



International attention and multinational enterprise performance

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Abstract

This study examines the performance consequences of international attention, defined as the extent to which headquarters executives in the multinational enterprise (MNE) invest time and effort in activities, communications, and discussions aimed at improving their understanding of the global marketplace. Using detailed questionnaire and archival data on 135 MNEs, our analysis revealed three significant findings. First, international attention can be operationalized as a meta-construct that consists of three interrelated and reinforcing dimensions. Second, international attention has a curvilinear (inverted U-shape) relationship with MNE performance. Third, the performance benefits of international attention increase with three categories of moderating factors: the international assignment experience of top executives, the independence of value-adding activities across country locations, and the degree of industry dynamism.

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INTRODUCTION

To achieve competitive success in the global marketplace, it is not enough for the multinational enterprise (MNE) simply to manufacture and sell its products on a global basis; in addition, it has to understand the meaning of differing competitive dynamics in complex multicultural settings (Athanassiou & Nigh, 2000; Carpenter, 2002), to behave as a collective whole (Roth, 1995), and to tap into new ideas wherever in the world they arise (Bartlett & Ghoshal, 1989; Murtha, Lenway, & Bagozzi, 1998). Such a broad repertoire of capabilities requires a high level of awareness and knowledge on the part of the MNE's top executives (Pralhad, 1990). In a complex and multifaceted competitive environment, we argue that it is critical for headquarters (HQ) executives¹ to develop *international attention* (defined as the extent to which they invest time and effort in activities, communications, and discussions aimed at improving their understanding of the global marketplace). International attention ensures that the MNE is abreast of the salient changes underway in its international business environment, and that it is in a position to respond through informed strategic actions (Bouquet, 2005).

But international attention is surprisingly difficult to achieve. For example, it has been shown that less than 9% of patents in US firms

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come from research conducted abroad (Doz, Santos, & Williamson, 2001), and that only seven of the Global Fortune 500 companies have a global (rather than regional) distribution of sales and assets (Rugman & Verbeke, 2004), suggesting that many executives continue to search locally for new sources of ideas and technology (Dunning, 1996; Levinthal & March, 1993; Nelson & Winter, 1982). So while most HQ executives understand the value of looking around the world for the best sources of ideas and knowledge, they seldom have the luxury to attend to all of the signals that matter, so priorities have to be set. A number of prior studies have investigated the allocation of attention in MNEs. We have some idea of how HQ executives focus their thoughts, energy, and effort across the firm portfolio (Birkinshaw, Bouquet, & Ambos, 2007; Bouquet & Birkinshaw, 2008; Calori, Johnson, & Sarnin, 1994); we know that their attention decisions contribute to shape the geographic scope of the firm (Levy, 2005), and we have evidence that their global mindsets can promote success in increasingly competitive marketplaces (Govindarajan & Gupta, 2001; Levy, Beechler, Taylor, & Boyacigiller, 2007). But there has been surprisingly little consideration in the literature – thus far – of how the *actual practices* used by executives to pick up on and respond to international stimuli affect MNE performance.

Our paper seeks to address this gap by investigating three specific questions. First, *how can the concept of international attention be operationalized in a theoretically rigorous and empirically valid manner?* While at the turn of the century James (1890) stated that “everybody knows what attention is,”² researchers in international business have largely differed in their operational approach. Some have viewed attention as a tacit psychological mechanism that guides and constrains managers’ understanding of the world (Daft & Weick, 1984). Others have adopted a more holistic approach by investigating the characteristics of the situated contexts and practices in which cognition and action take place (Ocasio, 1997). We adopt the latter point of view on international attention, and conceptualize it as a meta-construct that consists of three interrelated and reinforcing dimensions (Law, Wong, & Mobley, 1998). We then validate this operational approach in our empirical study.

Second, we address the question: *how does international attention relate to MNE performance?* As many prior MNE studies would suggest, international attention brings insights that improve how well HQ executives understand opportunities

and threats in the global business environment. At the same time, it also constitutes a drain of corporate resources that can ultimately become counter-productive. Consistent with this view, we argue that a curvilinear (inverted U) relationship exists between international attention and MNE performance.

Third, we investigate the possibility of moderating influences: *what factors influence the relationship between international attention and MNE performance?* We develop the reasoning that three categories of factors impact the performance benefits of international attention: the experience that HQ executives have accumulated in foreign markets; the independence of value-adding activities across country locations; and the degree of industry dynamism.

This paper is organized as follows. We draw on research in the organizational and international business literatures to define and operationalize international attention. We develop a set of hypotheses to answer the research questions posed above. These hypotheses are then tested using data collected from a combination of questionnaire and archival sources on a cross-national sample of 135 MNEs. Finally, we present our findings and discuss their implications for theory and practice.

THEORETICAL BACKGROUND

Attention Perspectives

Top managers are confronted with far more information than they can handle, and so they have to be selective in those aspects of the environment that enter their consciousness (Cyert & March, 1963; March & Simon, 1958; Mintzberg, 1973). This assumption of bounded rationality has stimulated a large literature on attention, which can be studied in at least two ways. First, attention can be used to depict the initial step in the tripartite information-processing sequence of attention, interpretation, and action (Daft & Weick, 1984). Here, the inner experiences and cognitive templates or schemas of individuals are emphasized because they are central to explaining how managers discriminate among available stimuli, selecting those that will be given further consideration, and discarding others (Calori et al., 1994; Huff, 1990). For example, studies investigating the processes of problem recognition (Cowan, 1986), sensing (Kiesler & Sproull, 1982), and strategic issue diagnosis (Dutton & Duncan, 1987; Dutton, Fahey, & Narayanan, 1983) all view attention as a collection of relatively tacit

psychological mechanisms that activate, buffer, or guide managers in their strategic thoughts.

The second and complementary approach to attention is anchored in the study of concrete managerial practices (Ocasio, 1997; Ocasio & Joseph, 2005). The argument here is that attention is socially embedded, and cannot be explained solely by reference to cognitive processes. According to Ocasio (1997: 190), attention is intrinsically linked to the immediate context in which cognition and action are situated. Managers enter particular types of procedural and communication channels (e.g., they conduct meetings and interact with other organizational participants) to process issues available for their consideration. And it is by understanding how much time and effort they invest in the course of such activities that one gains evidence as to what constitutes their actual focus of attention (Bouquet & Birkinshaw, 2008; Cho & Hambrick, 2006; Hansen & Haas, 2001; Ocasio, 1997). Thus Ocasio's framework emphasizes the organizational practices in which the real work of managers take place (Chia, 2004; Jarzabkowski, 2004; Jarzabkowski, Balogun, & Seidl, 2007; Wilson & Jarzabkowski, 2004), rather than particular sources of cognitive influence.

Our paper builds upon this more behavioral, practice-oriented view of attention (Ocasio, 1997; Ocasio & Joseph, 2005), and extends it in three ways. First, we operationalize Ocasio's thesis that the attention of a firm's top managers refers to a collective investment of time and effort that is situated within an entire system of activities, communications, and discussions. Second, we examine how this attention affects organizational performance – a topic that Ocasio (1997) speculates about but does not develop fully. In doing so, a third contribution of our model is that we examine the performance implications of international attention by considering both its direct influence, and how it interacts with important spheres of cognitive influence. That is, we look at how the attention of top team managers, their accumulated experience, and critical aspects of the environment in which they operate come together in specific combinations to create a form of "situated cognition" that has implications for organizational outcomes and performance (Elsbach, Barr, & Hargadon, 2005; Gavetti, 2005; Shattuck & Miller, 2006; Yeh & Barsalou, 2006). Our study therefore takes an important step to explore the relationships that exist between attention practices, cognitive influences, and firm performance.

Three Central Facets of International Attention

As already noted in the introduction, international attention constitutes the extent to which HQ executives invest time and effort in activities, communications, and discussions aimed at improving their understanding of the global marketplace. This definition highlights three important elements: it portrays attention as a broad vehicle for learning about important events, trends, opportunities and threats in the firm's global environment; it views attention as the shared capacity of a collective of senior HQ executives (rather than just the CEO or another individual); and it is operationalized by investigating the concrete procedural and communication channels in which HQ executives participate. The channels that guide the attention of a firm's top managers encompass a multifaceted set of practices, which may include the meetings of the board of directors, executive committee meetings, strategic planning sessions, brainstorming exercises, written and verbal communications, off-site retreats, luncheons, elevator conversations, industry conventions, and many other things (Mintzberg, 1973; Ocasio & Joseph, 2005). For this research, it was not our intent to provide a comprehensive list of all possibly relevant channels. Rather, we sought to identify the set of managerial practices that could serve as the most critical conduits for generating international attention. To this end, we conducted a careful review of international business literature, and undertook research interviews with 18 senior executives at the corporate HQ level (see Appendix A for details). As a result of this process, we concluded that international attention was best conceptualized as a meta-construct that consists of three component dimensions, as follows.

Global scanning. These are activities that can help the identification, gathering, and interpreting of opportunities and threats as they emerge across markets and cultures (Ghoshal & Kim, 1986; Ghoshal & Westney, 1991; Hambrick, 1982). Many executives we interviewed suggested that international attention could be seen as a type of environmental surveillance activity. For example, one senior executive noted:

When I think of international attention, I think of the need to do a proper environmental scan. At our company, we actively monitor the business and market environments in different regions. We look at all business trends and currency fluctuations, and try to assess what the impact will be on our business results. We use business intelligence

software to analyze customer data along a variety of different factors. Based on this data, we notice things that matter and make decisions that support our business objectives.

Overseas communications. These are the conversations that decision-makers have with overseas managers and other sets of major constituencies worldwide – for example, suppliers, customers, and public officials (Daft & Lengel, 1986: 559; Weick & Van Orden, 1990) – to comprehend international signals that are more tacit in nature, and that could not be well understood through the use of scanning activities alone. Our interviewees often noted that international attention works best through regular face-to-face encounters. Electronic communications are useful, but not as rich as face-to-face meetings, as the following quotes illustrate:

It is often difficult to forecast and establish what is happening in local markets, let alone remote economies. But we have different demands from different customers around the world. So we need to go out and see them.

Our CEO travels quite a bit across the various geographies to listen to the feedback of our global customers, and often comes back with a wealth of ideas that we can use in all of our markets. He is also very much involved in quarterly business reviews that are done throughout various geographies like Europe and Asia.

Globalization discussions. These are the internal debates between senior executives of the parent company that allow them to converge on a common interpretation of global sources of insights when making important strategic decisions (Huff, 1988; Weick & Roberts, 1993). One of the managers we interviewed noted:

Significant thrusts in terms of international strategy are debated at the executive council level. They are not the responsibility of one person. We meet every month and spend most of our time talking about what we call the top stakeholders' issues. We collectively assess how we are doing against the global objectives. We discuss economic conditions, and resolve emerging or outstanding issues.

Our research interviews led us to observe that these three component elements reinforce and complement one another. It therefore makes little sense to argue that there is a higher-order latent construct called "international attention" that can be manifested solely, for example, in terms of global scanning. Instead, we view attention as an aggregate multidimensional construct (Law et al., 1998) that is formed as the composite of three subconstructs, which may or may not co-vary. That is,

changes in the global scanning dimension will not necessarily lead to changes in the communications or discussions dimensions. Rather, the lack of a single dimension will decrease but not totally eliminate the international attention of HQ executives.

International Attention vs Global Mindset

Before proceeding, it is important to clearly distinguish international attention from the related construct of global mindset (e.g., see Levy et al. (2007), for a comprehensive review). Global mindset refers to a cognitive frame of reference that promotes a cosmopolitan attitude towards the world (Hannerz, 1996; Kanter, 1995; Robbins, 1992; Vertovec & Cohen, 2002). International attention, by contrast, indicates how top managers actually focus their time and effort in the course of their work. It tells us how HQ executives behave in action, rather than simply how they focus their thoughts and ideas. Of course we would expect the two constructs to correlate, but we would also expect that situations exist where they diverge. Many companies have been turning their attention to China in recent years, for example, while at the same time recognizing that their collective mindset and knowledge base continue to have their center of gravity in developed markets. By focusing on attention, this paper opens up several avenues for research on the qualities of global leaders.

THEORY DEVELOPMENT

There is a strong tendency in international business literature to assume that international attention (broadly defined) will have a positive influence on MNE performance. For example, Govindarajan and Gupta (2001: 136) stated: "How successful a company is at exploiting emerging opportunities and tackling accompanying challenges depends crucially on how intelligent it is at observing and interpreting the dynamic world in which it operates." But the actual evidence on which such assertions are based is very limited, so it is important to evaluate this putative relationship with some care. As Levinthal and Rerup (2006: 510) observed, associating any specific attention practice "with particular outcomes, particularly more-or-less favorable performance outcomes, cannot be presupposed but must be derived through analysis and empirical observation." The model that informs our research enquiry (Figure 1) questions a general "more-is-better" perspective. Overall, we posit that international attention has a curvilinear (inverted

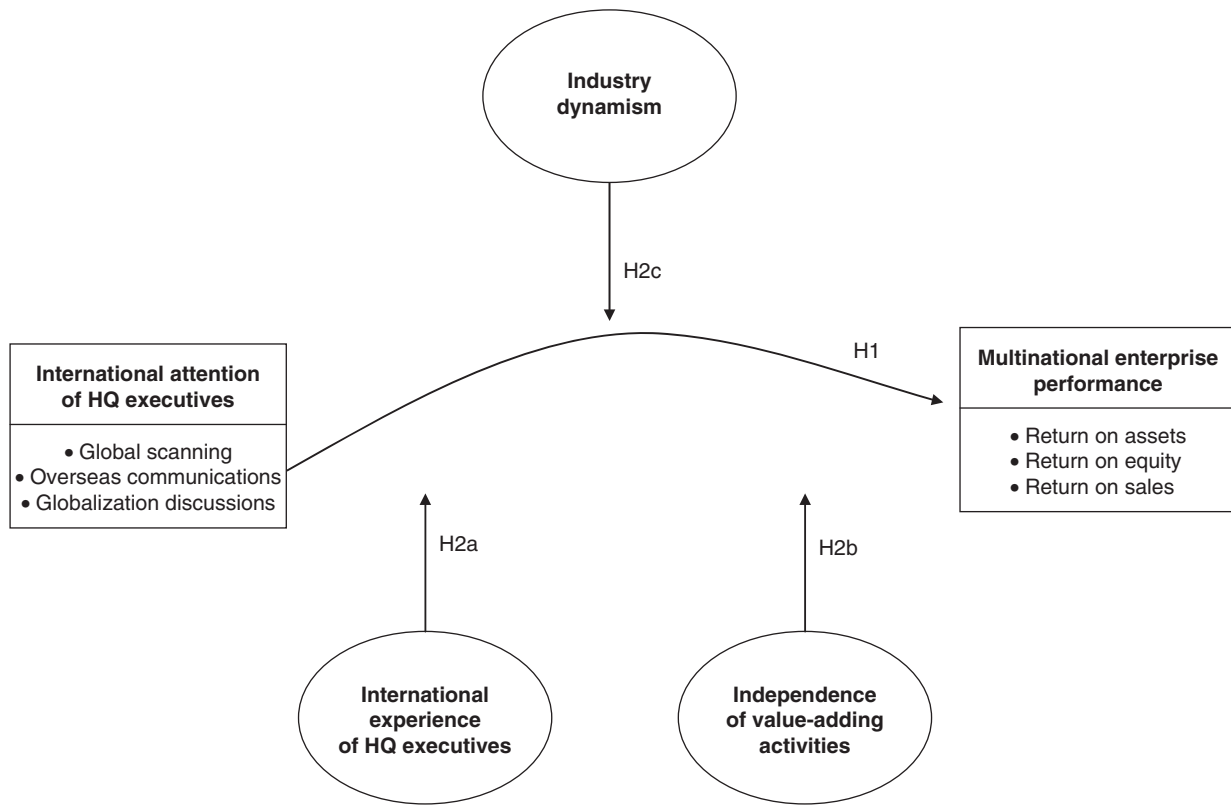


Figure 1 Conceptual framework.

U-shape) relationship with MNE performance (Hypothesis 1), and that this effect is moderated by important sources of cognitive influences on HQ executives – namely, their international experience (Hypothesis 2a), the independence of the MNE’s value-adding activities across country locations (Hypothesis 2b), and the degree of industry dynamism (Hypothesis 2c).

The Curvilinear Effect of International Attention on MNE Performance

International attention may produce valuable benefits for the MNE: it may provide access to superior information sources in the firm’s global environment (Zaheer & Zaheer, 1997); it may facilitate the generation and diffusion of ideas and competencies throughout the multinational organization (Chandler, 1991; Rugman & Verbeke, 2001); and it may signal the willingness of senior executives to integrate foreign perspectives into the decision-making process, and indicate their open-mindedness toward opinions that differ from their own. These advantages may in turn increase the

potential for creating bonds of trust that improve the ease by which corporate HQ are able to successfully conceive and implement their worldwide strategies (Kim & Mauborgne, 1993). Several research studies have indicated findings consistent with these arguments. Daft, Sormunen, and Parks (1988) found that executives in high-performing companies scanned the environment more broadly than executives in low-performing firms. Moreover, as HQ executives communicate with each other and affiliate managers, they also tend to form networks that improve their understanding of the different customer, competitive and country environments in which the MNE operates, resulting in better managerial decisions and improved corporate performance (Venaik, Midgley, & Devinney, 2005). Athanassiou and Nigh (1999, 2000) emphasized the value of globalization discussions among HQ executives as a means of facilitating the formulation, implementation, and control of the MNE’s worldwide strategy.

Notwithstanding the potential value that the MNE generates through such activities, we expect

the overall relationship between international attention and MNE performance to be curvilinear (i.e., an inverted U-shape). Our logic is as follows. Top executive attention (measured in terms of time and effort expended) constitutes a category of strategic asset that comes with several unusual qualities. First, it is always in short supply: unlike certain resources that the firm can simply purchase when needed, top executive attention is finite, and no amount of delegation will entirely ease the burden imposed on individuals at the top. Second, top executive attention is a highly fungible asset that can be applied to multiple challenges and issues, and which can be switched quickly from one issue to another with virtually no downtime. Third, it requires a constant level of cognitive engagement from managers that is highly perishable – by this we mean that it cannot be stored for later use. And fourth, top executive attention generates value indirectly through its complementarities with other firm resources – such as by improving the quality of a capital investment decision – rather than in isolation. These special qualities mean that the opportunity cost of top executive attention is very high, as time and effort spent processing signals from the international marketplace that do not require top executive input could immediately, and relatively easily, be reallocated to other strategic priorities that could benefit from executive attention. It also suggests that the potential for misallocating attention is important, because unlike other resources its usage is rarely monitored or analyzed in detail.

More generally, the deployment of international attention tends to create personal costs for managers, which may take the form of anxiety, cognitive fatigue, stress, and other psychological health problems – as illustrated in the case of executive travel (Bevan, 1999; DeFrank, Konopaske, & Ivancevich, 2000; Miller, 1996; Rogers & Reilly, 2000; Striker, Dimberg, & Liese, 2000). As top executives invest attention in the international marketplace, they become more focused on global competitive developments, they spend more time communicating with overseas colleagues and other industry participants, and they more actively discuss the firm's globalization strategy at corporate HQ. Keeping on top of all these demands can tax even the most competent and energetic executives (Breene, Nunes, & Shill, 2007). The challenge facing top team members, then, is to deploy attention towards those issues that most critically need it. International imperatives need to be balanced

against other important concerns. As one executive we interviewed noted:

It's cumbersome to manage a business globally. The toughest thing I find in being a general manager is balancing the time between internal stuff, chasing new clients throughout the world, a bit of philanthropic activity, staff demands, communication issues ... Balancing all these constituencies is hard. But if global executives allow any of these demands to push the others to the side, they are not doing a good job in terms of maintaining company performance.

But why might HQ executives go beyond this threshold, then, and over-invest in international attention? In part the answer is that the optimum level is invisible and perpetually shifting (depending on the relative priority of other factors). More generally, there are also reasons to believe that managers sometimes stretch their enthusiasm for international issues too far, partly because early gains in performance have boosted their confidence to the point that they do not know when to stop (Contractor, 2007). As international attention starts to bring advantages to the firm, some HQ executives will become "extraordinarily hungry for information" (Sutcliffe & Weber, 2003), and end up committing themselves to an exhaustive and exhausting array of activities and tasks, many of which could be delegated to other organizational participants or specialized intelligence units (Ghoshal & Kim, 1986). Taken together, these arguments are consistent with the assertion that there are general limits to executives' information-processing abilities that can hurt MNE performance (Hennart, 2007). Beyond a certain threshold, international attention may come at the expense of other strategic imperatives or exert a stiff burden on top executives that will diminish their capacity to add value to the global organization. Thus we posit an inverted U-curve relationship as per the following hypothesis.

Hypothesis 1: There will be a curvilinear, inverted U-shape relationship between the international attention of HQ executives and MNE performance.

Moderating Influences

This section considers the possibility of moderating influences. As we argue above, the appropriate level of attention to international stimuli is rarely self-apparent. In addition, this level may vary depending on a number of contextual and individual factors that we think of as "cognitive influences" on

the attention that executives give to international issues (Bartunek, Gordon, & Weathersby, 1983; Calori et al., 1994; Murtha et al., 1998). In this section we consider three spheres of influence, each operating at a different level of analysis. The first is a top management team-level factor, specifically the prior experience that HQ executives have accumulated in foreign markets. The second is a firm-level factor, specifically the extent to which the MNE's subsidiaries act independently of one another. The third is an environment-level factor, specifically the dynamism of the industry in which the MNE is competing. The first of these factors (top management international experience) potentially increases the cognitive *ability* of executives to attend to international stimuli effectively; the latter two (independence of value-adding activities, industry dynamism) both increase the *need* for executives to respond effectively to international stimuli, thereby increasing the positive association between international attention and performance. It should be acknowledged that these factors have often been viewed, in past studies, as direct predictors of MNE performance (Carpenter, Sanders, & Gregersen, 2001; Daily, Certo, & Dalton, 2000). Our distinctive contribution here is to examine the ways in which they interact with the attention that executives pay to international issues in affecting MNE performance.

International experience of HQ executives. Although many large MNEs are global in scope, surprisingly few of their top decision-makers have international experience (Carpenter et al., 2001), defined as living and working in a foreign country for at least a year (Gregersen, Morrison, & Black, 1998). However, we expect the performance contribution of international attention to increase when HQ executives have substantial international experience. The reasoning, as suggested above, is that insights gathered through various scanning, communication, and discussion practices are sufficiently complex to be amenable to a wide variety of meanings, interpretations, and understandings, so they need experience and expertise to be processed appropriately. For instance, the initiatives of a subsidiary company may sometimes be seen as a source of future competitive advantage, sometimes as purely idiosyncratic activities that have few ramifications for the MNE as a whole, and sometimes as maverick types of actions that distract from the overall corporate direction (Birkinshaw, 2000; Rugman & Verbeke, 2001). To effectively

process such developments, HQ executives need the capacity to understand “the need for multiple strategic capabilities, to view problems and opportunities from both local and global perspectives, and to interact with others openly and flexibly” (Bartlett & Ghoshal, 1989: 212). HQ executives with international experience are more capable than others of holding such multiple perspectives in their heads (Bartunek et al., 1983). Often, they can tap into the established networks of relationships (with industry partners, suppliers, subsidiary managers, and government officials) that they have established in various corners of the world, to identify and make sense of issues that are not available to executives who have failed to develop such contacts on the ground.

As their international experience increases, HQ executives also begin to engage in more sophisticated thought patterns that enrich the attention they pay to the international marketplace (Weick & Sutcliffe, 2006). For example, they develop a more nuanced appreciation of the events and trends they observe in various parts of the world, and a set of heuristics that allow them to more effectively “balance competing country, business, and functional concerns” (Murtha et al., 1998: 97). Internationally experienced managers are “cosmopolitan” thinkers (Kanter, 1995), who are particularly competent at maneuvering through complex global environments (Adler & Bartholomew, 1992). Thus we posit that international experience colors how HQ executives pay attention to the world, to impact positively on the contributions that such attention makes to MNE performance. This interaction is captured in the following hypothesis.

Hypothesis 2a: The greater the international assignment experience of HQ executives, the greater the positive association between international attention and MNE performance.

Independence of value-adding activities. A key aspect of MNE structure is the extent to which value-adding activities around the world are centrally coordinated (Porter, 1986). Thus one can envision a spectrum where at one end the MNE is a collection of relatively independent subsidiary units with little coordination between them (O'Donnell, 2000; Venai et al., 2005), and at the other end the MNE is a complex and integrated set of operations (Hout, Porter, & Rudden, 1982; Kogut & Kulatilaka, 1994; Roth, 1995). There are many factors that influence the MNE's position on

this spectrum (Yip, 1995). And while there are often very good reasons for subsidiary units to operate relatively independently (e.g., difficulties in coordinating over large distances, differences in competitive conditions: Harzing & Noorderhaven, 2006; Rosenzweig & Singh, 1991), it is still important for all MNEs that they achieve some level of integration to justify their existence (Kogut, 1989: 383–384).

We expect the performance benefits of international attention to *increase* with the independence of the MNE's foreign value-adding activities, because higher levels of independence make attention more valuable.³ Relatively high levels of independence will encourage subsidiary managers to take actions that maximize their responsiveness to local market conditions, so the task of HQ executives in assessing the potential value of subsidiary-specific advantages becomes that much harder (Forsgren & Pedersen, 2000; Hu, 1995). Signals that originate from largely autonomous operations are therefore ill structured in nature, and less likely to be understood or even used at all by HQ executives (Zack, 1999). It is in circumstances such as these that the returns to international attention are likely to be the greatest. Independent subsidiary units may also create a fragmented organization where few incentives exist for subsidiaries to share competencies and insights with the HQ or peer units. As a result, HQ executives need to focus their attention more internationally if they are to convert ambiguous international stimuli into a set of actionable priority items. By increasing the time and effort they allocate to foreign markets, HQ executives can act as useful catalysts to the firm's unification process (Ghoshal & Gratton, 2002; Gratton & Ghoshal, 2005): that is, they can facilitate the identification and gathering of relatively ambiguous sources of dispersed knowledge (Schulz, 2001), some of which may have important ramifications for the competitive advantage of the MNE as a whole (Rugman & Verbeke, 2001).

Conversely, we would expect the benefits of international attention to diminish correspondingly as subsidiaries become more closely coordinated with one another (Gupta & Govindarajan, 1986). When greater linkages exist across locations, sophisticated systems and procedures (e.g., virtual business teams, state-of-the-art online resources, and reciprocal lines of communications) are likely to be already in place to promote the company-wide exchange of knowledge. Highly integrated

MNEs may also use centers of excellence and scanning units in foreign locations as a means of tapping into the ideas and knowledge bases in distant locations (Frost, Birkinshaw, & Ensign, 2002; Vernon, 1979). Mechanisms like these constitute "relatively stable programs of action" (March & Simon, 1958) that diminish the relative contributions that top executive attention brings to the overall learning process (Ghoshal & Bartlett, 1988, 1990; Ghoshal, Korine, & Szulanski, 1994). International attention, in other words, is more necessary when the operations of the MNE are relatively independent rather than when they are centrally coordinated – it is in essence a compensating mechanism that is required when other processes for achieving integration are absent.

Hypothesis 2b: The greater the independence of value-adding activities across country locations, the greater the positive association between international attention and MNE performance.

Industry dynamism. This refers to the rate of change in the industry as manifested, for example, in high levels of sales growth (Carpenter & Fredrickson, 2001; Garg, Walters, & Priem, 2003; Sorenson, 2000). Extreme dynamism has been associated with unpredictable changes in the behavior of customers and competitors, and rapid changes in technological conditions. More generally, it is also believed to increase the diversity of stimuli and signals available to industry participants, making it harder for HQ executives to understand what exact features of their global environments are changing, or to accurately predict means–ends relationships (Baum & Wally, 2003; Dess & Robinson, 1984). For instance, industry dynamism can make it particularly difficult to assess the potential of distant technological developments, or to discern which subsidiary developments are meaningful, and which are not.

We therefore expect that firms operating in industries where there is a great deal of dynamism will benefit the most from the international attention of their HQ executives (Abrahamson & Hambrick, 1997). International attention gives HQ executives a better chance of quickly navigating through the mass of available stimuli, and thus appreciating the relevance of events and trends that can be otherwise perceived to be obscure or noisy (Bourgeois & Eisenhardt, 1988; Eisenhardt, 1989). Conversely, in industries that are relatively stable or placid, there are fewer new or surprising stimuli to

be processed, and the need for international attention is proportionately lower.

Hypothesis 2c: The greater the industry dynamism, the greater the positive association between international attention and MNE performance.

METHODOLOGY

Sample

This study's hypotheses were tested using data from a cross-national sample of MNEs headquartered in the US, Canada, France, Germany, UK, and Japan. We considered these countries appropriate for our analysis because they are representative of the Triad economy, and together account for about half of the world's total foreign direct investment outflows. Also, their broad coverage enhances the generalizability of the study's findings. We then selected 13 industries (building products, chemicals, communications equipment, computers, containers and packaging, food products, industrial machinery, metals, motor vehicles and parts, pharmaceuticals, scientific instruments, semiconductors, and software) to provide heterogeneity with regard to the selected dependent, moderating, and independent variables (Bartlett & Ghoshal, 1989; Birkinshaw, Morrison, & Hulland, 1995; Roth, 1995). Using these contexts and information available in Compustat Global, we constructed a sample of 900 large- and medium-sized MNEs, defined as those public enterprises that control production assets located in at least two foreign countries and that generate over \$25 million in sales (Caves, 1996).

Data Collection

We collected information from archival sources, in-depth field interviews, and a survey questionnaire that was administered in the fall of 2001, and continuing until the beginning of 2002. We used Compustat Global, Hoover's online, and proxy statements to collect data on MNE performance and control variables. The development of the survey instrument started with in-depth face-to-face interviews with 18 senior executives in 13 MNEs headquartered in Canada, the US, and the UK. This phase involved semi-structured discussions that were largely exploratory in nature and designed to supplement the existing literature in constructing the draft questionnaire (Appendix A). Special care was taken to ensure that the sample reflected a variety of top executive functions (e.g.,

CEO, CFO, VP Leadership Development, VP Worldwide Sales) and industry contexts. We then asked a group of academics to review the draft questionnaire to identify questions for which there was a source of possible bias. Through this feedback, we eliminated or modified some of the initial survey items, and added others to the revised instrument.

As surveys of MNE top executives typically result in poor response rates (Harzing, 2000), we used a pre-notification letter to explain the importance of our research. One hundred and eighteen companies had corporate policies that prevented their participation in academic studies. Thus we used the remaining set of 782 companies as the pool from which to solicit our survey sample. Three separate questionnaire mail-outs followed over a total period of two months. These multiple contacts resulted in 140 completed questionnaires, four of which were deemed unusable because of excessive missing data. This resulted in an effective response rate in the range 15% (136/900) to 17% (136/782), a level considered appropriate by general standards of cross-national research (Harzing, 2000), and which compares favorably with other surveys focusing on high-ranking MNE executives (Simons, Pelled, & Smith, 1999; West & Schwenk, 1996). One company originally in our sample was acquired in 2003, so it did not subsequently report performance data that we could use for this study. Therefore all statistical analyses were conducted on the remaining pool of 135 MNEs.

Preliminary Assessments of Data

A comparison of differences in the mean values of the responding and non-responding companies based on sales revenues, assets, company age, number of employees, performance, and proportion of foreign sales to total sales did not reveal any significant non-response bias. For example, the largest responding and non-responding companies had annual sales of \$152 billion and \$179 billion, respectively, and the smallest responding and non-responding companies both had annual sales revenues of approximately \$26.0 million. The average sales of the two groups were \$5.3 billion and \$3.8 billion, respectively. The proportional breakdown of respondents by industry and country also paralleled that of the initial group, with about half of the responding companies located in North America (US and Canada), 20% in Japan, and the remaining in Western Europe. We asked respondents to indicate their current job titles in the organization. Fifty-three percent held the title of

CEO, CFO, or COO, 17% held the title of Senior Vice-President or President, and 30% held the title of General Manager or Director. Thus the sample included informants from the dominant coalition (Cyert & March, 1963) that were likely to be knowledgeable about the issues under study.

Ideally, multiple informants would have been used (Kumar, Stern, & Anderson, 1993), but the size and cross-national nature of our study precluded this approach. Nonetheless, we further checked the validity of the informants' responses in two ways. First, in 28 of the 135 companies, we obtained data from two informants as a validation sample. The value of all corresponding kappa coefficients ranged between 0.68 and 0.92, and the overall kappa was 0.78, indicating good-to-excellent agreement beyond chance, according to criteria set forth by Fleiss (1981). Second, we compared the correlations between data reported by the informants with secondary sources of data that were available on key internationalization variables such as the ratios of foreign sales to total sales, and foreign assets to total assets. The correlation coefficients ranged in values from 0.8 to 0.9 ($p < 0.05$). These correlations, along with the results from the subsample with multiple informants, increased confidence in the quality and accuracy of our data.

This study relied on data collected both from archival sources (e.g., MNE performance, HQ international assignment experience, industry dynamism, and a number of control variables) and from a single survey respondent – as it would have been difficult to collect data on other inner aspects of MNE functioning (e.g., international attention, and the independence of value-adding operations) through means other than surveys. To minimize the possibility of common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we also took special steps in the design of our questionnaire. For example, we used multiple-item scales to measure our constructs, and scattering questions pertaining to the independent and dependent variables throughout the questionnaire. We also sought to minimize the risk of social desirability bias by using serial numbers on the mail survey that maintained the confidentiality of respondents (Sharma, 2000). A *post hoc* analysis on all survey measures using Harman's single-factor test (Podsakoff & Organ, 1986) also showed no evidence of response bias. Using confirmatory factor analyses (CFA), all survey construct pairs also met the discriminant validity test at $p < 0.001$ or better, further reducing concerns for common method bias.

Independent Variable

Our composite measure of *international attention* captured the three dimensions of global scanning, overseas communications, and globalization discussions. *Global scanning* was measured with three items developed from the MNE literature (Davidson, 1991; Ghoshal & Westney, 1991). We asked respondents to rate, on seven-point Likert scales (very rarely/very frequently) the extent to which top executives: (IA1) "collect strategic information (such as market share and competitor data from around the world) in a consistent format on a regular basis;" (IA2) "use business intelligence software to analyze global market developments;" and (IA3) "use benchmarking systems that routinely compare the company against key competitors worldwide." *Overseas communications* were measured with three survey indicators from the media richness literature (Daft & Lengel, 1986). First, we asked respondents to rate, on seven-point Likert scales (very rarely/very frequently) the extent to which top executives use "e-mail, letters and memos" (weight of 1), "the telephone" (weight of 2), "videoconferencing" (weight of 3), and "face-to-face meetings" (weight of 4) to discuss non-routine decisions with overseas managers. The resulting weighted formative index, IA4, reflects increasing degrees of media richness (Daft & Lengel, 1986). The second indicator, IA5, was the amount of time (as a percentage) that the CEO spent traveling abroad every year. This measure was introduced to capture the critical boundary-spanning role played by the CEO. For the third indicator, IA6, we asked respondents to rate on a seven-point Likert scale (very rarely/very frequently) the extent to which "top management meetings are rotated across locations." Finally, *globalization discussions* were measured with three indicators asking respondents to indicate, on seven-point Likert scales (very rarely/very frequently), the extent to which major globalization decisions are made (IA7) "only after intensive discussions between top managers," (IA8) "by a single executive," (this item was reverse-coded) and (IA9) "after a free and open exchange of ideas among executives."

We used CFA with Amos version 7 and maximum likelihood estimation to evaluate the appropriateness of conceptualizing attention as a higher-order construct represented by three first-order dimensions. CFA tests hypotheses about the relationships among observed variables on the basis of the hypothetical constructs they are purported to

measure, thus providing a superior evaluation of construct validity (Kline, 2005).

The CFA analysis for international attention is shown in Table 1. In our analysis, we followed Kline's (2005: 134) recommendation in reporting a minimal set of fit indices that comprises:

- (1) the model chi-square;
- (2) the Steiger–Lind root mean square error of approximation (RMSEA);
- (3) the Bentler comparative fit index; and
- (4) the standardized root mean square residual (SRMR).

The hypothesized CFA model provided a good fit to the data (χ^2 [26, $n=135$]=36.25, $p=0.09$, RMSEA=0.054, with a 90% confidence interval of 0.00–0.090, CFI=0.93, SRMR=0.06). All indicator variables loaded significantly on their respective factor, as expected. We then compared this three-factor model with one- and two-factor structures, using the chi-square difference test (Bollen, 1989; Kline, 2005). The single-factor model inadequately accounted for the observed covariances (χ^2 [27, $n=135$]=75.70, $p<0.01$, RMSEA=0.12 with a 90% confidence interval of 0.09–0.15; CFI=0.70, SRMR=0.10). The fit associated with a model of two correlated factors – one of which included all scanning items (χ^2 [26, $n=135$]=44.32, $p<0.05$, RMSEA=0.07

with a 90% confidence interval of 0.03–0.11; CFI=0.88, SRMR=0.07) – was significantly decreased compared with the hypothesized model, as the chi-square difference of 8.05 between these two models was highly significant ($\Delta df=1$, $p<0.01$). These analyses provide support for our conceptualization of international attention as a meta-construct represented by three first-order dimensions.

Dependent Variable

Although MNEs may pursue a variety of objectives and goals, it is also widely recognized that they are fundamentally concerned with accounting results. Therefore we used three commonly used accounting-based measures of *MNE performance*: return on assets, return on equity, and return on sales. To avoid the potentially confounding effect of local tax treatments, these measures were based on operational profits rather than net, after-tax profits (Blaine, 1994). These data were collected from Compustat's *Global Vantage* dataset, and averaged over the 2002–2005 time period (the four years following the measurement of international attention). Additional analyses revealed that the three indicators loaded on one factor with a high eigenvalue, a high explained variance, and an acceptable alpha of 0.80 (Nunnally & Bernstein, 1994). The corresponding factor score was used in all analyses.

Table 1 Confirmatory factor analysis: international attention^a

Subconstruct/Indicator	Standardized loading	Z statistic	Composite reliability	Average variance extracted
<i>Global scanning</i>			0.81	0.59
IA1	0.61	4.02***		
IA2	0.49	4.34***		
IA3	0.67			
<i>Overseas communications</i>			0.82	0.61
IA4	0.66	4.49***		
IA5	0.54	4.78***		
IA6	0.66			
<i>Globalization discussions</i>			0.75	0.51
IA7	0.67	3.28***		
IA8	0.46	3.08***		
IA9	0.41			
<i>International attention^b</i>			0.82	0.61
Global scanning	0.59	3.27***		
Overseas communications	0.67	3.79***		
Globalization discussions	0.69	3.70***		

* $p<0.05$; ** $p<0.01$; *** $p<0.001$.

^aZ-scores (critical ratios) for leading indicators were set to 1.00 to establish scales.

^bHigher-order model with residual variances constrained to be equal.

Moderating Variables

There are a number of different ways of measuring international expertise (e.g., Roth, 1995; Takeuchi, Tesluk, & Yun, 2005). We focused on the *international assignment experience of HQ executives* by counting how many individuals in the top management team had overseas assignments that lasted more than a year (Carpenter et al., 2001). Data were collected from company websites, and from executive biographies available in *Lexus Nexus*. To account for differences in top team size, we divided this measure by the total number of company officers operating in the top team (at one or two levels below the CEO). The results were robust to other possible definitions of top team size.

The *independence of value-adding activities* was measured with seven items that assessed the level of integration and coordination existing between geographically dispersed activities of the value chain (Roth, 1995). Together, these items indicated the extent to which the MNE consists of a collection of relatively autonomous subsidiary operations rather than a complex organizational system of highly integrated activities. The value-chain activities listed were raw materials and parts procurement, manufacturing, process design and improvement, marketing and sales activities, product design and improvement, finance, and employee development. We asked respondents to indicate whether each activity was “performed in one country,” “performed in multiple countries and managed nationally,” “performed in multiple countries and coordinated within regions,” or “performed in multiple countries and coordinated globally.” The Cronbach alpha for this measure was 0.82.

Following Hambrick and Cannella (2004), we used two indicators to measure the degree of *industry dynamism*, for all 13 industries in our sample. The first indicator was sales growth, using the four-year average of data (1998–2001) available in Compustat’s Global Vantage database. For our second indicator, we calculated the average R&D intensity of each industry during the same time period. Indeed, we expected that highly dynamic industries would also exhibit high levels of R&D spending as a proportion of total industry sales (Khan & Manopichetwattana, 1989; Thornhill, 2006). As anticipated, the values for industry dynamism and R&D intensity were correlated positively and significantly ($r=0.041$, $p<0.001$). As the two indicators loaded on one factor that explained 71% of explained variance, we used the

corresponding factor score as our measure of industry dynamism.

Control Variables

We controlled for several variables that had the potential to confound the results of our study. First, we used *region-specific dummy variables* to control for variance attributable to broad locational factors. All MNEs in the sample were headquartered in North America, Europe, or Japan. European parentage was treated as the base case, and dummy variables were created for the two other regions. To control for *industry effects*, we used dummy variables for the 13 major industry categories represented in our sample. Industrial machinery was treated as the reference group.

We also included several *firm-level factors* as controls because they have been shown to affect MNE performance. These were: MNE size, which was measured as the logarithm of the total number of employees; R&D intensity, which was taken as the ratio of R&D expenses to total sales, averaged over the 1998–2000 period; diversification, which was measured using Palepu’s (1985) entropy measure assessing the distribution of sales across a company’s businesses; and the prior performance of the MNE (measured over the 1998–2000 period). All data for these measures were retrieved from Compustat’s Global Vantage database. Finally, given that our sample is made up of MNEs, a key control variable was the expansiveness of a firm’s global strategic posture, which may also influence MNE performance. Following Carpenter & Fredrickson (2001), we used three survey items. The first gauged an MNE’s dependence on sales to foreign markets, and it was calculated as the ratio of foreign sales to total sales. The second and third items reflected the MNE’s reliance on foreign-placed resources, and were calculated as the percentage of foreign assets to total assets, and the percentage of foreign employees to total employees, respectively. Preliminary analyses showed that these three indicators loaded on one factor with a high eigenvalue, a high explained variance, and an acceptable alpha of 0.77 (Nunnally & Bernstein, 1994). The corresponding factor score was used in all analyses.

Convergent and Discriminant Validity

We estimated a final CFA model that included all of the study’s latent constructs, that is, those related to the concepts of international attention, MNE performance, the independence of value-adding

activities, and global strategic posture. In this model, the factor scores obtained for the first-order dimensions of global scanning, overseas communications, and globalization discussions were used as manifest indicators of their higher-order construct. This model provided adequate fit to the data (χ^2 [99, $n=135$]=127.59, $p=0.028$; RMSEA=0.046 with a 90% confidence interval of 0.016–0.068; CFI=0.96; SRMR=0.06). All parameters loaded strongly and significantly on their respective construct ($p<0.001$). The composite reliabilities for each of the retained scales systematically exceeded 0.8, indicating adequate reliability. The average variance extracted (AVE) exceeded 0.5 in all cases, which provides evidence of convergent validity. We also followed the procedures suggested by Fornell and Larcker (1981) to estimate the shared variance between any pair of constructs (which corresponds to the squared correlation between two constructs), and found it to be systematically lower than the shared variance between each construct and its respective set of indicators. This condition was established for all pairs of constructs, thus providing evidence that the constructs investigated in this study were conceptually distinct.

RESULTS

Table 2 shows key descriptive statistics and zero-order correlations for all variables. We tested the hypotheses using ordinary least-square (OLS) regression techniques. Precautionary and post-hoc analyses indicated that multivariate outliers were not present in the dataset, and therefore did not exert any significant impact on the results. Variance

inflation factors (VIF) for individual variables were all within adequate parameters, with values less than 4.00. Therefore multicollinearity did not seem to threaten the estimates.

We report the results in Table 3. Model 1 is a baseline model that includes control variables and moderators. Companies headquartered in North America performed better than European-based companies (the reference category). With respect to industry significance, the coefficients for both the metals and the semiconductors dummies were negative ($p<0.05$), whereas the coefficient for software was positive ($p<0.05$). Unexpected was the significant positive sign for MNE size, which contrasted with the zero-order correlation observed between this variable and MNE performance ($r=0.05$, ns). This finding indicates a classical suppression effect (Cohen & Cohen, 1983: 84–91), whereby diversification marginally decreases MNE performance, and MNE size increases it; but as reported in Table 2, a positive correlation ($r=0.33$) exists between diversification and MNE size. When the effect of diversification is held constant, the true positive effect of MNE size comes through. R&D intensity had a negative influence on MNE performance, consistent with the findings of Lu and Beamish (2004). Finally, the prior performance of the firm was positively and significantly related to the dependent variable. All other variables had insignificant influence on MNE performance.

We tested Hypothesis 1 in Models 2 and 3, where we investigated the possibility of a curvilinear, inverted U-shaped relationship by adding the linear term of international attention in Model 2, and its

Table 2 Descriptive statistics and zero-order correlations^a

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1. MNE performance	0.00	1.00											
2. North America dummy	0.52	0.50	0.05										
3. Japan dummy	0.19	0.39	0.01	-0.50									
4. MNE size	1.53	1.78	0.29	-0.25	0.17								
5. R&D intensity	6.04	8.50	-0.35	0.05	-0.12	-0.30							
6. Diversification	0.77	0.44	0.01	-0.16	0.08	0.33	-0.03						
7. Prior MNE performance	0.00	1.00	0.51	-0.08	-0.02	0.18	-0.36	0.01					
8. Global strategic posture	0.43	0.20	-0.18	-0.20	-0.24	0.16	0.17	0.10	-0.09				
9. HQ international experience	0.00	0.32	-0.03	-0.06	-0.22	0.14	0.04	0.13	0.05	0.27			
10. Independence of value-adding activities	0.00	0.71	-0.07	0.04	0.00	-0.46	0.16	-0.25	-0.06	-0.39	-0.12		
11. Industry dynamism	0.00	1.00	-0.21	-0.16	0.22	-0.04	0.24	0.19	-0.04	0.21	0.06	-0.03	
12. HQ international attention	0.00	1.00	-0.07	-0.10	-0.11	0.23	0.08	0.00	-0.13	0.34	0.28	-0.25	0.07

^a $n=135$; correlations above 0.17 are significant at the 0.05 level, and those above 0.19 are significant at the 0.01 level (two-tailed). North America dummy and Japan dummy are dichotomous variables. MNE performance, HQ international attention, Prior MNE performance, and Industry dynamism are standardized factor scores.

Table 3 OLS regressions^a

Variable	Hypothesis	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
(Constant)		-0.31 (0.24)	-0.33 (0.24)	-0.31 (0.24)	-0.33 (0.23)	-0.41 (0.23)	-0.27 (0.23)
North America dummy		0.27* (0.13)	0.29* (0.13)	0.27* (0.13)	0.30* (0.13)	0.32* (0.13)	0.29* (0.12)
Japan dummy		0.19 (0.18)	0.22 (0.18)	0.20 (0.18)	0.21 (0.17)	0.23 (0.17)	0.17 (0.17)
MNE size		0.11** (0.04)	0.09* (0.04)	0.10* (0.04)	0.09* (0.04)	0.08* (0.04)	0.08* (0.04)
R&D intensity		-0.02* (0.01)	-0.02* (0.01)	-0.01* (0.01)	-0.01* (0.01)	-0.02* (0.01)	-0.02* (0.01)
Diversification		0.01 (0.12)	0.05 (0.12)	0.09 (0.12)	0.10 (0.12)	0.16 (0.12)	0.17 (0.12)
Prior MNE performance		0.15* (0.06)	0.15* (0.06)	0.15** (0.06)	0.16** (0.06)	0.16** (0.05)	0.16** (0.05)
Global strategic posture		0.24 (0.31)	0.19 (0.31)	0.20 (0.30)	0.20 (0.30)	0.27 (0.29)	0.09 (0.29)
HQ international experience		-0.11 (0.17)	-0.15 (0.17)	-0.13 (0.17)	-0.24 (0.18)	-0.26 (0.17)	-0.28 (0.17)
Independence of value-adding activities		0.12 (0.09)	0.13 (0.09)	0.12 (0.09)	0.11 (0.08)	0.15 (0.08)	0.12 (0.08)
Industry dynamism		-0.09 (0.07)	-0.10 (0.07)	-0.12 (0.07)	-0.12 (0.07)	-0.14* (0.07)	-0.10 (0.07)
HQ international attention			0.08 (0.05)	0.06 (0.05)	0.05 (0.05)	0.10 [†] (0.05)	0.10 [†] (0.05)
(HQ international attention) ²	1			-0.08* (0.03)	-0.11** (0.04)	-0.09* (0.04)	-0.10* (0.04)
HQ international attention × HQ international experience	2a				0.30* (0.16)	0.36* (0.15)	0.41** (0.15)
HQ International attention × Independence of activities	2b					0.23** (0.08)	0.27*** (0.08)
HQ International attention × Industry dynamism	2c						0.09* (0.04)
F-change		4.30	2.20	4.89	3.82	8.01	5.20
Adjusted R ²		0.36	0.37	0.40	0.42	0.45	0.47
Increase in adjusted R ²			0.01	0.03	0.02	0.03	0.02

^a $n=135$. Unstandardized coefficients are shown, with standard errors in parentheses. Industry dummy variables are not shown in order to conserve space. All variance inflation factors values were less than 3. Adjusted R^2 is the total variance explained for an equation, after taking the number of predictor variables and sample size into account. ΔR^2 refers to the unique variance explained by the predictor variable(s) in each equation above that explained by the baseline estimation of controls.

[†] $p < 0.10$, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; two-tailed tests.

square term in Model 3. The significance of the change in *F*-values indicates whether each model improves prediction compared with the previous one. As shown in Model 2, the inclusion of the linear term for international attention did not explain variance in performance. However, including its square term in Model 3 significantly improved the explanatory power of our regression equation. This test reveals a curvilinear, inverted U-shape relationship between international attention and MNE performance that supports Hypothesis 1. Following Aiken and West (1991), we also calculated that HQ executives with an international score of 0.37 had the highest level of MNE performance. Appendix B provides detailed calculations for this inflection point.

Hypotheses 2a, 2b, and 2c predicted that HQ international experience, the independence of value-adding activities, and the degree of industry dynamism would each have a linear, positive, moderating impact on the relationship between international attention and MNE performance. Models 4, 5, and 6 tested these hypotheses by entering the multiplicative terms between these moderator variables and international attention. In Model 4, the interaction between international experience and international attention was positive and significant. In Model 5, the interaction between the independence of value-adding activities and international attention was also positive and significant. Finally, in Model 6, the interaction between industry dynamism and international attention was positive and significant. The significant changes in *F*-test values provide further evidence that including the interaction terms improves model fit. Thus Hypotheses 2a, 2b, and 2c are supported. Further, the curvilinear, inverted U-shaped relationship between international attention and MNE performance remained robust in all of the models that also included interaction terms.

Drawing on these results, we constructed several figures to illustrate more clearly the curvilinear effect of international attention on MNE performance (Figure 2), and also to map this effect across all continuous values of the moderators (Figures 3–5). Figure 2 depicts the relationship between international attention and MNE performance, which, as we showed earlier, is positive until attention reaches a threshold of 0.37, and negative afterwards. However, Figures 3–5 demonstrate that high levels of HQ international experience, independence of value-adding activities, and industry dynamism increase the performance gains

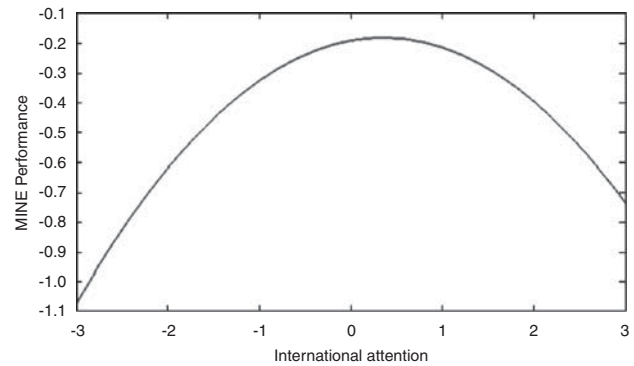


Figure 2 Curvilinear relationship between HQ international attention and MNE performance.

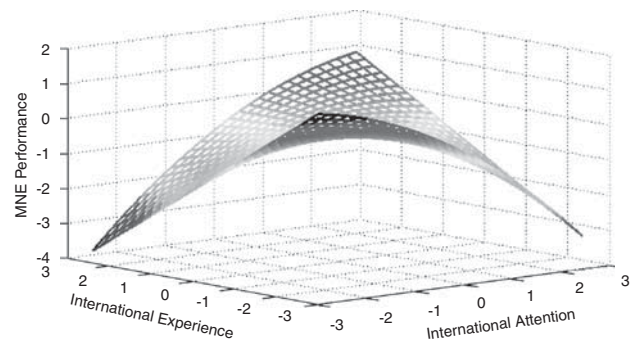


Figure 3 Relationship between HQ international attention, HQ international experience, and MNE performance.

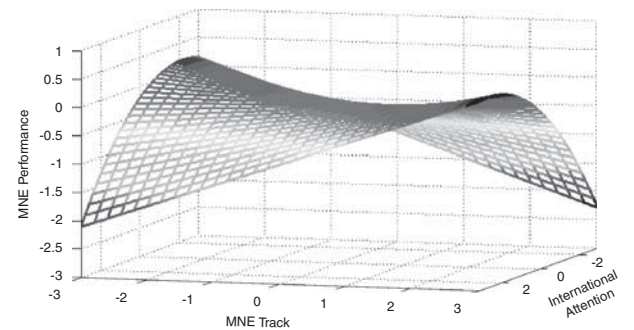


Figure 4 Relationship between HQ international attention, independence of value-added activities, and MNE performance.

attributable to international attention. Indeed, we can see that the overall linear trend of international attention on MNE performance is negative at low levels of the moderators, very slightly positive at medium levels, and significantly more positive at high levels. Moreover, the 3D planes suggest that the threshold at which international attention starts to produce negative outcomes is not fixed at

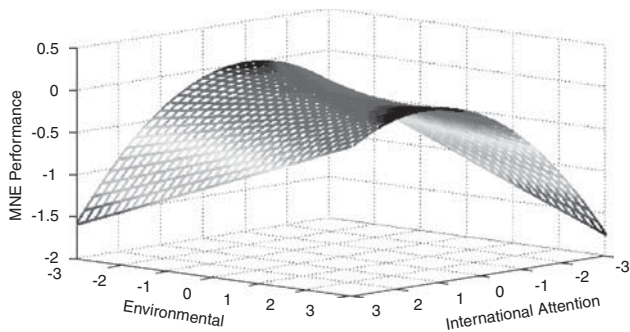


Figure 5 Relationship between HQ international attention, environmental uncertainty, and MNE performance.

a single value of 0.37; instead, the performance benefits of international attention depend on the value of the three moderators. The full details of these mathematical procedures are provided in Appendix B.

For instance, we calculated that when HQ executives have no international experience (Figure 3), the extent to which their international attention translates into superior levels of MNE performance is rather limited: indeed, MNE performance starts to drop as soon as international attention exceeds the below-sample-average value of -0.25 . However, HQ executives with higher levels of international experience continue to enjoy performance benefits until they reach the higher thresholds of 0.18 (for those with average levels of international experience) and 0.62 (for those whose international experience is 1 standard deviation above the mean). Therefore international experience can readily be seen as a complementary type of asset that significantly increases the performance gains that can be extracted from international attention. Similar qualitative conclusions can be drawn with respect to the other moderators. While international attention is a scarce resource that is subject to the law of diminishing and even negative returns, the performance value of international attention is actually much improved when HQ executives also have international experience (Figure 3), when the MNE operates as a collection of relatively independent activities (Figure 4), and when the degree of industry dynamism is high (Figure 5).

Post-Hoc Analyses

To gain further insight into the more fine-grained aspects of our conceptual framework, we estimated an additional series of regression models, where the subdimensions of international attention (global

scanning, overseas communications, and globalization discussions) were entered separately in the statistical analysis. We noticed two important sets of findings. First, particular facets of attentional processing appeared to affect MNE performance only through their interactions with the previously considered set of moderating variables. Global scanning mattered most when the independence of value-adding activities and degree of industry dynamism were high – findings that provide a nice complement to those already observed at the CEOs' level of analysis (Garg et al., 2003). Overseas communications had a positive and marginal ($p < 0.10$) impact on MNE performance, but only when HQ executives had also accumulated high levels of international assignment experience. Finally, globalization discussions had the most robust influence on MNE performance: indeed, all of the three interaction terms that involved this particular component of international dimension were significant ($p < 0.05$) and positively signed in our regression models. Second, the overall variance explained with these individual models of attentional processing was 39%, compared with 47% for the models that treated international attention as an abstract composite of three component dimensions. These findings suggest that individual aspects of attentional processing do act in concert, rather than in isolation (Ocasio, 1997); the association between international attention and MNE performance is stronger when the three dimensions of scanning, communications and discussions are considered together as a collective set of influences, rather than as an individual set of idiosyncratic items.

DISCUSSION

Implications for Theory

Our approach to international attention and MNE performance focused on both managerial practices and critical spheres of cognitive influences, rather than on either of these components alone. This particular approach has three major implications for theory. First, we provide a careful operationalization of international attention. Despite the considerable amount of research on the attention-based view of the firm in recent years, there have been few serious attempts to operationalize the core construct. In this study we adopted a grounded method, consisting of interviews with 18 executives and then a process of reconciling their observations and insights with the concepts in the

literature. As a result, we can say that international attention has three component elements: a scanning element, which describes the ways HQ executives analyze the global environment in the search of insights; a communication element, which highlights how HQ executives interact with international constituents to comprehend signals that are perhaps more tacit in nature; and a discussion element, which views HQ executives as a collective trying to converge on a common meaning of what globalization entails for the organization.

This operational approach also brings us back to the advice of strategy researchers that we should spend additional time studying how executives behave in action (Pettigrew, 1992) if we are to understand organizational cognition and performance. In this vein, we suggest that research investigating the unique qualities of effective global leaders should broaden its focus to include their concrete attention practices, rather than focusing solely on the particular cognitive tendencies they demonstrate in strategic decision-making activities (Levy et al., 2007; Murtha et al., 1998; Perlmutter, 1969). For example, much of the research on global mindsets implies that the experience, attitudes, and belief systems of managers determine how their view of the world allows them to initiate strategic decisions that can benefit performance. Our framework indicates that a focus on the scanning activities of managers, and on the communications and interactions they have with themselves and other organizational participants, provides another fruitful avenue to explore.

The second major contribution of our study is to demonstrate that the attention of a firm's top managers impacts firm performance, therefore extending the insights that Ocasio (1997) proposed in his emerging theory of the firm. This notion complements the predominant view that performance is driven principally by a critical set of industry and strategic factors. How managers focus attention in concrete sets of practices determines how effective the MNE is at observing and comprehending the complex world in which it operates. In particular, our findings hint at some important issues in the dynamics of how value gets created within MNEs. The concept of attention potentially represents a "missing link" between studies examining the value-added function of corporate HQ (Chandler, 1977, 1991) and knowledge-based notions of competitive advantage (Grant, 1996; Kogut & Zander, 1993). While HQ executives may add value through their superior understanding of

what bundles of assets and capabilities exist across the firm's global network of subsidiary operations, there has been very little research concerned with how direct actions from senior executives get transformed into firm-specific advantages. Our focus on attention highlights one important mechanism by which this transformation process is achieved.

Third, our framework suggests that the performance gains achieved through international attention may be the result of how executive practices interact with specific sources of cognitive influences. This perspective implies that there may be some situations in which the attention of top managers is not utilized to its full potential – either because it emphasizes a disproportionate set of issues, or because it is deployed without proper regard to the particular set of contingencies in which HQ executives operate. As a result, the attention deployed in the international market may or may not contribute effectively to MNE performance.

This point is illustrated nicely with Hypothesis 2b. In an earlier study, Roth (1995) showed that the interdependence of a firm's value-adding activities had a *positive* impact on the relationship between CEO international experience and MNE performance, because the CEO in question better understood the integrated operations he/she was dealing with. Confirmation for Hypothesis 2b in this study showed, in contrast, that interdependence has a *negative* moderating influence on the relationship between international attention and MNE performance. In other words, international attention acts as a compensatory mechanism for achieving integration in the absence of other mechanisms such as strong formal processes or a highly experienced CEO, but we suspect this is not well understood, so firms frequently over- and under-invest in international attention.

Thus a real challenge for firms, particularly in a rapidly changing business environment, may be related to their capacity to switch attention from one strategic issue to another according to both (1) the changing relative importance of those issues over time and (2) the characteristics of the contexts by which their managers are confronted across multiple levels of analysis. This viewpoint emphasizes the importance of *dynamic capabilities*, by which the firm is able "to integrate, build and reconfigure internal and external competencies" (Teece, Pisano, & Shuen, 1997: 517). While the current research does not offer specific insights into



what a dynamic attention capability might look like, our expectation is that much of it resides within established organizational processes, such as strategic planning and leadership development processes. As Eisenhardt and Martin (2000) argue, such processes have many commonalities across firms, but they differ in the details, and it is likely to be these idiosyncratic details that enable some firms to redirect attention effectively in response to environmental shifts, while other firms continue to allow executives to attend to issues of historical importance.

Implications for Practice

There are also practical implications of this research for MNE executives. Interestingly, the biggest problem they face is not lack of information: modern technologies have multiplied the flow of foreign market signals that continuously reach the desk of executives, increasingly stretching their attention to its limits. What emerges from this research is clear evidence that HQ executives can allocate suboptimal levels of attention to the international marketplace. To be clear, this is not an entirely surprising finding, because many researchers over the years have suggested that “decision-makers do things they are not supposed to do, and they fail to do things they are supposed to do” (March, 1994: 73). But it is important nonetheless, because it provides clear evidence that, if more efficiently focused, attention can benefit firm performance.

Indeed, the results suggest three specific things HQ executives can do. First, they should rethink the “ecology of attention” in the organization: who attends to what, and when (March, 1994: 24). When it comes to attending to the international marketplace, delegation certainly has a role to play. As March and Olsen (1976) suggested, attention can be bought and bartered to ensure that it is always deployed towards the issues that need it the most. Second, they can continue to value the acquisition of international experience as a key requirement to accessing senior executive ranks, since this will later improve the performance benefits of international attention. Third, they can ensure that their ultimate investments of time and effort are commensurate with the specific contexts in which they operate. Executives operating in fragmented organizations and dynamic industries have more to gain from international attention than executives confronting more integrated and stable contexts.

Limitations

There are, of course, several limitations to this study that we should acknowledge. First, we conducted our study with measures derived both from archival sources (e.g., MNE performance, HQ international experience, and industry dynamism) and from survey measures (e.g., international attention and the independence of value-adding activities). While this triangulation of data sources helps to mitigate concerns of common method bias (Podsakoff et al., 2003), ideally, survey researchers should also gather information from multiple respondents in each sampled organization to ensure the data obtained do not simply reflect the idiosyncratic perspectives of individual decision-makers. However, because our study sought to identify the performance implications of international attention, it was necessary to include a great number and diversity of MNEs in our sample. Like many other field researchers (Björkman, Fey, & Park, 2007; Ellis, 2007; Mudambi & Zahra, 2007), we relied on single and well-informed respondents from each firm. In our defense, we took several actions to minimize sources of bias, which included obtaining survey responses from two informants as a validation sample. Moreover, the careful design procedures adopted in the construction and administration of our survey questionnaire, and the statistical CFA tests reported earlier, provide reassurance that our survey measures are valid indicators of their intended constructs.

Second, although we examined three important categories of factors as critical moderators of the relationships between international attention and MNE performance, we do not intend for our framework to be comprehensive, and there might be additional moderating influences that are beyond the scope of this study. Future research could certainly test hypotheses about other possible interpretations of attention-performance linkages by assessing such variables.

Finally, it is impossible to assess with certainty the direction of causality. Our expectation is that the relationship linking attention to MNE performance exhibits reciprocal causality, so that, for example, strong performance in the past yields slacks that facilitate exploratory behaviors in general and investments of international attention in particular, which in turn affect the future performance of the firm. Of course, it would be useful for research to examine these issues more systematically on a longitudinal basis, but for the moment we believe that our design, in which international

attention was measured prior to MNE performance, and past performance used as a control, provides solid evidence that is in support of the predicted direction of causality.

CONCLUSIONS

In conclusion, international attention brings insights to HQ executives to help them stay abreast of important changes occurring in their global environment. In this paper, we have argued that the time and effort HQ executives invest in activities, communications, and discussions aimed at improving their understanding of the global marketplace help to explain MNE performance. However, attention to international issues comes at a cost for the organization, because it results in a commensurate loss of attention to other strategic issues. The curvilinear (inverted U) relationship that we observed between international attention and MNE performance is consistent with this logic. We also showed that the benefits of international attention increase with the international experience of HQ executives, the extent to which the MNE constitutes a coalition of relatively independent operations, and the degree of industry dynamism.

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NOTES

¹By HQ executives we mean the top decision-makers at the level of corporate HQ who have the potential to influence critical decisions related to strategy formulation and implementation. In some MNEs this could consist of the CEO and some divisional presidents alone; in other firms it may comprise all senior-level managers, including functional unit heads.

²James (1890: 403–404) asserted that “attention involved taking possession by the mind, in clear and vivid form, of one out of several simultaneously possible objects or trains of thought. It requires focalization and concentration of consciousness and implies withdrawal from some things in order to deal effectively with others.”

³Note that Roth (1995) argued and found evidence that the relative independence of value-adding units in an MNE would have a *negative* moderating effect on the relationship between CEO international experience and MNE performance. We reconcile our logic with Roth’s in the discussion section.



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APPENDIX A

Qualitative Field Research

We focused our preliminary interviews on a group of 18 senior executives. Because the purpose of this qualitative study was to add insights to available theory construction, special care was taken to ensure that the sample included TMT members in a variety of functions (e.g., CEO, CFO, VP Leadership Development, VP Worldwide Sales) and industry sectors. Care was also taken to select large and heavily diversified MNEs (e.g., Bombardier), as well as small and more domestically focused companies (e.g., Campbell Aviation). Table A1 provides details of the interview sample.

A semi-structured format (Butterfield, Trevino & Ball; 1996; Glaser & Strauss, 1967) was followed for all interviews. After briefly introducing the research project, we asked interviewees to describe their views and company experiences on the relevant set of issues. We found it frequently necessary to probe

additional comments, illustrations, and insights along the following question lines:

- (1) How would you describe the main changes under way in the global organization?
- (2) What does it take to achieve global effectiveness?
- (3) What does the term “international attention” mean to you?
- (4) Are you getting enough international attention at the top? How do you know?

All interviews were about an hour and a half in length, and were audiotaped and transcribed. The information obtained through these interviews generated several recording units (relevant and coherent interview segments for which a single meaning structure could be generated) on the forms that international attention could take. These insights were then organized into three unifying themes, corresponding to the *global*

Table A1 Interview participants

	Company	Head office
VP and Chief Strategy Officer	Accelio	Ontario (CA)
Director Corporate Development	Alcan	Quebec (CA)
Chairman Transportation	Bombardier	Quebec (CA)
VP Leadership and Organization Development		
Co-founder and President	Campbell Aviations	Virginia (USA)
Chairman and CEO	CCL Industries	Ontario (CA)
SVP and Chief Financial Officer		
President CCL Label		
VP Product Services	Cognos	Ontario (CA)
EVP Worldwide Sales	Corel Corporation	Ontario (CA)
VP and Chief Financial Officer	Cuisine Solutions	Virginia (USA)
Director of Business Development	EssoAir International	London (UK)
VP Human Resources	Husky Injection Molding Systems	Ontario (CA)
VP Marketing		
VP Organization Development	ICI	London (UK)
Director Human Resource	Invensys	London (UK)
VP, Strategic Planning	Maple Leaf Food	Ontario (CA)
VP Leadership Development		

scanning, overseas communications, and globalization discussions aspects of international attention. One of the authors for this study conducted a number of confirmatory post-hoc interviews with a broader audience of MNE top executives, both in the US and in Canada. This additional step allowed us to build further face validity into our conceptual framework and ensure the insights we present are likely to be useful both for theory and for practice.

APPENDIX B

Calculation of Inflection Points in the Attention–Performance Relationship

The analysis presented in Figures 3, 4, and 5 can be supplemented by computing the inflection points associated with each graph. These constitute the precise areas of the predicted curvilinear function in which changes in the values of international attention (noted as X) have a zero effect on MNE performance. For example, following Aiken and West (1991), one can determine a level of international attention at which MNE performance starts to produce negative performance outcomes (step 1), and across the range of particular moderators (noted as Z in step 2).

Step 1: Curvilinear effect of international attention on MNE performance

The calculation of the attention threshold begins with expressing the simple curvilinear second-order

equation involving the simple and square terms of international attention (noted as X), as they were obtained from Model 3 (Table 2):

$$MNE\ performance = 0.06X - 0.08X^2 + constant \quad (B.1)$$

We can rewrite Eq. (B.1) to show the regression of MNE performance on international attention:

$$MNE\ performance = (0.06 - 0.08X)X + constant \quad (B.2)$$

We can then calculate the first-order derivative, dY/dX , to estimate the slope of a tangent line to the attention curve:

$$dY/dX = 0.06 - 0.16X \quad (B.3)$$

Setting (B.3) to zero allows us to calculate the value of international attention at which MNE performance is at its highest:

$$0.06 - 0.16X = 0, \text{ thus } 0.06 = 0.16X, \\ \text{thus } 0.06/0.16 = XX = 0.37$$

Step 2: Moderating influences on this curvilinear effect
The following equation adds a linear-by-linear interaction between international attention and a moderator variable to the case considered in Step 1. While we simply illustrate our reasoning by considering the moderating influence of international attention (here noted as Z), the same

mathematical logic applies to all three categories of moderator.

The regression equation obtained in Model 4 can be written as follows:

$$\begin{aligned} \text{MNE performance} = & 0.05X - 0.11X^2 - 0.24Z \\ & + 0.30XZ + \text{constant} \end{aligned} \quad (\text{B.4})$$

We can rearrange this expression as follows:

$$\begin{aligned} \text{MNE performance} = & (0.05 + 0.30Z)X - 0.11X^2 \\ & - 0.24Z + \text{constant} \end{aligned} \quad (\text{B.5})$$

The expression $(0.05 + 0.30Z)$ indicates the overall linear trend in the regression of MNE performance on international attention at specific values of international experience. It can be seen that when HQ have no international experience (by this we mean that $Z = -0.32$, since Z is centered in the regression equation), the simple regression has an overall downward linear trend. When HQ executives have an average level of international experience ($Z = 0$), the simple regression has a slightly positive linear trend, which is further increased at higher levels of international experience ($Z > 0$). However, it is important to note that the nature of the curvilinear relationship between international attention and MNE performance is independent of international experience, because this moderator does not interact with the square term of international attention.

We can then use Eq. (B.5) to calculate the simple slope of the regression of MNE performance on international attention at any value of international experience:

$$dY/dX = 0.05 - 0.22X + 0.30Z \quad (\text{B.6})$$

Setting Eq. (B.6) to zero and solving for X yields the following expression for the value of

international attention at which MNE performance starts to drop, across different levels of international experience:

$$X = (0.04 + 0.30Z)/0.22 \quad (\text{B.7})$$

Substituting the value for conditions of “no international experience” ($Z = -0.32$) into Eq. (B.7), the ultimate threshold at which attention starts to produce negative performance outcomes is found at $X = -0.25$. For average ($Z = 0$) and high ($Z = 0.32$) levels of international experience, the attention thresholds are found at $X = 0.18$ and $X = 0.62$, respectively.

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