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Gibson, C, [Birkinshaw, J](#), McDaniel Sumpter, D and Ambos, T C  
(2019)

*The hierarchical erosion effect: a new perspective on perceptual differences and business performance.*

Journal of Management Studies, 56 (8). pp. 1713-1747. ISSN 0022-2380

DOI: <https://doi.org/10.1111/joms.12443>

Wiley

<https://www.onlinelibrary.wiley.com/doi/10.1111/jo...>

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## The Hierarchical Erosion Effect: A New Perspective on Perceptual Differences and Business Performance

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**ABSTRACT** Organizations are coalitions of individuals with heterogeneous interests and perceptions (March and Simon, 1958/1993). We examine an important source of heterogeneity, namely the different perceptions individuals hold across hierarchical levels. We introduce the notion of a *hierarchical erosion effect* whereby individual perceptions about specific practices become less favourable the lower one goes in the hierarchy. Using data from 4,243 employees across four levels in 38 business units, we provide evidence that this effect exists, controlling for other factors, including the overall favourability of the business unit culture across eight practices. We show how the size of this hierarchical erosion effect varies depending on the nature of the organizational practice being evaluated and the extent to which executives share strategic information widely, and we also show that a lower hierarchical erosion effect is correlated with higher business unit growth. In doing so, we enrich understanding of two aspects of March and Simon's work, their notion of intra-organizational heterogeneity and their distinctive view of the nature of hierarchy.

**Keywords:** alignment, consensus, Herbert Simon, hierarchical erosion, internal heterogeneity, James March, perception gaps

### INTRODUCTION

The ideas of James March and Herbert Simon, as expressed in *Organizations* (1958/1993) and in their many related works, have had an enormous impact on the field of organization studies over the last sixty years. Basic concepts such as bounded rationality, problemistic search and organizational routines, as well as entire sub-fields of research, such

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as organizational learning, the attention-based view, and the behavioural view, can all be traced back to the collaboration between March and Simon in the 1950s at Carnegie Mellon University.

Among their many ideas was a novel perspective on how to conceptualize an organization. Unlike the dominant bureaucratic perspective of the 1940s, which ‘treated individuals as machines’ (March and Simon, 1993, p. 56; all page references are to the second edition of *Organizations*), they defined organizations as ‘systems of coordinated action among individuals and groups whose preferences, information, interests, or knowledge differ’ (1993, p. 2). By explicitly recognizing the heterogeneity of individual perceptions and goals, and the potential for internal conflict, they opened up important questions about how alignment and coordination might be achieved. Many lines of research have subsequently tackled these questions, for example studies of organizational consensus (Kellermanns et al., 2005), coordination (Van de Ven et al., 1976) and attention management (Ocasio, 1997).

And yet, despite all the progress, the basic notion of an organization as a ‘coalition of heterogeneous participants with conflicting interests, goals and knowledge’ (Gavetti et al., 2007, p. 528) has been relatively unexplored. We take it for granted that individuals in large organizations have different interests and perceptions, but we rarely examine the nature or extent of these differences across different parts of the organization. This is an opportunity for both theory and practice. Organization theory would benefit from a richer conceptualization of the dimensions of internal organizational heterogeneity in perceptions, so that its causes and consequences for alignment and coordination can be better understood. And on a practical basis, executives would benefit from knowing how to manage this internal heterogeneity to enhance their productivity and performance.

The purpose of this paper is to develop a new perspective on the nature of heterogeneity within organizations, and in particular the perceptual differences between individuals in large organizations (March and Simon, 1993, p. 147). Unlike prior research that simply examines the variance of perceptions across a group of employees (e.g., Gibson et al., 2009; Hatfield and Huseman, 1982; Kellermanns et al., 2005), we define a *hierarchical erosion effect*, whereby perceptions about specific practices become less favourable the lower one goes in the hierarchy. This notion that people at different organizational levels perceive things differently was speculated on by March and Simon (1993, p. 147) and has been acknowledged in subsequent work (e.g., Cole and Bruch, 2006; Corley, 2004), but it has not been systematically studied.

Using survey data from 4,234 employees in 38 business units, we show the existence of a hierarchical erosion effect, controlling for other factors, and we then seek to understand why this effect might be stronger in certain situations than in others. We start by observing that the concept of hierarchy has been used in a variety of ways in the literature. One perspective is hierarchy as a *formal authority structure* where one individual has legitimate authority over another (Parsons, 1971; Weber, 1978/1922), linked to their position or title. An alternative perspective is hierarchy as *nested subsystems of activity* where coordination is achieved through the development of relational norms, and without reliance on formal authority (March and Simon, 1958; Parsons, 1971; Simon, 1962).

These two contrasting perspectives allow us to conceptualize a spectrum of choices for senior executives in how they generate coordinated action among individuals, from a

relative emphasis on authority based mechanisms (a la Weber) on the one hand, through to a relative emphasis on relational norm-based mechanisms (a la March and Simon) on the other. And depending on the choices made, we would expect the hierarchical erosion effect to vary accordingly, with lower levels of hierarchical erosion being observed in those situations where relational-norm based mechanisms are enacted through broad information sharing.

To substantiate this argument, we develop four specific hypotheses. First, we suggest that ratings of the favourability of practices decrease, the lower one moves down through the formalized hierarchical levels in the organization. Second, and building on the two contrasting perspectives of hierarchy, we propose that there will be variation from one organizational practice to the next (holding the business unit constant), such that those which accentuate top-down formal authority during implementation, rather than front-line development of relational norms, will demonstrate greater hierarchical erosion.

Third, we suggest there may be variation from one business setting to the next (holding the organizational practice constant). We focus on one specific variable, namely the extent to which the top executives in the business unit choose to share strategic information with the lower levels. This approach shifts the perspective of lower-level employees away from the authority-based view of hierarchy and towards the relational norm-based view, and to a smaller hierarchical erosion effect. Finally, we examine the consequences for business unit performance, arguing that a lower hierarchical erosion effect is consistent with a higher motivation to produce (March and Simon, 1993, p. 71) and thereby a stronger performance. We find support for all these arguments.

In sum, our primary contribution is to introduce and validate the notion of a hierarchical erosion effect, demonstrating first that it exists, and then identifying mechanisms that underlie its development and its consequences. This enriches our understanding of two aspects of March and Simon's work – the notion of organizations as coalitions of heterogeneous interests and perceptions, and their distinctive view of the nature of hierarchy. It also suggests practical implications for how perceptual differences across levels can be managed more effectively in practice.

## **BACKGROUND ON PERCEPTUAL DIFFERENCES IN ORGANIZATIONS**

One of the core theoretical pillars of March and Simon's (1993) worldview is the notion that organizations seek to coordinate the actions of heterogeneous individuals with different goals and preferences. In other words, unlike traditional bureaucratic theories, in which individuals were treated as machines that could be controlled, the March and Simon perspective explicitly recognized the complexities and challenges of motivating a heterogeneous workforce to coordinate their efforts in an effective way.

One important aspect of this internal heterogeneity is the perceptual differences across individuals within the same organization (March and Simon, 1993, p. 144), arising partly through the role positions they are assigned, and partly through their enactment of those roles. Perhaps because these perceptual differences are measurable, typically through surveys, they have been well studied in a number of literatures spanning organizational behaviour and strategic management. We briefly review these studies here, focusing

on the major conceptual and empirical issues they have identified and areas where additional research is needed.

First, many different units of analysis have been examined. In organizational behaviour, studies have typically focused on dyadic similarities in perceptions between a leader and a subordinate (Shamir, 1995; Turban and Jones, 1988) or between the leader and his or her team (Gibson et al., 2001; Gibson et al., 2009). In the strategy literature, researchers have mostly taken a horizontal perspective (i.e., within a single hierarchical layer), for example focusing on the top management team as the relevant unit of analysis (Amason, 1996; Hrebiniak and Snow, 1982; Schwenk, 1996), or on a group of middle managers (Wooldridge and Floyd, 1990). While there is merit in each of these perspectives, they only provide a partial view of the phenomenon of interest. Kellermanns and colleagues (2011) argue that hierarchical level should moderate the relationship between strategic consensus and performance. They found only partial statistical support for this hypotheses in their meta-analysis, while other studies (see e.g., Floyd and Wooldridge, 1992; Homburg et al., 1999) have provided evidence that a manager's decision-making context (i.e., whether at corporate level or in a strategic business unit) will have important effects on the degree of consensus.

Drawing on March and Simon's (1993) conceptualization of the organization as a grouping of individuals with heterogeneous interests and perceptions, we believe it would be valuable to build understanding of particular dimensions of perceptual heterogeneity. As noted, our approach is to focus on the hierarchical level of individuals as an important but underexplored dimension. Others share this view: Cole and Bruch (2006) call for further research aimed at delineating the nature of hierarchical differentiation in organizations, and Magee and Galinsky (2008, p. 353) comment on a 'paucity of recent work on the topic.'

Specifically, we build on March and Simon (1993) to argue that perceptions are a function of the formal positions people hold, the way they choose to enact those roles, and the broader organization in which they are embedded. We would therefore expect perceptual differences to exist from one hierarchical level to the next, but we would also expect these differences to be malleable to some degree. Some organizations, for example, might reduce these differences by sharing information widely (Bourgeois and Brodwin, 1984).

A second and related issue in the literature is that we have a limited understanding of how similarities or differences in perceptions of various organizational attributes emerge, and how they shape performance. There is evidence that perceptions are shaped by aspects of an individual's formal role (Horton and Griffith, 2017), group processes (Gibson et al., 2009), and the broader organization in which they work (O'Reilly et al., 201), but there is little guidance in the literature as to how important each of these aspects might be. Further, in terms of consequences, most of the prior literature has argued that similarity in perceptions among employees will enable coordination and alignment. For example, similarity in views across dyads is a predictor of effective leader-member relations (Gibson et al., 2009; Markham et al., 2010) and shared perceptions of strategic priorities are associated with superior performance (Bourgeois, 1985; Dess, 1987; Kellermanns et al., 2005). But many empirical studies show equivocal results (see e.g., Kellermanns et al., 2011). This equivocality is often explained by highlighting the importance of diverse perceptions in the decision making process, for example as a way of avoiding groupthink

(Janis, 1972) and challenging the dominant logic of the organization (Prahalad and Bettis, 1986). While studies from a variety of traditions have shown that decision making processes are improved when there is openness to conflicting views and a process for discussing and reconciling them (Dooley and Fryxell, 1999; Eisenhardt et al., 1997; March and Simon, 1993; Markoczy, 2001; March et al., 1991), the relationship between perceptual differences and organizational outcomes, such as leader-member relationships or performance, remains ambiguous. Thus, we need to better understand specific mechanisms for the effects if we are to resolve this issue.

A third issue is the debate over how differences in perceptions should be measured and studied. There are questions regarding the most important targets of perception (i.e., what is being perceived) as well as how to capture the differences in perceptions. With regard to the target of perception, the organizational behaviour literature has focused on the degree to which there is similarity in perceptions about organizational processes, such as conflict and communication. In contrast, the strategy literature has focused on the degree to which there is similarity in perceptions about priorities (the ends), although there is also interest in whether there is agreement as to how to achieve these ends (the means) (Kellermans et al., 2011). Hence we are in need of an approach which casts a broad net regarding what the perceptions are about, examining perceptual differences pertaining to multiple attributes of a business in the same study, rather than a single feature.

In terms of measurement of perceptual differences, the traditional approaches consist of: (1) a simple dispersal or variance measure, such as the standard deviation; (2) a measure of the (Euclidean) distance between the various members of a management team and the CEO; or (3) a measure of consistency to reflect the extent of overlap in the mental models of members of a management team (Kellermanns et al., 2011). Over the last decade, more sophisticated approaches have been developed. In the organizational behaviour literature that investigates dyads, researchers have used a polynomial regression approach, which models perceptions of each party in the dyad, and their interaction, and then uses three-dimensional response surface modelling to display differences in perceptions (e.g. Edwards, 2007; Gibson et al., 2009). In the strategy literature, Tarakci et al. (2014) developed strategic consensus mapping (SCM) to analyse shared perceptions cross-sectionally and longitudinally within and between groups. While these newer methods provide useful additional granularity, they are difficult to scale up to more than a dyadic comparison, and nearly impossible to use across a large number of organizations. Hence we suggest that there is still scope to improve the measurement of differences in perceptions in organizations.

## **THE HIERARCHICAL EROSION EFFECT**

Taken as a whole, extant literature has provided many useful insights, but we still lack a way of conceptualizing and operationalizing the similarities or differences in perceptions in large organizations that captures both breadth (of sampled individuals and targets) and depth (across multiple hierarchical layers). The primary aim of our study is to address these shortcomings by providing a new theoretical perspective on the phenomenon of perceptual differences in organizations, and its causes and consequences.

Specifically, we separate out two effects. One is a simple dispersion effect, measured by looking at the standard deviation of survey responses for a given group of individuals. Dispersion captures only inconsistency, without helping us to understand any specific pattern to that inconsistency. In contrast, we develop a construct which captures a specific form of inconsistency, the *hierarchical erosion effect*. This construct represents a particular pattern of inconsistency in perceptions, in which those at upper levels of the organization perceive practices as more favourable than those at each successive level lower in the hierarchy.

These two effects are conceptually distinct from one another. For example, an organization might have a low dispersal of views across employees of similar levels, but a significant difference between the views of senior executives, middle-level managers, front-line supervisors and non-managerial employees. Further, we note an important distinction between the mechanics of the practice as opposed to the perception of favourability of the practice. The mechanics of an organizational practice may differ across levels, but most organizations strive for consistency in perceptions of favourability. It is this favourability that is our concern: if there is lack of consistency in favourability of perceptions, this implies that there are pockets of discontent, which could have negative consequences for performance and growth.

Finally, we argue that the differences in favourability across levels are likely to follow a particular pattern, with those in the top executive team having favourable perceptions regarding practices in the organization, and those at lower levels of the organization perceiving this same practice much less favourably. Our expectation is that the perceptions of favourability are likely to erode across levels, such that favourability decreases as one descends each successive level in the hierarchy of the organization.

Why would this hierarchical erosion effect occur? We argue that an important mechanism pertains to identification, which refers to a sense of belongingness that people experience when they perceive that their relationship with a referent (e.g., organization, subunit or work group) is critical to their self-definition (Ashforth et al., 2008). March and Simon (1993) argued individuals have several different ‘targets for identification’ including the organization as a whole, the subunit they belong to, and their task-based workgroup, and they suggested factors such as the frequency of interaction with others and the perceived prestige of the referent would affect identification. This view led them to hypothesize that individuals at lower levels would often identify more with their workteam or subgroup, rather than the organization as a whole.

A large body of literature on organizational identification has emerged since March and Simon (1993). Building on the broader notion of social identity (Alvesson et al., 2008; Ramarajan, 2014; Tajfel, 1978), it examines the ways in which membership in a social entity (such as an organization, profession, or work group) shapes an individual’s perceptions and expectations (Bartel, 2001; Mael and Ashforth, 1992). Having defined themselves in terms of a given social referent, individuals seek to build positive self-esteem by viewing that social group in a positive light, regardless of its flaws or evidence to the contrary (Haslam and Ellemers, 2005). Negative information about one’s social group is given less weight or may even be ignored, as a means of protecting the self-image of the individual who strongly identifies with it (Horton and Griffith, 2017; Richter et al., 2006). By aiming to positively differentiate their primary ingroup from others,

individuals set the stage for conflicting and distorted views of other groups (Dovidio et al., 2009; Richter et al., 2006). For example, there is evidence that identifying with the organization as a whole is positively related to employees' perceptions of various features of the organization, despite evidence that these features may not be operationally optimal, and even when these very same features may not be highly regarded by all who work in the organization (Cheney, 1983a, 1983b; Tyler, 1999).

This literature has also noted the potential importance of hierarchical level as an influence on identification. For example, Horton et al. (2014) showed how the locus of identification varied across hierarchical levels, with senior managers identifying most strongly with the organization as a whole, mid-level supervisors identifying with their profession, and front line workers identifying with their project or work group (see also a meta-analysis by Ricketta, 2005). Hence, senior managers, who tend to identify more with the organization as a whole, are likely to view practices that are organization-wide more favourably than lower level employees. In contrast, rather than being positively inclined toward organizational-level practices, lower level employees are likely to be positively inclined toward work group-level features (e.g., activities or outcomes for their particular work group, which may not be prevalent organization-wide), and this may result in less favourable views of the organization-wide practices.

This line of research further reinforces March and Simon's (1993, p. 85) notion that there are multiple 'targets for identification' in an organization. It explains how an individual's locus of identification (e.g., the organization as a whole for the senior executive, the profession for the middle-level manager, the work-group for the lower-level employee) is tied to their hierarchical level in the organization, and subsequently leads them to evaluate their primary social group more favourably than other social group referents. We therefore propose the following hypothesis:

*Hypothesis 1:* There are significant differences in evaluations of organization-wide practices across hierarchical levels, with organization-wide practices being perceived less favourably the lower the hierarchical level of the respondent.

## **Features That Promote or Inhibit Hierarchical Erosion**

In addition to showing that the hierarchical erosion effect exists, we seek to shed light on its causes and consequences. This requires a nuanced discussion of what exactly we mean by hierarchy (as Hedlund (1993, p. 198) observes, 'most organization theorists seem to regard hierarchy as a primitive concept not requiring further definition').

Two approaches can be found in the literature. One is the classic notion of hierarchy as a *formal authority structure* in which one individual has legitimate authority over another. This was an integral part of Weber's (1978/1922/1922) original thinking on bureaucracy, and it has endured as an important perspective in both the academic and practitioner worlds (e.g., Jaques, 1996; Parsons, 1971). The other perspective is hierarchy as *nested subsystems of activity* where alignment and coordination are achieved through the development of relational norms. This is, once again, a product of the Carnegie School. March and Simon barely acknowledged formal hierarchal structure in *Organizations*. A

subsequent paper by Simon (1962, p. 468) took this non-Weberian view even further, by defining hierarchy as ‘a system composed of interrelated subsystems’ with no requirement for formal subordination among subsystems. In other words, while not denying the existence of some form of legitimate authority between higher and lower subsystems, March and Simon preferred to emphasize the informal and relationship-based stimuli that organizations put in place to increase an individual’s ‘motivation to produce’ (1993, p. 71).

To understand how these two perspectives might be brought together, it is useful to view real-life hierarchical settings on a spectrum, with some operating predominantly through formal authority structures and others using more informal, relational norms to achieve coordination (cf. the mechanistic versus organic structures of Burns and Stalker, 1961, and the utilitarian versus normative forms of power introduced by Etzioni, 1975). While not thinking in these conceptual terms *per se*, senior executives make implicit choices about where on this spectrum they prefer to operate, and they use various mechanisms, such as the sharing of strategic information, or the emphasis of certain organizational practices ahead of others, to shape the way individuals behave and how they perceive the organization.

More specifically, we suggest that the further an organization moves away from the Weberian notion of hierarchy as formal authority structure, and towards the March/Simon-inspired notion of hierarchy as nested subsystems of activity, the more coordination is achieved through the active involvement and buy-in of employees, and the lower the hierarchical erosion effect. We examine these ideas next by proposing specific organizational mechanisms that may promote or inhibit hierarchical erosion.

### **Variation Across Organizational Practices**

First, we suggest there may be variation from one organizational practice to the next (holding the business unit constant), with some practices being implemented by accentuating top-down formal authority and others emphasizing front line (i.e., bottom-up) development of relational norms. These implementation processes are likely to affect the extent which hierarchical erosion develops.

Organizational practices are the ways of working that guide employee behavior and help them to achieve the organization’s goals (Puranam et al., 2014). Examples are the hiring process, the performance measurement system and the capital allocation process. Organizational practices involve ‘repetitive, recognizable patterns of interdependent actions, involving multiple actors, to achieve their work processes’ as well as the performance of these patterns (Feldman and Pentland, 2003).

Building on the two views of hierarchy introduced above, some practices are more likely to be implemented through the formal authority structure, for example capital allocation or the provision of rewards (Parsons, 1971; Puranam et al., 2014). They are defined by those at the top, and implemented by those at lower levels. Such practices offer little scope for variation in how they are performed, and may be viewed as far removed (i.e., less relevant) at lower levels of the organization (see, for example, Feldman’s (2003) analysis of the inertia in a budgeting system). Other practices, for example decision implementation or employee engagement processes, arise through the organization’s

relational norms (Etzioni, 1975; Parsons, 1971). These are shaped over time by the actions of lower level employees in 'front line' roles, often with a considerable amount of modification or 'improvisation' (Pentland and Feldman, 2005) along the way.

Our expectation is that when practices are implemented through this more bottom-up relational process with front-line input, then there will be greater agreement across levels, because those responsible for ensuring the success of the practices on a day-to-day basis are involved in enacting and making sense of them. This results in a lower level of hierarchical erosion:

*Hypothesis 2:* The greater the extent of front-line relational coordination in the implementation of an organizational practice, the lower the level of hierarchical erosion

### **Variation Across Business Units**

Second, we suggest there may be variation from one business unit to the next (holding the organizational practice constant), with some deliberately emphasizing formal authority structures and others preferring to use informal relational norms. We focus here on one specific mechanism, namely the provision of strategic information to those at lower levels in the business. In some settings, this type of information is not widely shared (often because of a lack of clarity around strategic priorities) and senior executives take full responsibility for pulling it together and acting on it; in other settings, senior executives actively share such information with individuals across the business, and encourage them to make use of it in their day-to-day work.

Building again on the two views of hierarchy above, one of the hallmarks of a formal authority structure is that senior executives control the flow of strategic information. They have privileged access to strategic information by virtue of their formal positions, and they share it as necessary with lower hierarchical levels to enable them to fulfil their responsibilities (Daft and Lengel, 1986; Galbraith, 1973; Hodgkinson and Healey, 2008). In contrast, the concept of hierarchy as nested subsystems of activity implies less information control by those at the top. For senior executives seeking to move towards this less authority-based model, opening up strategic information to lower-level employees is therefore a useful mechanism. Sharing information (both across and within levels) facilitates greater coordination because individuals can see the consequences of their actions and how they contribute to the business' goals. This sharing of information also helps employees to develop a more favourable view of the business' activities (Ketokivi and Castaner, 2004; O'Reilly et al., 2010), and in turn it also encourages them to share insights back to those at the top (Fandt and Ferris, 1990; Milliken et al., 2003; Morrison, 2014).

Once again, this argument was anticipated by March and Simon (1993, p. 148), in their discussion of the channelling of information-processing as a means of shaping employee perceptions. Their logic was that the flow of information shapes the attention and understanding of employees and thereby influences their feelings of identification. Specifically, they argued that greater frequency of interaction across levels would be linked to greater identification with the organization as a whole (1993, p. 85), and also

to an easing of perceptual differences. Flow of information across levels, in other words, builds similarity of perception, suggesting the following hypothesis:

*Hypothesis 3:* The greater the access to strategic information for lower-level employees, the lower the hierarchical erosion effect

### **Hierarchical Erosion Effect and Performance**

We finally consider the consequences of the hierarchical erosion effect, that is, how it is related to business performance. While some prior studies have argued that too much consensus among employees is a bad thing (Eisenhardt et al., 1997; Priem, 1990), most research has pointed to a positive effect of similarity in perceptions, i.e., more agreement between people in the organization is associated with improvements in performance due to coordination and alignment benefits. As argued by Amason (1996, p. 125), consensus enables individuals to make their own choices ‘in a way that is consistent with others and with the spirit of the decision.’ Several studies have documented how a shared view facilitates coordinated and aligned action (Guth and Macmillan, 1986; O’Reilly et al., 2010; Wooldridge and Floyd, 1989), and a recent meta-analysis by Kellermanns and colleagues (2011) showed a generally positive relationship between consensus and performance. In contrast, perceptual differences (e.g., the hierarchical erosion effect) are likely to have serious negative ramifications for outcomes. For example, Maitlis and Sonenshein (2009) found that differences in sense-making processes in different parts of the organization resulted in challenges in coordinating action across them.

Business performance is a multifaceted construct, so it is important to be specific about what aspect of performance is relevant to the phenomenon of perceptual differences. The dependent variable in March and Simon’s (1993, p. 71) theoretical framework was a ‘motivation to produce,’ which implies some level of discretionary effort above and beyond employees’ narrow contractual obligations. In the context of the current study, we therefore focus on business unit *growth* as a relevant outcome measure, and the proposition that shared perceptions across hierarchical levels (i.e., an absence of erosion in perceptions as we move down the hierarchy) will help to create a motivation to produce, which will manifest itself in new sources of growth for the business.

To be more specific, a basic level of shared understanding among employees is important for aligning effort around existing activities and improving performance ‘inside the box’. But if the intention is to generate new growth, employees on the front line need to understand the strategic objectives of the business sufficiently well that they are able to judge which opportunities to respond to, and they need to be sufficiently motivated to act on those opportunities (Dutton and Ashford, 1993; Fuller et al., 2006).

Consider these two arguments separately. First, the sharing of strategic information at lower levels in the hierarchy provides those closer to the market with greater knowledge of what is possible, and greater clarity about which types of opportunities are likely to be most valuable in terms of business growth. Second, emphasizing those organizational practices that involve greater front-line implementation makes it more likely front-line employees will identify with the goals of the business as a whole (not just their immediate

work unit), which in turn is related to their level of discretionary involvement, i.e., what March and Simon refer to as a 'motivation to produce'.

Putting these points together, we view a business with low hierarchical erosion (i.e. where employees at different levels have shared perceptions about the favourability of their organizational practices) as more conducive to growth, because employees have both the knowledge and motivation to pursue new opportunities. In contrast, in a business with high levels of hierarchical erosion employees lack a coherent understanding of priorities, and tend to identify more with their narrow work unit's objectives, resulting in a static or declining performance trajectory. We also expect that this effect will be observed even after controlling for the general dispersion of views (a general lack of consistency), and for a number of important contingencies that have been highlighted in the literature on strategic consensus and performance such as the environment (Homburg et al., 1999; Priem, 1990) and the scope and dynamism of the organization (Bowman and Ambrosini, 1997; Dess and Priem, 1995).

*Hypothesis 4:* Hierarchical erosion has a significant and negative relationship with subsequent growth in business unit performance, after controlling for dispersion in perceptions

## METHODS

Our empirical analysis is based on 4,243 evaluations of a wide variety of organizational practices, across four hierarchical levels of 38 business units in ten large firms. The sample was designed to provide broad representation across a variety of markets, industries, stages of firm growth, and firm sizes. The primary purpose of the data collection effort was to show that when practices are not perceived consistently across the organization, performance suffers. Thus, the firms each participated in an organizational diagnostic effort, designed to assess the extent to which various practices in the organization were perceived consistently and were operating in an aligned way across the entire organization. That is, the intention in each organization had been that their practices would function coherently across all levels of the organization and that any deviations or inconsistencies across levels would indicate an area of opportunity for improvement.

Specifically, employees indicated the favourability of their perception of their business units on nine organizational practices (described below). These ratings were used to calculate the extent of hierarchical erosion for each practice in each business unit ( $n = 4,243$ ). We then created a database in which the observations were the hierarchical erosion effect score for each practice in each business unit (9 practices  $\times$  38 business units results in  $n = 342$ ). Finally, we aggregated the responses to allow business unit-level analyses ( $n = 38$ ), examining the effect of hierarchical erosion alongside various control variables as predictors of business unit performance. In particular, we wanted to be sure that hierarchical erosion has effects beyond just a favourable organizational culture or effective managerial practices, which could be captured by the overall favourability scores on the practices we examined.

It is important to highlight the advantages afforded by and the limitation of the unusual nature of this database. By incorporating depth (multiple respondents at multiple hierarchical levels) and breadth (multiple business units), we are able to test the relationship between perceptual differences and business performance in a way that has not been done before. On the other hand, the effort involved in collecting such an extensive body of data limited us to a lagged cross-sectional design (i.e., the independent and dependent variables were collected at two different time points, with data collected on business unit growth lagged by three years), rather than a panel design, which in turn limits causal inferences from our analysis.

### **Sample and Procedure**

We administered a comprehensive survey to a stratified random sample of employees at four hierarchical levels in each of 38 business units across ten large firms. The firms represented diverse industries, such as banking, engineering, software, and food products. Employees were selected through employee rosters using a random number generator, specifically ensuring representation proportional to the total number employed at four hierarchical levels in each business unit (i.e., 20 percent of employees at each level in each business unit, noting that the size of the business units varied, hence the total sample size for each business unit at each level varies proportionally), including (1) senior managers of the firms (e.g., CEO, CFO, COO, and heads of divisions or functions), (2) middle managers (e.g., program or subunit managers, who reported to senior managers, and to whom supervisors reported), (3) line managers (e.g., front line supervisors, team leaders or project managers, who directly supervised non-managerial employees), and (4) non-managerial employees (i.e., independent contributors or those who worked as members of teams or projects, but did not have supervisory responsibility). Response rates were high, given the aim of the study and managerial support for the project, ranging from 75 percent to 90 per cent in each business unit. Comparability of the hierarchical levels across organizations was maintained by careful examination of organization structure charts and by working with the human resources directors in each firm to understand the reporting relationships, span of control, and nomenclature used in each firm. This also allowed us to incorporate firm-specific nomenclature into the demographic section of the survey. In this way, we were able to make certain that employees in each hierarchical category held similar positions, equivalent span of control, and comparable authority. For example, this ensured that those who indicated they were 'front line supervisors' on our survey had similar duties across the ten firms. Table I provides a description of the sample.

### **Measures**

*Organizational practices.* Drawing upon the characterization of an organization as a system of practices (Drucker, 2008; Gibson et al., 2007; Huselid and Becker, 1997; Lawler and Boudreau, 2015), we selected nine practices that covered a variety of areas of organizational functioning, to represent the collective interests of the organizations involved, and to ensure some variation on the extent of top-down versus front-line involvement in implementation. We utilized existing scales (see Lawler and Boudreau,

Table I. Characteristics of sample

<i>Firm</i>	<i>Industry</i>	<i>Country</i>	<i>Number of business units</i>	<i>Total number of respondents</i>	<i>Non-Mgmt</i>	<i>Line Mgmt</i>	<i>Middle Mgmt</i>	<i>Senior Mgmt</i>
1	Electronic	Japan	2	279	123	126	27	2
2	Heavy engineering	U.S.	2	299	132	94	59	13
3	Financial services	Canada	2	40	6	5	11	17
4	Natural resources	U.S.	2	170	65	58	29	14
5	Software/IT	U.S.	4	480	293	119	53	13
6	Industrial products	India	4	193	49	61	48	35
7	Auto	France	7	197	46	98	75	24
8	Food services	Canada	6	383	77	171	83	25
9	Industrial conglomerate	South Korea	6	2130	1444	483	149	47
10	Defense	France	3	72	35	21	15	2
Total			38	4243	2221	1236	549	190

2015 for a review), adapted for brevity and with three or four items per scale, to maximize the response rate. Individual goal setting included items such as ‘*issue creative challenges to their people instead of narrowly defining tasks*’ (alpha = 0.77). Group performance measurement included items such as ‘*make an effort to measure those things that are most important to the success of our business*’ (alpha = 0.78). Incentive compensation included items such as ‘*encourage and reward behavior that supports the overall business goals*’ (alpha = 0.87). Individual performance appraisal included items such as ‘*use their appraisal feedback to improve their performance*’ (alpha = 0.79). Capital allocation included items such as ‘*behave fairly and objectively when making capital allocation decisions*’ (alpha = 0.82). Practice transfer included items such as ‘*quickly replicate best practices across organizational boundaries*’ (alpha = 0.76). Decision discretion included items such as ‘*push decisions down to the lowest appropriate level*’ (alpha = 0.80). Recruiting included items such as ‘*make a conscious effort to define selection criteria for new people that are related to achieving overall corporate goals*’ (alpha = 0.88). Communicating vision included items such as ‘*know and understand the overall corporate vision/strategy*’ (Alpha = 0.89). Participants responded using seven-point Likert-style responses, ranging from 1 = not at all to 7 = to a very great extent. Participant scores on these measures were means calculated across items. Principal component factor analysis of each scale with varimax rotation revealed that for each practice, the items within the scale load onto one factor, with an eigen value greater than one, and there was no evidence of a single underlying factor across all items on the scales.

*Hierarchical erosion scores.* Our conceptualization of hierarchical erosion implies that we need to capture the magnitude of the differences across hierarchical levels in a business unit, not simply the variance explained by hierarchical level. To do so, we utilized the Type III Sum of Squares value, computed with a series of analyses of variance (ANOVA) tests using the general linear model, wherein the dependent variable is the specific practice being rated (e.g., capital allocation) and the independent variable is the hierarchical level in the organization (non-management, line-management, middle management or senior management). In these analyses, we also entered a categorical variable for firm as a fixed-effect covariate to control for potential firm-level variance (See Table II). Note that because many industries are represented by only one firm, this same covariate is also a surrogate control for industry.

We note that there are various measures of effect size in ANOVA, which represent the degree of association between an effect (such as a main effect or an interaction) and the dependent variable. They can be thought of as the correlation between an effect and the dependent variable. If the value of the measure of association is squared, it can be interpreted as the proportion of variance in the dependent variable that is attributable to each effect. Four of the commonly used measures of effect size in ANOVA are eta squared, partial eta squared, omega squared, and the intra-class correlation. Eta squared and partial eta squared are estimates of the degree of association for the sample. Omega squared and the intra-class correlation are estimates of the degree of association in the population. So, in our analyses, eta (or partial eta squared) is the proportion of the variance in the independent variable (e.g., capital allocation) that can be attributed to hierarchical level, indicating how much ‘level’ accounts for variance in the practice. This statistic is helpful to compare the effect in question (such as hierarchical level in the

Table II. Effect of hierarchical level (Hypothesis 1)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
<i>Dependent variable: Individual goal setting</i>						
Corrected model	286.038 <sup>a</sup>	4	71.51	81.81	0.000	0.08
Intercept	14482.01	1	14482.01	165668.54	0.000	0.81
Company	63.24	1	63.24	72.35	0.000	0.02
Level	167.49	3	55.83	63.87	0.000	0.05
Error	3432.46	3927	0.87			
Total	81023.13	3932				
Corrected total	3718.50	3931				
<i>Dependent variable: Group performance measurement</i>						
Corrected model	345.841 <sup>b</sup>	4	86.46	72.76	0.000	0.07
Intercept	13981.61	1	13981.61	11766.34	0.000	0.75
Company	58.18	1	58.18	48.96	0.000	0.01
Level	228.55	3	76.18	64.11	0.000	0.05
Error	4717.44	3970	1.19			
Total	78030.22	3975				
Corrected total	5063.28	3974				
<i>Dependent variable: Individual performance appraisal</i>						
Corrected model	362.736 <sup>c</sup>	4	90.684	79.052	0.000	0.075
Intercept	15020.246	1	15020.246	13093.532	0.000	0.771
Company	184.037	1	184.037	160.429	0.000	0.040
Level	103.391	3	34.464	30.043	0.000	0.023
Error	4468.150	3895	1.147			
Total	80305.556	3900				
Corrected total	4830.886	3899				
<i>Dependent variable: Communicating vision</i>						
Corrected model	380.171 <sup>d</sup>	4	95.043	66.338	0.000	0.062

Table II. Continued

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	14850.127	1	14850.127	10365.033	0.000	0.720
Company	36.116	1	36.116	25.208	0.000	0.006
Level	292.720	3	97.573	68.104	0.000	0.048
Error	5766.674	4025	1.433			
Total	84161.778	4030				
Corrected total	6146.844	4029				
<i>Dependent variable: Incentive compensation</i>						
Corrected model	557.460 <sup>c</sup>	4	139.37	91.44	0.000	0.09
Intercept	10748.32	1	10748.32	7051.99	0.000	0.65
Company	13.47	1	13.47	8.83	0.003	0.00
Level	478.77	3	159.59	104.71	0.000	0.08
Error	5770.45	3786	1.52			
Total	63761.22	3791				
Corrected total	6327.91	3790				
<i>Dependent variable: Recruiting</i>						
Corrected model	515.786 <sup>f</sup>	4	128.946	73.843	0.000	0.075
Intercept	8411.803	1	8411.803	4817.166	0.000	0.569
Company	6.318	1	6.318	3.618	0.057	0.001
Level	458.663	3	152.888	87.554	0.000	0.067
Error	6366.697	3646	1.746			
Total	53399.333	3651				
Corrected total	6882.482	3650				
<i>Dependent variable: Decision discretion</i>						
Corrected model	262.716 <sup>g</sup>	4	65.679	57.971	0.000	0.057
Intercept	13984.387	1	13984.387	12343.256	0.000	0.763
Company	90.389	1	90.389	79.781	0.000	0.020

Table II. Continued

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Level	113.678	3	37.893	33.446	0.000	0.026
Error	4332.430	3824	1.133			
Total	80721.375	3829				
Corrected total	4595.146	3828				
<i>Dependent variable: Knowledge transfer</i>						
Corrected model	135.642 <sup>h</sup>	4	33.911	29.944	0.000	0.030
Intercept	13303.605	1	13303.605	11747.447	0.000	0.750
Company	14.879	1	14.879	13.138	0.000	0.003
Level	98.916	3	32.972	29.115	0.000	0.022
Error	4427.949	3910	1.132			
Total	81917.667	3915				
Corrected total	4563.591	3914				
<i>Dependent variable: Capital allocation</i>						
Corrected model	375.277 <sup>i</sup>	4	93.82	72.65	0.000	0.08
Intercept	11596.57	1	11596.57	8979.73	0.000	0.72
Company	1.81	1	1.81	1.40	0.236	0.00
Level	341.80	3	113.93	88.22	0.000	0.07
Error	4600.03	3562	1.29			
Total	73668.00	3567				
Corrected total	4975.31	3566				

<sup>a</sup>R squared = 0.077 (Adjusted R squared = 0.076).  
<sup>b</sup>R squared = 0.068 (Adjusted R squared = 0.067).  
<sup>c</sup>R squared = 0.075 (Adjusted R squared = 0.074).  
<sup>d</sup>R squared = 0.062 (Adjusted R squared = 0.061).  
<sup>e</sup>R squared = 0.088 (Adjusted R squared = 0.087).  
<sup>f</sup>R squared = 0.075 (Adjusted R squared = 0.074).  
<sup>g</sup>R squared = 0.057 (Adjusted R squared = 0.056).  
<sup>h</sup>R squared = 0.030 (Adjusted R squared = 0.029).  
<sup>i</sup>R squared = 0.075 (Adjusted R squared = 0.074).

organization) to other potential effects (such as firm). While useful, these comparisons do not represent the optimal operationalization for the *magnitude* of hierarchical erosion, because partial eta squared does not capture the *size* of the differences *between* levels in a single variable. Instead, it just shows the extent to which level matters, in comparison to other possible effects.

As a result, we chose to use the Type III Sum of Squares for Between Group Differences (T3SS), where group represents the hierarchical level in the organization for the perception of favourability of a given practice. This statistic represents the magnitude of the difference between hierarchical levels, and therefore best fits our conceptualization of hierarchical erosion.

*Front-line relational coordination during practice implementation.* Given there is no established way of distinguishing the top-down versus front-line relational implementation of organizational practices, we used a 'q-sort' procedure (Block, 1978; Peterson et al., 1999) in which expert raters are asked to sort items (i.e., the nine practices) into different categories based on their in-depth understanding of the phenomenon in question. We developed two specific questions, based on Pentland and Feldman's (2005) notion of 'performativity' in the enactment of practices, to help us discriminate between top-down and front-line relational implementation: (a) for this practice, to what extent is there scope for front-line employees to improvise in how it is implemented, according to their specific circumstances? (b) If front-line employees believed this practice was ineffective, how much scope would they have to adapt it themselves? For each question, the expert raters had to choose between 'high' (front-line) and 'low' (top-down). Two expert raters (senior scholars in the field of strategic management) evaluated each of the nine practices separately. The inter-rater reliability of these evaluations was strong (Cohen's  $k = 0.8$ ) and the few differences were resolved through discussion.<sup>[1]</sup> This process resulted in four practices being defined as 'front line relational implementation' (individual goal setting, individual performance appraisal, decision discretion, practice transfer; coded 1) and five being defined as 'top down implementation' (group performance measurement, incentive compensation, capital allocation, recruiting, vision communication; coded 0).

*Access to strategic information.* Access to information was measured using a three item scale based on Gibson and colleagues (2007), which asked respondents to consider strategic information sharing: 'spend a significant amount of time communicating the big picture -vision/strategy/mission/purpose,' 'give ready access to information that others need', 'ensure that those who need it have the most relevant information to have the greatest impact on decisions'. This variable was measured at the lowest hierarchical level in each business unit in order to capture whether information is shared across the different levels of the organization. Cronbach alpha was 0.76.

*Performance.* The dependent variable for H4, growth in business unit performance, was operationalized at the business unit level. We collected objective performance data to generate a measure of profit growth over three years after the survey in each business unit (we also measured revenue growth; see robustness checks below). As one company with two business units ceased to exist in the three year post-survey period, we were unable

to include the entire sample of 38 business units, hence the sample size for the analysis of relationships with performance is 36 business units. The inclusion of an objective performance measure as dependent variable limits potential problems of common method variance and, in the context of this study, also ensured that our dependent variable itself was not subject to significant variations in ratings across hierarchical levels. As it is notoriously difficult to obtain reliable and comparable performance data on international business units from secondary databases in the public domain (Dess and Robinson, 1984), we consulted the companies' annual reports, internal reports, and case study material that were made available to the research team during a series of interviews. A measure of profit growth was chosen to focus on the business unit's evolution (that is, an upward or downward trajectory of the business), rather than compare absolute performance figures across different industries, currencies and business unit sizes. This measure was also consistent with our theoretical arguments, in that we are arguing that hierarchical erosion influences perceptible changes in growth over time. In order to ensure that industry cycle or short-time volatility would not bias our measure, we calculated the average of profit growth over a three-year period *after* the survey (in the robustness checks, we also used four and five-year periods of time).

*Identification with the organization.* Although not hypothesized directly, we confirmed prior research that those at the senior levels of the organization identify more with the organization as a whole than do those at each subsequent level of the organization, using the following item: '*put the interests of the organization as a whole above their individual and group's interests*'. Indeed, even after accounting for variance to due company, there was a significant effect of hierarchical level on the extent of identification with the organization ( $F = 17.31$ ,  $df = 3$ ,  $p < 0.001$ ), and identification with the organization declined with each subsequent level (mean for senior managers = 4.76; mean for middle managers = 4.53; mean for line managers = 4.27; mean for non-managerial employees = 4.12). This provides validation for the assumption we made based on prior research that hierarchical level coincides with the focus of identification among employees.

*Control variables.* In line with prior research on strategic consensus in organisations, we controlled for influencing factors in the environment (Homburg et al., 1999; Priem, 1990; West and Schwenk, 1996) as well as the strategic configuration of the business unit (Bowman and Ambrosini, 1997; Dess and Priem, 1995) that could either impact the level of erosion in the organization (for H2 and H3) or the performance growth of the business unit (H4). We sought to include the same control variables for the tests of H2/H3 and H4, but had to limit the number of controls for H4 due to the small sample size. As more competitive and internationally exposed environments could result in more organisational uncertainty and thus lead to higher erosion as well as performance differences, we included *market importance*, a ratio of the exports of the local market vis-à-vis the world exports of this industry, based on OECD statistics. Given this control is linked to industry, it is a surrogate control for industry. For H2 and H3, we also included dummy variables for the region of the business unit, i.e. *Asia* and *Europe* (America was used as a baseline). To account for internal strategic variation, we controlled for the *vertical scope* of the business unit, indicating whether the unit was a functional unit within its

parent corporation (0) or a full scope business unit (1), and for *strategic change*, a qualitative assessment of the level of change the business unit had experienced over the last five years (0 = no significant changes, 1 = major new initiative, 2 = completely new/high risk business). In order to control for *past performance*, we also included the profit growth during the three years before the survey. For the tests for H2 and H3, we also controlled for *employees*, the average number of respondents for each practice. In addition, *mean perception* and the level of *dispersion* (the standard deviation) on each practice variable was included to show that the hierarchical erosion effect is distinct from dispersion.

## Results

*Hierarchical pattern of erosion.* Hypothesis 1 argued that we would observe significant differences in the favourability of perceptions of organizational practices across hierarchical levels within the business units. We tested this using the individual-level data, i.e., 4,243 individual evaluations of eight organizational practices. Table II displays the ANOVA analyses, including the hierarchical erosion effect score for each of the nine practices. In support of Hypothesis 1, hierarchical level accounts for a significant portion of the variance in perceptions of each practice, after controlling for company-level effects.

More specifically, we argued that favourability of perceptions would be lower amongst lower-level employees as compared to higher-level employees. We compared the perceptions across hierarchical levels by calculating the mean perception at each level, and testing for significant differences between these means (Scheffe's test). Table III displays the means across the four levels of respondents for each practice, and the significance level of the differences between each pair of levels. In support of H1, the means demonstrate a pattern of declining evaluations across levels, meaning that scores decrease as levels descend. The mean differences between the top two levels of management are small, but for all other pairs of differences there are large and statistically significant differences, consistent with our hypothesis. These trends in hierarchical erosion are graphically illustrated in Figure 1.

*Predicting the extent of erosion.* Our theory indicates that the nature of the practice implementation will influence the extent of hierarchical erosion, such that those practices which are implemented using a top-down approach will be more subject to such erosion. To empirically examine this, we constructed a dataset, where each observation consisted of the erosion score on a practice in each business unit (i.e., 9 practices x 38 business units so  $n = 342$ ). Descriptive statistics are shown in Table IV and the results of the OLS regression analyses in Table V.

Specifically, Hypothesis 2 argued that practices with front-line input to implementation would have a lower level of hierarchical erosion than those with top down implementation, and this is supported (Table V, Beta = 3.183,  $p = 0.005$ ). Hypotheses 3 argued that the hierarchical erosion effect would be lower in businesses where there is greater access to strategic information at lower levels, and this is also supported (Table V, Beta = -2.114,  $p = 0.044$ ). These two coefficients are still significant after controlling for market importance, vertical scope, strategic change, past performance, location, level of

strategic change, region number of employees, mean evaluations of each practice and its dispersion. It is also important to note that the effect of the mean scores on the practices on erosion was not significant. Hence it is not simply the case that business units with higher overall ratings of the practices show less erosion. For example, a business unit might have an overall mean suggesting favourable ratings for decision discretion compared to other business units, but still experience hierarchical erosion, such that there is a large discrepancy in how decision discretion is viewed by the top of the organization, as compared to those lower in the hierarchy.

*Relationship with performance.* To test Hypothesis 4, we created an aggregated dataset at the business-unit level, to establish whether the hierarchical erosion effect had a significant and negative relationship with objective performance ( $N = 36$ ). We controlled for the same aspects of the business unit context as in H2. Table VI shows the correlation matrix and Table VII provides the OLS regressions with the aggregated hierarchical erosion effect score as the independent variable, and business unit performance as the dependent variable.

The hypothesized relationship between hierarchical erosion and performance was significant and negative, providing overall support for Hypothesis 4. In terms of control variables, *past performance* is significant and positively pointing as one might expect towards a path-dependency of profit growth. *Strategic change* showed a negative and significant effect throughout, suggesting a negative effect of strategic change on profit growth in the following years. Also, the relationships with *mean evaluations* of practices were positive and significant throughout, indicating that a higher rating of these practices is positively associated with profit growth, and the effect of *dispersion* was negative and significant.

To test the robustness of our models with the inclusion of different control variables, we also ran models alternatively adding the unit's *geographic scope* (domestic versus international), its regional *location* (America, Europe, Asia), the *market growth* in the respective industry based on OECD data, and *market competitiveness*, the market's relative ranking in the IMD world competitiveness index. We expanded the window of profit growth to four and five years after the survey. We also conducted the same analysis using revenue growth instead of profit growth as the dependent variable. Across all these variations, the models' main effects remain unchanged, indicating robustness of the negative association of hierarchical erosion and performance.

## DISCUSSION

In this paper, we introduced the hierarchical erosion effect, which provides a new perspective on the broad phenomenon of heterogeneity and internal conflict within organizations, a key theoretical pillar of the Carnegie School (Gavetti et al., 2007; March and Simon, 1993). We developed theoretical arguments as to why the hierarchical erosion effect exists, the conditions under which it arises, and how it relates to business performance. We consistently found that employee perceptions become less favourable as hierarchical level in an organization decreases, across ten different organizations from a variety of industries. The magnitude of hierarchical erosion is lower in business units where lower level employees have greater access to strategic information, and when

Table III. Tests for differences in means across hierarchical levels (Hypothesis 1)

<i>Practice</i>	<i>Non Mgmt (1)</i>		<i>Line Mgmt (2)</i>		<i>Middle Mgmt (3)</i>		<i>Senior Mgmt (4)</i>		<i>Scheffé's test (which pairs of means are different at <math>p &lt; 0.05</math>)</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Individual goal setting	4.22	0.98	4.56	0.90	4.79	0.92	4.94	0.88	1-2; 1-3; 1-4; 2-3; 2-4
Group performance measurement	4.06	1.12	4.40	1.07	4.69	1.08	4.91	1.01	1-2; 1-3; 1-4; 2-3; 2-4
Individual performance appraisal	4.21	1.12	4.51	1.06	4.73	1.08	4.85	1.04	1-2; 1-3; 1-4; 2-3; 2-4
Communicating vision	4.16	1.24	4.53	1.17	4.82	1.15	5.15	1.14	1-2; 1-3; 1-4; 2-3; 2-4; 3-4
Incentive compensation	3.56	1.29	4.06	1.20	4.49	1.14	4.66	1.13	1-2; 1-3; 1-4; 2-3; 2-4
Recruiting	3.27	1.34	3.67	1.35	4.23	1.24	4.33	1.17	1-2; 1-3; 1-4; 2-3; 2-4
Decision discretion	4.26	1.11	4.59	1.05	4.81	1.03	4.73	1.00	1-2; 1-3; 1-4; 2-3
Practice transfer	4.29	1.11	4.56	1.03	4.69	1.05	4.78	0.89	1-2; 1-3; 1-4
Capital allocation	4.12	1.15	4.51	1.10	4.96	1.16	5.00	1.12	1-2; 1-3; 1-4; 2-3; 2-4

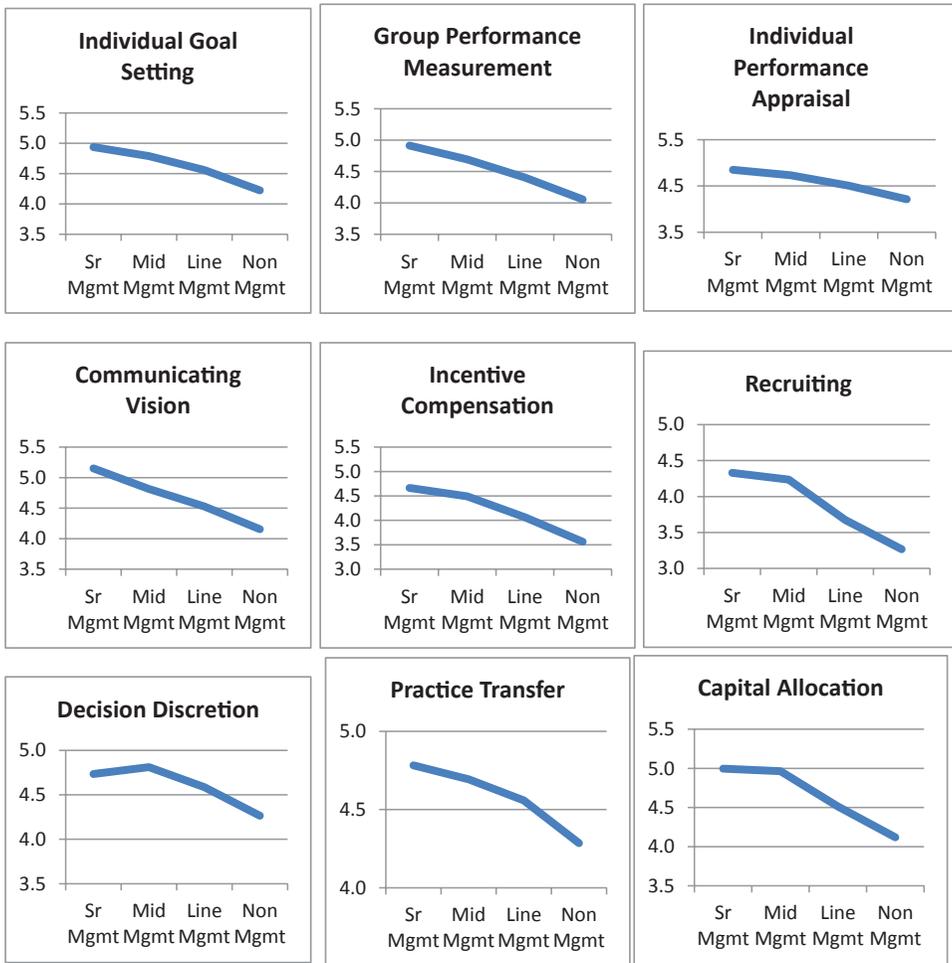


Figure 1. Illustration of hierarchical erosion effect

practices are implemented with more front-line input. Furthermore, hierarchical erosion is negatively related to business unit performance, even after controlling for the mean on each practice and dispersal of perceptions (the more common measure used in the literature). This indicates that the effect is not simply about creating favourable practices such that a strong culture results, but rather agreement across hierarchical levels is essential. Therefore, the main contribution of this study is the theoretical development, measurement and empirical testing of the hierarchical erosion effect, which both addresses several gaps in the literature and opens new avenues for future research.

**Implications for Theory**

First, we provide a new perspective on the phenomenon of differences in perceptions by expanding both the locus and content under investigation. In our empirical study,

Table IV. Descriptive statistics for practice/business unit level data (Hypothesis 2 and 3)

	<i>N</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Hierarchical erosion (on x)	342	7.64	11.59	1										
2. Past performance	342	-0.66	1.95	-0.127	1									
3. Vertical scope	342	1.37	0.48	0.051	0.236	1								
4. Strategic change	342	1.71	0.51	-0.094	0.282	0.006	1							
5. Market importance	342	1.65	0.81	-0.004	0.301	-0.136	0.399	1						
6. Europe	342	0.37	0.48	-0.167	0.035	-0.244	-0.316	0.387	1					
7. Asia	342	0.32	0.47	0.102	-0.417	0.185	0.053	-0.351	-0.519	1				
8. Employees	342	96.98	126.29	0.396	-0.542	-0.130	0.163	-0.044	-0.341	0.554	1			
9. Mean (for practice x)	342	4.49	0.51	-0.215	0.257	-0.089	-0.120	-0.041	0.096	-0.368	-0.362	1		
10. Dispersion (for practice x)	342	1.09	0.22	0.361	0.173	0.215	0.056	0.232	0.041	0.012	0.029	-0.438	1	
11. Front line input to implementation	342	0.56	0.50	-0.235	0.001	0.000	0.001	0.001	0.000	0.000	0.009	0.306	-0.412	1
12. Strategic Access to Information	342	4.57	0.62	-0.157	-0.013	-0.273	-0.298	-0.064	0.218	-0.290	-0.299	0.500	0.134	0.000

All values > 0.127 are sig. at 0.05 level (2-tailed).

Table V. Regression analyses: Antecedents of the hierarchical erosion effect (Hypotheses 2 and 3)

	<i>Control model</i>			<i>Antecedents of hierarchical erosion</i>		
	<i>B</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>B</i>	<i>Std. Error</i>	<i>Sig.</i>
(Constant)	-4.936	8.739	0.573	-3.08	8.917	0.730
Past performance	0.385	0.387	0.320	0.288	0.388	0.458
Vertical scope	0.781	1.193	0.513	0.469	1.231	0.703
Strategic change	-6.79	1.358	0.000	-7.29	1.357	0.000
Market importance	0.551	0.897	0.539	0.795	0.89	0.372
Europe	-5.809	1.566	0.000	-5.751	1.547	0.000
Asia	-6.927	1.603	0.000	-6.703	1.585	0.000
Employees	0.051	0.006	0.000	0.05	0.006	0.000
Mean (for practice x)	0.31	1.274	0.808	2.243	1.443	0.121
Dispersion (for practice x)	18.729	2.818	0.000	17.071	2.997	0.000
Front line input to implementation (H2)				<b>-3.183</b>	<b>1.137</b>	<b>0.005</b>
Strategic access to information (H3)				<b>-2.114</b>	<b>1.048</b>	<b>0.044</b>
	Adj R2 = 0.360			Adj R2 = 0.377		
	F = 22.347 (p = 0.000)			F = 19.755 (p = 0.000)		

DV = Hierarchical Erosion for practice/business unit pair N = 342.

we incorporated the perceptions of employees across four hierarchical levels, which allowed us to capture perceptual differences more comprehensively than in prior studies, and in a way that reflects the reality of large, complex organizations. We showed that favourability of views differ significantly across senior manager, front-line manager, and non-managerial levels, with consistently more favourable views, the higher the level of employee. These findings enrich our understanding of the organization as a 'coalition of heterogeneous participants with conflicting interests, goals and knowledge' (Gavetti et al., 2007, p. 528). By showing that one dimension of heterogeneity in employee perceptions is due to their hierarchical position, we can start to understand the sources and consequences of that heterogeneity better.

Second, we introduce a new operationalization of perceptual differences that goes beyond existing measures such as standard deviation or difference scores. The operationalization of hierarchical erosion as Type III Sum of Squares for hierarchical level in the organization allows us to differentiate the magnitude of differences across hierarchical levels from simply dispersion of perceptions (captured by a standard deviation measure). The application of this measure also has advantages as compared to recently suggested approaches such as polynomial regression (Gibson et al., 2009) or consensus mapping

Table VI. Descriptive statistics for business unit level data (Hypothesis 4)

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>I</i>	2	3	4	5	6	7
1. BU performance	36	-9.80	24.83	1						
2. Market importance	38	1.65	0.82	0.074	1					
3. Vertical scope	38	1.36	0.48	0.164	-0.136	1				
4. Strategic change	38	1.71	0.51	-0.303	0.399	0.006	1			
5. Past performance	38	0.23	1.08	0.088	0.338	-0.018	0.499	1		
6. Mean (across 9 practices)	38	4.40	0.39	0.574	-0.057	-0.124	-0.166	0.108	1	
7. Dispersion (across 9 practices)	38	1.07	0.11	0.092	0.384	0.355	0.093	0.065	-0.319	1
8. Hierarchical erosion (across 9 practices)	38	6.55	7.81	-0.247	-0.005	0.071	-0.118	0.127	-0.198	0.335

All values > 0.334 are sig. at 0.05 level (2-tailed).

Table VII. OLS regression analyses of hierarchical erosion effect on business unit performance (Hypothesis 4)

	<i>Control model</i>			<i>All practices</i>		
	<i>B</i>	<i>Std. Error</i>	<i>Sig.</i>	<i>B</i>	<i>Std. Error</i>	<i>Sig.</i>
(Constant)	4.502	21.727	0.837	-218.555	50.083	0.000
Past performance	6.450	4.185	0.133	9.700	2.978	0.003
Vertical scope	12.020	8.386	0.162	9.087	6.327	0.162
Strategic change	-25.226	9.462	0.012	-25.100	6.834	0.001
Market importance	6.707	6.848	0.355	0.854	5.196	0.871
Mean (Across 9 practices)				37.472	7.659	0.000
Dispersion (across 9 practices)				69.202	26.799	0.015
Hierarchical erosion (across 9 practices)				-1.096	0.343	0.003
		Adj R <sup>2</sup> = 0.123			Adj R <sup>2</sup> = 0.595	
		F = 2.227			F = 8.358	
		(p = 0.089)			(p = 0.000)	

DV = Business Unit Profit Growth over 3 years after survey N = 36.

(Tarakci et al., 2014), as it is a parsimonious way of capturing differences across multiple levels and organizations. We hope that these findings help to prompt further empirical studies of the extent to which dispersion of views and hierarchical erosion of those views influence macro-level outcomes.

Third, we build on March and Simon (1993) to suggest that perceptions of organizational practices are affected by how much the individual identifies with the organization as a whole, with lower level employees identifying more with their specific sub-group or task, and therefore evaluating organization-wide practices less favourably. One implication for theory then, is that developing a common loci of identification across levels in the organization may help to develop coherence in perceptions, which then could promote strategy implementation or change management. This suggests intriguing directions for future research, including understanding how common loci of identification can be encouraged, and then exploring the effects of such interventions. For example, perhaps establishing the organization as a whole as the primary source of common identity is optimal. Scholars have proposed a common superordinate identity is beneficial, but have primarily examined this phenomenon within small groups or across two demographic categories (e.g., racial groups) (see Dovidio et al., 2009 for a review). Our findings suggest it may be promising to investigate this within organizations across hierarchical levels. We also show that access to strategic information and front-line relational coordination during implementation of practices results in less erosion. An important avenue for future research would be to develop and test additional arguments about the mechanisms underlying this phenomenon. For example, perhaps shared leadership or cross-unit

teams enable greater consensus to develop, and in so doing, reduce hierarchical differences in perception. Exploring these mechanisms would extend our theory and provide additional evidence for the value of such managerial techniques.

Fourth, our findings shed new light on the contested relationship between consensus and performance in organizations. Past research has provided mixed evidence on this relationship, often suffering from small sample sizes or too narrow a focus (in terms of hierarchical levels and focal issues). Our study overcame many of these limitations by measuring multiple organizational practices across four hierarchical levels and across 38 business units. We were also able to consider control variables in the external and internal environment that have been suggested by prior studies. As a result, we were able to document that the hierarchical erosion effect was consistently significant and negatively related to growth in profits, even after controlling for dispersion effects (which are most often the focus of prior research). This finding helps to explain why past studies were sometimes inconclusive. Although we investigated a variety of practices, a useful extension of our theoretical advancements would be to include other organizational features, such as organizational processes, corporate reputation, or innovation activities, to determine if hierarchical erosion regarding these features is also negatively related to growth in profit.

Putting these points together, our findings allow us to develop a nuanced view of what exactly 'hierarchy' means in an organizational setting. A Weberian perspective on hierarchy emphasizes formal authority relationships, whereas a March and Simon perspective eschews a discussion of formal authority, and focuses on individual identification within nested subsystems of activity. Our findings suggest there is validity to both these perspectives, and that their relative salience varies significantly, from one organizational practice to another, and from one business unit to another. But in the best performing businesses (where the 'motivation to produce' is stronger), there is less heterogeneity in the favourability ratings of practices across hierarchical levels. The antecedents to this include front-line implementation and access to strategic information. This is consistent with the more malleable notion of hierarchy developed by March and Simon (1993) which downplays the importance of formal authority as a means of enabling alignment and coordination, and highlights the coordinative capacity of relational norms.

### **Suggestions for Future Research**

Given that both organizational behaviour and strategy literatures have examined the notion of differences in employee perceptions, we hope that our findings help to prompt further research on how these two literatures intersect. For example, further integrating ambidexterity research (e.g., Gibson and Birkinshaw, 2004) could be a natural next step to further develop the construct of hierarchical erosion. It would be interesting to consider whether hierarchical erosion might be viewed as a form of alignment and (if so) how it might complement existing conceptualizations of alignment already in use in the literature. By explicitly comparing the different perspectives on alignment, we would advance our understanding of this important organizational phenomenon, while also serving to further integrate the strategy and organizational behaviour literatures.

We note ways that future research can extend and apply these ideas at individual and interpersonal levels. Current research indicates that differences in perceptions are linked to the organization's ability to achieve desired strategic goals (such as performance). From a perceptual congruence perspective, we invoked individual level behaviours as mechanisms for why this occurs. Only by integrating both perspectives, and by using several types of measures, were we able to attain this understanding. Future research could further explore the extent to which empowerment (or sharing of responsibility, control, and decision-making autonomy) of employees is associated with the hierarchical erosion process. Research has indicated that when lower level employees have discretion regarding the enactment and execution of policies, the organization is more responsive to individual and situational needs (Adler, 2012; Hempel et al., 2012; Schneider et al., 2003), and empowerment processes are influenced by the quality of the dyadic relationships built between leaders and those they lead (Chen et al., 2007). Future research could study whether empowerment of employees is important for both the resolution of hierarchical erosion, and for understanding the causes of breakdowns of consensus that occur across levels. March and Simon (1993) referred to the tension involved in managerial empowering processes, stating how 'close supervision increases the visibility of power relations within the organization, raises the tension level in the work group, and thereby upsets the equilibrium originally based on the institution of rules' (p. 64), while theorizing that such close supervision (or lack of empowerment) is associated with organizational participation and retention. Given increased interest in recent years of team empowerment and empowering leadership, understanding the associations between empowerment and the hierarchical erosion effect is a worthwhile endeavour.

The role of lower levels employees in resolving the tensions that might be created when there is a lack of alignment between local needs and higher-level strategic concerns is also mentioned in the literature on paradox (Lewis, 2000). Organizations face many competing demands (Besharov and Smith, 2014; Smith, 2014; Smith and Lewis, 2011) and studies suggest that successful organizations reconcile competing orientations by embracing paradoxical (both/and) thinking, rather than trade-off (either/or) thinking (Lewis, 2000). Our paths to reducing hierarchical erosion might also encourage paradoxical thinking, in turn, aligning concerns among lower level employees with those at the top. We encourage future research which examines these ideas.

Another interesting avenue for research is the evolution of hierarchical erosion over time. Given that culture is purportedly driven from the top, perhaps hierarchical erosion provides a way of ascertaining whether or not similarity of perceptions of organizational practices shape strategic direction or the effectiveness of human resource practices. Studying change processes, such as mergers and acquisitions or competitor entry, may offer insights as to the impact of change and transitions on shared perceptions at different levels. Such designs would also increase precision in our understanding of the direction of causality of the relationship with performance. We argued that a low degree of hierarchical erosion makes it easier for a chosen set of strategic priorities to be implemented, and we found hierarchical erosion to be negatively related to performance growth in subsequent phases. At the same time, when performance is improving, employees are more likely to become engaged in contributing to what they perceive as a successful activity, thereby potentially reducing the level of hierarchical erosion. We therefore

speculate that there is reciprocal causality between these two variables, which could be addressed in future research, perhaps using a quasi-experimental design, to improve the prospects of making causal inferences.

Finally, the question exists as to whether hierarchical erosion can ever be beneficial for an organization. Similar to the theorizing on the limits of (overall) consensus, one could think of situations where excessive levels of agreement across levels are damaging because of group-think or inertia (Priem, 1990; Priem et al., 1995), such as in very dynamic environments (Markoczy, 2001). Our controls allowed us to examine effects after taking such environmental differences into consideration, but research designed to specifically investigate the boundary conditions of the negative effects of hierarchical erosion would be a welcome extension of this study.

### **Implications for Practice**

We suggest that our findings have potentially important implications for practice. The tendency for lower-level employees to perceive practices less favourably than their managers is a pervasive one, and in our experience it is often a source of puzzlement for senior executives. Our research provides both a theoretical explanation for why these gaps in perception occur, and also preliminary evidence that they matter for performance. The business units in our sample had very different levels of performance, with some achieving significant profit growth in the years following our survey and others experiencing a substantial decline in profits over the three-year period. Our findings showed clearly that a reduction in hierarchical erosion is significantly correlated with future profit growth.

An important point for executives to consider is what sort of techniques they might employ to reduce hierarchical erosion. Our results indicate that there is less hierarchical erosion when practices are implemented through a bottom-up approach, which emphasize relational norms as a coordination mechanism rather than formal authority. This suggests clear paths for strategic change and the importance of developing champions for change at the front line. Even if a clear designation of hierarchical levels exists in an organization, this does not necessarily mean formal authority must be the means of coordinating action (Littler et al., 2003). All of the organizations we examined had the same four levels of hierarchy designated, but some were more adept at using informal relational norms for coordinating, whereas others relied more on formal authority. The former experienced less hierarchical erosion of perceptions.

In addition, Ketokivi and Castaner (2004) provide evidence that communication and participation in the strategic planning process play a critical integrative role, enabling organizational members to develop a common view of organizational phenomena to reach goal convergence. Other suggestions include careful examination of data from entry, exit and general employee surveys to gain a deeper understanding of how key recruitment, retention and performance factors vary across hierarchical level or specialties (Scotti and Harmon, 2014). Recent research has also emphasized the importance of techniques that enable employees and managers to make sense of how they and others react to information and problems (Hodgkinson and Healey, 2011). Focus groups aimed at developing this understanding, as well as after-event reviews (e.g., taking the pulse of

the organization following a major launch or initiative) are specific means of incorporating these techniques. It would be interesting to examine if such processes play a mediating role between hierarchical erosion and performance.

At the individual level, while we know that shared understanding and perceptual congruence are helpful for team-leader relations and shared affect, this study provides a more complete understanding of the mechanisms by which similarities in perceptions influence higher level outcomes, such as business unit performance. This knowledge can help sharpen planned interventions aimed at increasing similarity of views. For example, if a firm is performing less well than desired, an executive may take steps such as increased information sharing across hierarchical levels. Given the tendencies associated with identification that we reviewed earlier, it will be important for this to include both knowledge regarding successes and failures, because it is the former that those at the lower levels may need to increase their overall identification with the organization, while it is the latter that those at the top may need to fully understand the health of the organization.

## CONCLUSION

Since March and Simon (1958/1993) it has been an article of faith that organizations are coalitions of individuals with diverse perceptions, interests and goals, and many rich areas of study have developed on the basis of this axiom. However, there has been surprisingly little research exploring the nature of internal heterogeneity within organizations. We sought to address this gap in knowledge by developing the concept of hierarchical erosion, as an important and often-overlooked dimension of internal heterogeneity, and by examining the reasons it emerges and also its consequences for organizational performance. We hope others build on our findings to further enrich our understanding of the nature of contemporary business organizations.

## NOTE

- [1] To be specific, there was initial disagreement on 'Incentive Compensation' but the experts converged on the view that even though such compensation is often promoting front-line initiative, the rules around how it is determined are set from the top. 'Individual Goal Setting' was the other practice where the experts disagreed. However, we ran a robustness check in which this practice was coded as 'top down' rather than 'front line' and OLS regression results were not changed (front line input significant at  $p < 0.00$ ; access to strategic information significant at  $p = 0.034$ ).

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