior research on HRM (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Boselie et al., 2005). We measured the following HRM process features of each of the practices: their perceived understandability and relevance (fostering system distinctiveness) and validity and stability (fostering system consistency) (Bowen and Ostroff, 2004).

With regards to understandability Bowen and Ostroff (2004) argue that: “Understandability of HRM content refers to a lack of ambiguity and ease of comprehension of HRM practice content” (p. 209). In line with this, to capture system understandability we asked consultants about the extent to which the company had made clear the specific objectives with each practice.

HRM system relevance “refers to whether the situation is defined in such a way that individuals see the situation as relevant to an important goal” (Bowen and Ostroff, 2004, p. 209). As the goals of different organizations and employees are likely to differ our
measurement instrument did not define an exact goal, against which to evaluate the purposefulness of HRM, but left it open to reflect the consultants’ subjective perceptions and attributions of purpose. Therefore, we asked the consultants to rate how relevant and/or meaningful they perceived each practice.¹⁶

Validity refers to the “consistency between what [the practices] purport to do and what they actually do” (Bowen and Ostroff, 2004, p. 211). To capture system validity we asked about the extent to which each of the practices supported the employee behaviors, competences and attitudes that the company demanded of their employees.

Finally, HRM stability refers to the extent to which the practices have been “in place a long time” (Bowen and Ostroff, 2004, p. 211). This process feature was measured, for each practice, by asking employees to rate the extent to which the company over several years had continued to emphasize its importance. All items are listed in Appendix A. Each process feature was measured with eight items (one for each practice) and these items were, in line with Bowen and Ostroff’s (2004) suggestions, used to create an additive scale for each feature. The Cronbach’s alpha for the scales was .85 for understanding, .71 for relevance .79 for validity, and .81 for stability.

In line with Bowen Ostroff’s (2004) argument that the strongest effects are likely to emerge when the HRM system exhibits both high distinctiveness and consistency (p. 213-214) we used these scales as composite factor indicators forming an overall latent construct of the HRM process (for these procedures, see e.g. Landis, Beal, & Tesluk, 2000).¹⁷

Individual employee performance. (Supervisor rating of subordinate consultants’ performance). We measured employee performance with four items, two reflecting employee productivity (efficiency and meeting deadlines) and two reflecting the quality of work (making errors and receiving customer complaints). The items correspond to the job

¹⁶ While not exactly synonyms these adjectives both refer to the purposefulness of something.
¹⁷ This study does not include measures of the third dimension of the HRM process (‘consensus’) in Bowen and Ostroff’s theorization of strong HRM. We return to this limitation in the discussion.
performance measure validated by Welbourne, Johnson and Erez (1998) and are listed in Appendix A. Each performance dimension was used as a composite scale forming a single latent construct of employee performance (see e.g. Landis et al., 2000). The Cronbach’s alpha was .77 for the productivity dimension and .71 for the quality dimension.

Average within-group employee performance. We conceptualized group-level employee performance as the average level of the above individual employee performance scale within each group.

Conformity of group-level employee performance. Building on previous research on dispersion models (e.g. Dineen, Noe, Shaw, Duffy, & Wiethoff, 2007; Chan, 1998; Schneider et al., 2002), we measured dispersion of employee performance as the within-group standard deviation of the two employee performance scales. For the sake of consistency however, we refer to this variable as conformity, reversing the signs of the analysis results.

Organizational performance. (Supervisor perceptions of organizational performance). We constructed a latent factor of perceived organizational performance using three items reflecting profitability, customer satisfaction and reputation for quality. All items are listed in Appendix A. While both objective and subjective organizational performance measures have been used in prior research on HRM (Guest, Conway, & Sheehan, 2003; Wall & Wood, 2005) recent findings suggest that subjective measures may be as valid as more objective ones (Wall, Michie, Patterson, Wood, Sheehan, Clegg, and West, 2004).

Controls. We used employee age and tenure in the organization at the individual level to control for individual heterogeneity in perceptions. At the organizational level we controlled for the size of the organization by calculating the natural logarithm of the number of employees in the organization.
By postulating differential relationships between variables at different levels of analysis Bowen and Ostroff’s (2004) theorization is closely linked to the challenge of dealing with hierarchical or nested data (Mathieu & Chen, 2010). Controlling for the effect of interdependencies within groups represents one type of issues that must be dealt with (see e.g. Bickel, 2007). More challenging however, is the fact that many relationships between constructs in organization studies are likely to occur at multiple levels simultaneously but, in line with Bowen and Ostroff’s (2004) theorization, potentially in different ways at different levels of analysis (Kozlowski & Klein, 2000). In principle, a relationship between two constructs may hold at multiple levels, at one-level only or may even have the opposite direction at another level of analysis (Mathieu & Chen, 2010). It is therefore important to ensure that “data analysis is made isomorphic with theoretical assertions” and to avoid fallacies of the wrong level (Dansereau, Cho, & Yammarino, 2006 p. 537), that is, erroneously attributing a theoretical construct or a relationship to a certain level when it in fact is at least partly attributable to another (cf. Zhang, Zyphur and Preacher, 2009). Given Bowen and Ostroff’s (2004) multilevel theorization, this is particularly relevant to pay attention to. To deal with the multilevel challenges involved we used Mplus statistical analysis (Muthén & Muthén, 1998-2007) and estimated a multilevel latent covariate model (MLC) allowing for simultaneous analysis of relationships at different levels (see Lüdtke, Marsh, Robitzsch, Trautwein, Asparouhov, and Muthén, 2008). This model accounts for error variance at both the individual and the group levels by estimating the within-group average as a latent variable that varies across groups, using individual observations as indicators. In the structural equation modeling (SEM) literature this is often referred to as a random intercept model where the variance in observed variables is decomposed into one latent variable accounting for the individual-level variance and one accounting for the group-level variance.
We refer to Lüdtke et al. (2008) for a detailed description of the precise estimation method but note that the advantage of the MLC procedure is that it produces less biased estimates than procedures that use observed group means (e.g. aggregation). As the MLC method corrects for unreliability at the between-level it is to be preferred over non-latent multilevel methods in small samples where the reliability of intraclass correlations (ICC2) tend to be low (Lüdtke et al., 2008).

We performed the analysis with missing data using available observations, assuming values were missing at random (Little & Rubin, 2002). The coverage of the covariance matrix displayed valid data entries above 98.0% all covariance patterns in the model. We modeled the HRM process and employee performance variables at the individual and group levels of analysis whereas the organizational performance measure was measured and modeled only at the group level. Figure 2 exhibits a two-level confirmatory factor analysis (CFA) which displays somewhat low albeit acceptable fit (χ²(52) = 86.00, CFI = .96, TLI = .94, RMSEA = .067, SRMR = .013). As is known, χ²- and RMSEA-fit statistics tend to be underestimated in small sample sizes (Kline, 2005). In this study this was also evident in that employee performance at the individual level and organizational performance at the group level did not display significant variance estimates. Therefore, we re-estimated the CFA using Bayesian analysis with Markov Chain Monte Carlo sampling to increase statistical power. While sparsely used in the social sciences, Bayesian analysis offers great potential for multilevel research with smaller sample sizes as estimates are obtained from a simulated posterior distribution (see Lynch, 2007 for an overview of the advantages of Bayesian statistics). Also, Bayesian analysis enables reliable estimation of the type of indirect mediating effects hypothesized above (hypothesis 2c and 5) (Yuan & MacKinnon, 2009). For ease of interpretation we used non-informative priors and report point estimates representing the median of the distribution (see e.g. Asparouhov & Muthén, 2010). P-values reflect the
proportion of the posterior distribution that is below zero. Bayesian estimation produced significant variance estimates of all constructs at both levels of analysis ($p < .001$). We report the results of the Bayesian CFA with standardized factor loadings in Figure 2\(^{18}\). Correlations and standard deviations of the latent variables are displayed in Table 1.

The intraclass correlations\(^{19}\) ICC(1) ranged from .49 to .50 and ICC(2) ranged from .72 to .73, which is above the .70 threshold suggested by Klein and Kozlowski (2000). The exceptionally high and balanced ICC(1) (cf. Allen, & Rosen 2007; Chen, Kirkman, Kanfer, Liao & Chuang, 2004; Kehoe & Wright, 2010; Takeuchi et al., 2007; Takeuchi et al., 2009) is ideal for multilevel analysis as unequal variances at different levels can favor findings at the level of analysis with more variance because of larger statistical power (Hitt, Beamish, Jackson & Mathieu, 2007). Hence, we conclude that our measures exhibit meaningful variance at the individual as well as the group level of analysis.

\[\text{-Insert Figure 2 about here-}\]

\[\text{-Insert Table 1 about here-}\]

**RESULTS**

The results of the full MLC model are displayed in Figure 3 with standardized estimates. We report the results from the full model with all hypothesized paths included below.

We first note that none of the control variables are significantly related to any of the intermediate or dependent variables. The results provide support for Hypothesis 1 predicting a positive relationship between individual perceptions of the HRM process and employee performance ($\beta = .181, p = .047$). Contrary to hypothesis 2a however, the within-group average rating of the HRM process was not significantly related to the within-group average

\[\text{18} \text{Unfortunately, fit statistics cannot be calculated for two-level analyzes under Bayesian estimation.}\]

\[\text{19} \text{Intraclass correlations:}\]

HRM process: ICC1 = .49, ICC2 = .72
Employee performance: ICC1 = .50, ICC2 = .73
of employee performance ($\beta = .194, p = .237$) (With the path from conformity included $\beta = -.197, p = .217$). Hypothesis 2b however, predicting a positive relationship between the average within-group rating of the HRM process and within-group conformity in employee performance was supported ($\beta = .398, p = .035$). Hypothesis 2c predicted that the within-group conformity of employee performance partially mediates the relationship between the average within-group rating of the HRM process and the within-group average of employee performance. As pointed out by Mathieu and Taylor (2006), mediation analysis requires that the relationships between the dependent and independent variables are significant before the mediating variable is entered. In our case failing to support Hypothesis 2a implies that Hypothesis 2c cannot be pursued as intended.

Mathieu and Taylor (2006) however, argue that despite the absence of a direct relationship it is possible to analyze the *indirect effect* of the independent variable on the dependent. This is increasingly becoming a recognized procedure, due to the fact that exogenous variables may cause confounding, suppression, and interactive effects that attenuate the direct relationship (see MacKinnon, Krull, & Lockwood, 2000). In such a case the model can only be reliably estimated with the indirect path specified (MacKinnon, Fairchild, and Fritz, 2007). Hence, we proceed to analyze the indirect effect of the within-group rating of the HRM process through within-group conformity of employee performance.

Analysis of the relationship between the within-group conformity of employee performance and the within-group average of this performance is positively significant ($\beta = .666, p = .002$). Further, a Bayesian analysis of the indirect effect indicates a total positively significant effect of the average within-group rating of the HRM process on the within-group average of employee performance through within-group conformity ($\beta = .161, p = .037$).20

In support of Hypothesis 4 the analysis also confirms a positive relationship between the HRM process and organizational performance ($\beta = .790, p = .005$). In Hypothesis 5 we

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20 Indirect effects are reported with unstandardized estimates.
predicted the entire group-level mediated path from the HRM process, through conformity in employee performance and further through the average of employee performance to organizational performance. Based on the previous argumentation we could not justify a mediated path and instead proceed to estimate the total indirect effect. The Bayesian analysis indicates a positively significant indirect path ($\beta = .174, p = .045$)\(^\text{21}\). We discuss the implications of these findings in the following section.

- Insert Figure 3 about here-

**DISCUSSION**

The primary aim of the present study was to provide one of the first critical tests of Bowen and Ostroff’s (2004) multilevel HRM process theorization. In order to do this, we derived and tested key individual- and group-level hypotheses about the relationships between the HRM process, employee performance and organizational performance. We specifically focused on the mechanisms of HRM’s influence on organizational performance in terms of our elaboration of the social influence effect of the HRM process.

In general, our results support our elaboration of the social influence effects of the HRM process, both in terms of its direct effect on social information processing leading to the conformity in responses and the identity-based social influence effect of such conformity on the degree of yielding to the HRM signals. Our analyses provided support for a positive relationship between individual perceptions of the HRM process and individual-level employee performance (Figure 3; individual-level analysis). This is in line with Bowen and Ostroff (2004) according to which individual-level interpretations of the HRM process “will have significant associations with individual attitudes and behaviors” (p. 213). However, similarly to previous HRM-employee performance research (Kuvaas, 2008; Peccei and Rosenthal, 2001; Stumpf, Doh and Tymon, 2010), the HRM process explains only relatively

\(^{21}\) Indirect effects are reported with unstandardized estimates.
marginal variance in employee performance ($R^2 = .066$), despite a comprehensive measure of HRM covering four process features of a wide range of HRM practices. This generally weak relationship may be due to the fact that performance expectations and evaluations are higher in firms that invest more in their HRM practices and the HRM process.

In contrast, we found no support for the hypothesized direct relationship between the within-group average rating of the HRM process and the within-group average of employee performance. In general, this result is in line with recent research finding only relatively weak or absent relationships both between HRM and employee performance (Kuvaas, 2008; Peccei and Rosenthal, 2001; Stumpf, Doh and Tymon, 2010), and between HRM and organizational level productivity (Datta et al., 2005; Guest et al., 2003; Sun et al., 2007; Way, 2002; Wright et al., 2005). In the context of Bowen and Ostroff’s (2004) theorization however, this finding was particularly unexpected since an effect of the HRM process on employee performance at the group level of analysis is one of the major implications of the HRM process theory.

In this vein, our finding clearly contradicts the theorization. Simultaneously however, we found a positive group-level relationship between the HRM process and the conformity in employee performance. Also, the entire chain of links from the HRM process through the employee performance outcomes to organizational performance was significant. As argued in the results section, it is possible that analysis of the relationship between the average within-group rating of the HRM process and average within-group employee performance may easily be contaminated by confounding, suppression or interactive effects, resulting from the within-group conformity variable. Especially since the level and variance of any variable are expected to correlate negatively (Bliese & Halversson, 1998; Lindell & Brandt, 2000). In practice, this would mean that the group-level relationship is harder to identify than the individual-level one. More research on the relative influence of the HRM
process on individual- and group-level responses is however needed to shed more light on this issue.

There may however be more to it. It may also have to do with the fact that the theoretical argument about the link between the individual level relationships and the group level ones in Bowen and Ostroff (2004) is not entirely clear. Although Bowen and Ostroff (2004) argue for both uniform and high group level effects of the HRM process, Kelley’s (1967) attribution theory, which forms the foundation of their theorization, essentially concerns the individual level of analysis. To some extent Bowen and Ostroff’s (2004) extension of the attribution theoretical arguments is intuitive, in the sense that individuals’ attributions of causal significance to the HRM system would add up to the group level. At the same time, it is likely that, as Bowen and Ostroff (2004) note, employees interpret the HRM system differently. In fact this is the main reason for Bowen and Ostroff (2004) trying to identify situational features of the HRM process that may foster uniform responses to the HRM system. However, with reference to Mathieu and Chen’s (2010) argument about the potential differences in relationships between constructs at different levels of analysis, there are still unresolved issues in the causal logic of the HRM process theorization. For example, Hogan (2009) argues that “‘situations’ only matter if they are perceived by the individuals in them. But those perceptions will be a function of the individuals’ personalities, which means that situations are defined by the personalities that they are supposed to influence” (p. 249). Thus, even attributions of causal significance are a function of individual characteristics interacting with the situation at hand. Therefore, the question of how relationships between situational contingencies, such as HRM process features, and employee responses at the individual level emerge at a higher level of analysis (Felin & Hesterly, 2007; Klein & Kozlowski 2000, Minbaeva, Foss, & Snell, 2009; Morgeson and Hofmann, 1999), and the dynamic interaction between individuals and situations (Meyer et al., 2010; cf. Felin & Foss,
(2005) warrants more research attention. As a consequence, the role of individual heterogeneity and the specific mechanisms of social influence and emergence of collective phenomena remain to be further explored.

Limitations

Our contribution needs to be viewed in the light of a number of limitations. First, our sample size is somewhat restricted although the number of groups do fall within prior recommendations for clustered data (50-100 clusters, Muthén, 1989) and the group size is relatively normal for small group research (Kenny, Mannetti, Pierro, Livi & Kashy, 2002). We also used latent group-mean centering in the multilevel structural equation model to obtain more reliable estimates at both levels of analysis (Lüdtke et al., 2008). Further, we used Bayesian analysis to increase the statistical power of the analysis (see e.g. Asparouhov & Muthén, 2010; Lynch, 2007). More significantly, although the use of independent measures of the HRM process on the one hand, and employee and organizational outcomes on the other is a strength of this study, we cannot rule out the risk of common method bias in the relationship between employee and organizational performance (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Simultaneously however, the risk of potential method bias should be reduced by the fact that these two variables are conceptually distinct concepts and the measures refer to different entities, that is, a single individual vs. the organization (cf. Nishii, Lepak, & Schneider, 2008).

Second, we conceptualized collective employee performance as an individual-level property emerging at the group level of analysis. While this allows testing of Bowen and Ostroff’s (2004) prediction of emergent effects of the HRM process on group-level employee behaviors, it is conceivable that employee performance directly operationalized at the work-group level would yield different results. For example, as a result of the dynamic interaction
between individuals and tasks in a group (Felin & Hesterly, 2007; Morgeson & Hofmann, 1999), work-group performance may be a qualitatively different phenomenon than the average of within-group individual employee performance. It is our belief however, that even interactive group-level phenomena, if theorized to influence organizational performance, would ultimately have to be linked also to individual employee behaviors.

Third, this study deployed a specific set of previously unvalidated measures for a limited set of the HRM process features identified by Bowen & Ostroff (2004). An important topic for future research is to develop and validate alternative multidimensional measures of the HRM process encompassing all three metafeatures and their process sub-features (Bowen & Ostroff, 2004, p. 216). Given the complexity of the theory in question this will inevitably involve initial explorative attempts with researchers over time striving towards a proper and as parsimonious as possible measurement instrument.

Fifth, our construct of the HRM process, including four HRM process features, was relatively narrow. It is conceivable that the included features in combination with other HRM process features identified by Bowen and Ostroff (2004) would reveal stronger relationships. In particular, we included no features that according to Bowen and Ostroff (2004) should influence the consensus about the HRM system.

Finally, in the present study we focused on Bowen and Ostroff’s (2004) main definition of the HRM process as the average within-group rating of the process features. It is however, also conceivable to define the HRM process in terms of the conformity/variance of employees’ attributions. However, the theorization quickly becomes highly complex to test when taking into account this conformity, involving several interaction effects between average within-group ratings and the within-group conformity of those ratings on corresponding outcomes. We elaborate on opportunities for future research with reference to conformity in employees causal attributions to the HRM system in the following section.
**Future research**

The HRM process theorization is both complex and rich and testing all hypotheses that can be derived from it is unlikely to fit within the scope of a single study. To further enhance research on this topic we wish to point towards two specific avenues for future research which, given the results of the present study, appear to be particularly important and interesting. Both are likely to increase our understanding of the emergence of situational strength (cf. Meyer et al., 2010).

The first alternative is to specifically focus on both the within-group average and the conformity of employees’ ratings of the HRM process (Bowen and Ostroff, 2004). While previous research has focused on the interaction effects of the average and the conformity of antecedents on substantive variables (e.g. Dinen et al., 2007; Li et al., 2010; Schneider et al., 2002), we note that Bowen and Ostroff’s (2004) theorization implies corresponding effects on both the average and conformity of the outcomes. This offers interesting future opportunities for research on the HRM process. However, with the inclusion of mediating variables, as in the present study, such analyses run the risk of quickly becoming highly complex, especially given the possibility that the average and variance of any variable may autocorrelate. To our knowledge this type of dispersion model (Meade & Eby, 2007), using conformity or variance also as a dependent variable, has not previously been pursued.

A second viable avenue for future research is to theorize and examine potential moderating effects of group-level ratings of the HRM process on the relationship between individual-level ratings of the HRM process and individual level responses (see e.g Chen, Mathieu, & Bliese, 2004). In multilevel SEM terms, this reflects a random slope model (see Preacher, Zyphur, & Zhang, 2010 for an illustration of the procedure). With regard to Bowen and Ostroff’s (2004) theorization, such moderating effects may be central to better
understanding how individual dispositions interact with group-level situational variables in influencing individual attitudes and behaviors (cf. Meyer et al., 2010; cf. Mischel & Shoda, 1998). Given our findings and arguments, individual responses to the HRM process may at least partly be a function of both individual dispositions (subjective perceptions of the process) and the group-level HRM process, rather than only a function of the HRM process.
REFERENCES


Table 1  
*Correlation table*\(^{22}\)

<table>
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<tr>
<th></th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td><strong>Individual level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1. HRM process</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Employee performance</td>
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<td>.177*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Group level</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1. HRM process</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Employee performance average</td>
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<td>.080</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Employee performance conformity.</td>
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<td>.567**</td>
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<td></td>
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<tr>
<td>3. Organizational performance</td>
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<td>.660***</td>
<td>.522**</td>
<td>.280</td>
<td></td>
</tr>
</tbody>
</table>

\(^{22}\) Means of latent variables held at zero.
Figure 1
The conceptual model

Figure 2
Two level CFA

23 Mediation paths with dotted lines

24 In the MLC model variables measured at the individual level are decomposed into two uncorrelated latent variables that is, within (individual) and between (group): $x_{ij} = x_{wij} + x_{bj}$. The between variable $x_{bj}$ reflects a random latent group mean and the within level variable $x_{wij}$ becomes a latent group-mean centered variable (Muthén & Muthén, 1998-2007, p. 230). Factor loadings are held equal across levels.
Figure 3

Results

* p < .05, ** p < .01, *** p < .001

P-values reflect the proportion of the posterior distribution that is below zero
In the interest of clarity, factor indicators are not displayed.
Appendix A
Measures

1 - Distinctiveness.

1a - Understandability of the HRM practices

*Your employer made very clear to you specific company objectives of*

its selection process (*Selection*); its socialization process (*Socialization*); its performance appraisal process
(*Performance appraisal*); its training and development policy (*Training and development*); its reward system
(*Compensation*); its internal communication and information sharing policy (*Communication*); the way the
company allows employees autonomy in doing their job (*Autonomy*); involving employees in general planning and
decision making concerning internal company issues (*Involvement*).

1b - Meaningfulness/relevance of the HRM practices

*Selection:* Your specific competencies acquired before your current employment have been of high relevance for
your ability to work and function effectively in the company. *Socialization:* your socialization process at the
beginning of your employment was very relevant in enabling you to get to know the company, its values and
norms as well as its core people. *Performance appraisal:* your current performance appraisals at the company are
very meaningful to you. *Training and development:* the training and development programs the company has
provided you are very meaningful to you. *Compensation:* the criteria by which your bonus pay (or other
additions to your base pay) is currently determined at the company are very meaningful to you. *Communication:*
the information you currently receive through company internal communication and information sharing is of
high relevance for you. *Autonomy:* the autonomy the company currently allows you in doing your job is very
meaningful to you. *Involvement:* the way your employer currently involves you in general planning and
decision-making concerning internal company issues is very meaningful to you.
2 - Consistency

2a - Validity of the HRM practices

For each of the HRM practices included in the above two measures we asked the respondents to: “Think about your company’s general attitude to employee management, the kind of employee behavior, competence and attitudes the company demands or desires of you. Please indicate the degree to which the following practices support this approach: [followed by each of the 8 practices]”.

2b - Stability of the HRM practices

*During several years the company has continued to emphasize the importance of*

(Selection) the selection process; (Socialization) the socialization process for new employees; (Performance appraisal) the performance appraisals; (Training and development) continuous training and development;

(Compensation) the criteria for determining your bonus pay (or other additions to your base pay);

(Communication) company internal communication and information sharing; (Autonomy) allowing you autonomy in doing your job; (Involvement) involving you in general planning and decision making concerning internal company issues.

3 - Employee performance measures (Evaluation by supervisor)

The consultant: (Efficiency) ‘is very efficient in his/her work’; (Efficiency) ‘always meets or beats deadlines for completing work’; (Quality) ‘performs his/her duties with unusually few errors’; (Quality) never receives customer complaints of his/her work

4 - Organizational performance (Supervisor perceptions of organizational performance)

(Profitability) during the last two years your consulting company’s profitability has been excellent; (Customer satisfaction) during the last two years your consulting company’s customers have in general been very satisfied;

(Reputation for quality) in your consulting market, your company’s reputation for quality surpasses major competitors


