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ANTECEDENTS OF INTERNATIONAL AND DOMESTIC LEARNING EFFORT

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ABSTRACT

We examine the antecedents of international and domestic learning effort in independent firms. We combine learning theory and the "attention-based" view to examine how firms' degree of internationalization, the age at international entry, and entrepreneurial orientation are associated with the extent to which they engage in foreign and domestic learning activities. In particular, our study shows that early entry in foreign markets and an entrepreneurial orientation are positively related to a culture that promotes learning effort in international and domestic markets. On the other hand, whereas a firm's degree of internationalization does not have a significant association with international learning effort, the degree of internationalization is negatively related to domestic learning effort. We discuss the implications of our study for theory, practice, and future research.

Key Words: Internationalization, Entrepreneurial Orientation, Learning

EXECUTIVE SUMMARY

We use the attention-based view and learning theory to develop theory and hypotheses in terms of where internationalized firms devote their learning effort. The attention-based view of the firm argues that firm behavior depends on how attention and efforts are directed across activities (Ocasio, 1997). Learning theory (Cohen & Levinthal, 1990) suggests that firms learn more when they exert significant effort in processing new external knowledge. As such, we suggest that learning theory complements the attention-based view by revealing how much effort firms might devote to different external knowledge.

Consistent with the attention-based and learning-based views, we examine the relationship between a firm's effort to learn from its home market and its foreign market(s) with its current foreign presence, the extent of its foreign "identity," and its orientation toward competing. More specifically, we examine the relationship between the firm's degree of internationalization, its age at first international entry, and its entrepreneurial orientation with the attention that is devoted to learning activities in the international and domestic market place. Whereas we focus primarily on factors that explain why firms exert more or less effort directed at learning about foreign markets (i.e., "international learning effort"), we also consider the implications of such factors on the extent to which learning activities are undertaken in the domestic market place (i.e., "domestic learning effort").

We base our analysis on a sample of independent, owner-managed Belgian firms. We used Belgium as the research site to increase the likelihood for firms to have engaged in international activity. At the same time we expect significant variation in the timing and degree of internationalization among the sampled firms as earlier studies in small, European countries argued that while many firms see cross-border operations as necessary, others avoid, postpone, or minimize cross-border exposure.

Regression analyses show (1) that the degree of internationalization is negatively related to domestic learning effort but not related to international learning effort, (2) that the earlier a firm engages in international activity, the greater its international and domestic learning effort, and (3) that entrepreneurial orientation is positively related to the intensity of learning effort undertaken in the international and domestic market place.

One of the contributions of this study is that whereas prior research has examined how "born global" firms enter foreign markets based on their entrepreneurial skills and capacities (e.g., Oviatt & McDougall, 1997), we take a somewhat different approach by examining how

the firm's existing international operations, its age at foreign entry, and its entrepreneurial orientation are associated with the development of the firm's learning capacities.

We find that degree of internationalization is (mildly) positively associated with international learning effort but (significantly) negatively related to domestic learning effort. These results suggest that a firm's strategic attention is directed by the scope of its cross-border operations. Our finding that earlier entry into foreign markets is related to greater international and domestic learning effort suggests that early internationalization may create a company-wide learning culture: that is, international operations likely involve the whole organization rather than being restricted to the firm's unit(s) dedicated to international activities. Further, the results regarding the positive relationship between entrepreneurial orientation and both types of learning effort may indicate that a proactive, experimental market stance may promote a learning-by-doing dynamic which includes the intense assimilation of information regarding domestic and international markets. Overall, our study suggests, then, that if learning is essential to success, firms may be well-advised to adopt an entrepreneurial orientation and to enter foreign markets early rather than late. This prescription should be tempered by the recognition that early entry may also increase risk. Also, because high levels of internationalization may retard domestic learning effort, internationalizing firms may need to be mindful of domestic learning in order to maintain their overall competitive posture.

INTRODUCTION

In the increasingly knowledge-based global economy, firms seek proactively to internationalize earlier in their existence and more rapidly than in the past (Autio et al., 2000). Some ventures are even "born global." For many ventures, internationalization appears not just an afterthought, but an essential gambit. However, internationalization inevitably alters the focus of a firm's strategic attention (Ocasio, 1997). For firms that have internationalized, the important questions are no longer, "why should we internationalize?" or "when should we internationalize?" but rather "how much effort should be put in the international marketplace?" and "how should our domestic activities evolve to accommodate our multi-country status?"

With the development of the knowledge-based economy, what a firm learns and how it develops its learning capacity become increasingly critical (Grant, 1996; Zahra & George, 2002). We adopt the attention-based view and learning theory as the basic framework for developing theory and hypotheses regarding where internationalized firms devote their learning effort. The attention-based view of the firm argues that firm behavior depends on how its decision makers direct their attention across activities (Ocasio, 1997). More specifically, it holds that the focus of attention and effort depends upon what resources have been accumulated over time, what type of identity and relationships have been developed, and what rules are embedded within the organization. Thus, the current disposition of international assets, the international "identity" the firm has developed, and the firm's orientation toward competing should all be critical to where a firm directs its effort. Learning theory (Autio et al., 2000; Cohen & Levinthal, 1990; Zahra & George, 2002) holds that firms learn best when new knowledge is related to prior knowledge and when it devotes significant intensity of effort in processing new external knowledge. As such, it complements the attention-based view by revealing how much effort firms might devote to different external knowledge.

Much recent literature has argued that learning and knowledge creation are the most important strategic activities of the firm (Grant, 1996; Spender, 1996). Learning's importance stems from the centrality of knowledge to the firm, in that the firm may be understood "as a knowledge-creating entity" (Nonaka et al., 2000). In other words, a firm can be conceived as a means to acquire, assimilate and exploit knowledge to achieve commercial ends (Cohen & Levinthal, 1990); therefore, knowledge and the capability to create and use it "are the most important source of a firm's sustainable competitive advantage" (Nonaka et al., 2000:1). Important to new knowledge creation is the effort undertaken to identify and gather

knowledge (Cohen & Levinthal, 1990; Spender, 1996). If firms are to renew themselves via the renewal of their knowledge bases and their capacities to learn, they must expend requisite effort to obtain and assimilate new external knowledge (Zahra & George, 2002). For firms that compete not only domestically but also in one or more foreign markets, a critical question is how to allocate learning effort between domestic and foreign markets. Zahra, Ireland and Hitt (2000) claim that the ability to acquire and integrate foreign and domestic knowledge is critical to a multi-country firm's development and performance. Therefore, we focus in this study on factors that drive such effort.

Consistent with attention-based and learning-based views, we focus on the relationship of a firm's effort to learn from its home market and its foreign market(s) with its current foreign presence, the extent of its foreign "identity," and its orientation toward competing. We assume that international learning effort and domestic learning effort are related to one another in some systematic ways. That is, firms may be generally more or less "learning active," a condition that would result in some positive covariance of international and domestic learning effort. At the same time, the framework we develop suggests that domestic and international learning effort may at times be driven in different directions. As suggested in the above discussion, the extent of a firm's current international presence should have an effect on the allocation of its learning effort. We also suggest that the extent of a firm's international "identity" will affect its attention. Some researchers (e.g., Autio et al., 2000; Brush, 1992) have argued that the age at which a firm internationalizes affects the extent to which it sees itself as primarily a single-country firm or as a truly "inter- or multi-national" firm. Therefore, the age of the firm at foreign entry can be seen as a proxy for its identity. Finally, the firm's entrepreneurial orientation (i.e., its proactivity, innovation, and risk-taking [Miller, 1983]) establishes the rules and norms for expending effort toward knowledge development and renewal.

In order to study these issues, it was important to choose a market in which most firms would be operating in multiple countries. Earlier studies have indicated that multi-country operations, even among independent entrepreneurial firms, is common in smaller European countries (Autio et al., 2000; Eriksson et al., 1997). For this reason, and because one of the co-authors was located there, we selected Belgium as the research site.

THEORETICAL FRAMEWORK AND HYPOTHESES

Learning theory suggests that organizations learn when the activities and experiences of individuals become assimilated into the routines, systems, and policies of the organization (Grant, 1996). A premise of this paper is that the greater the attention a firm devotes to developing new knowledge and to exploiting existing knowledge, the greater its learning. This premise is consistent with prior theory which holds that the amount of information learned and the ease of its retrieval depend upon the intensity of effort expended in its acquisition (Cohen & Levinthal, 1990), and with the notion that a firm's behavior can be envisioned as the pattern of effort and attention devoted to specific activities (Ocasio, 1997). Learning is path dependent in that what a firm attends to and learns in one period helps define its feasible set in the next period (Cohen & Levinthal, 1990). Therefore, the success of firms in the marketplace will depend in large part on the early choices firms make and on the focus and level of their attention and effort (Autio et al., 2000). We therefore conceive of the extent to which firms devote attention to learning in the international as well as domestic marketplace as a critical outcome variable, and we focus on the question of how several factors affect this "learning effort."

Ocasio (1997) argued that a firm's behavior depends on existing resources, relationships and rules, and the manner in which these factors focus its strategic effort or attention. We apply Ocasio's framework to firms' development and renewal of their domestic and foreign market knowledge. Although learning is critical to the survival and growth of firms competing across borders (Johanson & Vahlne, 1991; Zahra et al., 2000), prior to the 1980s, research into internationalization related only indirectly to the role of learning. Instead, it focused on identifying how external factors (e.g., extending the product life cycle, securing needed resources, and gaining access to low cost factors of production) affected the timing and mode of internationalization (Kogut, 1989). During the 1980s research attention was given to the benefits of transferring knowledge between domestic and foreign markets and of coordinating effort across a network of locations (Bartlett & Ghoshal, 1989; Kogut, 1989). Firms may learn directly from foreign market experience and indirectly via observation of foreign firms or from interactions with foreign partners, and they may transfer the benefits of this learning from foreign markets to domestic markets and vice versa (Hamel, 1991; Johanson & Vahlne, 1991). Thus, the importance of learning as a means to achieve objectives (such as extending the product life cycle) or for its own regenerative properties has been increasingly recognized in the literature (Zahra et al., 2000).

Although firms' timing of internationalizing has been studied (e.g., Brush, 1992; Eriksson, et al., 1997; Johanson & Vahlne, 1991), few have investigated the subsequent effects of timing and extensiveness on the firm's behavior in the international and domestic marketplace (Autio, et al., 2000). Thus, while prior research has already widely addressed which factors drive internationalization, few attempts have been made to examine the effects of internationalization itself on firm behavior (Zahra et al. 2000). For instance, whereas the new venture internationalization theory (McDougall & Oviatt, 2000; Oviatt & McDougall, 1997) argues that "born-global" firms enter foreign markets based on their unique knowledge and skills, we look at the reciprocal effect, i.e., the relationship of the developing internationalization extent with knowledge creation. That is, we examine how the firm's scope of international activities ("degree of internationalization") and the timing of first international activities ("age at international entry") is related to the intensity of the firm's learning activities.

Consistent with Johanson and colleagues (Eriksson et al. 1997; Johanson & Vahlne 1991; Johanson & Vahlne, 2003), we consider not only the "state" of a firm's international presence but also its propensity to "change" status. Johanson and Vahlne (1991; 2003) described the process of internationalization as a continual interplay between the current commitment of the firm's resources and decisions to alter commitment. They posited that further commitment to foreign markets accumulates incrementally as uncertainty about foreign competition diminishes with experience. We posit here that the pace of this process is influenced by the extent of the firm's entrepreneurial orientation. Classically risk-averse firms will follow the slow, incremental process described in Johanson and Vahlne's early formulations (1991). However, proactive, risk-taking firms will move at a faster pace, hungry to acquire and assimilate as much new external knowledge as possible. In attention-based terminology, such firms could be said to have developed rules and norms that favor innovation, proactiveness, and risk-taking. Consistent with the development in the entrepreneurship literature, we will label such propensities as "entrepreneurial orientation" (Lumpkin & Dess, 1996; Miller, 1983). For simplicity's sake and in order to enhance the chances of having a single construct, we adopt the three dimensions of Miller rather than the five dimensions of Lumpkin and Dess (which include also autonomy and competitive aggressiveness); Lumpkin and Dess themselves (1996) suggest that their five dimensions may not always covary within any given firm.

In summary, prior research is not explicit about the correlates of international and domestic learning effort, activities at the core of competitive survival and success (Grant,

1996). The effect of the internationalization process itself on learning has received scant examination. Ocasio's (1997) attention-based view suggests, however, that the antecedents of a firm's allocation of learning effort reside in the resources, identity, and rules it has built. Autio et al. (2000) argued that a firm's international identity and learning are shaped by when in its life cycle it becomes international and how rapidly it grows into this identity. Though supporting the notion that current extent of internationalization is important to ongoing effort, Johanson and Vahlne's model (1991; 2003) stops short of explaining why different firms with the same level of resource commitment to international activities might proceed at different rates. We suggest below that in addition to current commitment, the timing of initial foreign entry and current entrepreneurial orientation are also important correlates of effort. Thus, we seek to develop a simple model of domestic and international learning effort that will extend thinking on firm learning and internationalization.

Degree of Internationalization and Learning Effort

Ocasio (1997) argued that a firm's behavior is partly affected by its existing resources, in that the nature of a firm's resources affects the extent to which the firm has the capabilities and skills to perform activities in a given area (Shane & Venkataraman, 2000). The degree of internationalization realized by a firm represents its allocation of its physical and human resources to foreign versus domestic activities; as such, it is a multidimensional construct (Sullivan, 1994). To a greater extent than years of foreign operation, degree of internationalization measures a firm's commitment to activities outside its domestic market. Further, although internationalization is often operationalized as percentage of foreign sales for simplicity's sake, it is a broader concept that implies investment in assets, people, and activities that extend beyond sales alone (Sullivan, 1994).

Degree of internationalization is likely associated with the attention a firm gives to exploring and exploiting opportunities in foreign markets because it shapes what resources the firm acquires, the rules of operations it adopts, and the relationships it develops. Eriksson et al. (1997) found that as degree of internationalization increases, perceived risks of further commitment to foreign markets diminishes. Johanson and Vahlne (1991) argued that the reduction of perceived risks would lead to broader and more intense devotion to new markets outside the firm's borders.

Learning theory suggests that more intense and repetitive processing leads to greater knowledge acquisition. As a firm devotes more resources to and obtains more sales from

foreign markets, the intensity of its learning effort in these contexts may also increase (Ocasio, 1997). For example, Zahra et al. (2000) found that diversity of foreign market presence enhances technology-based firms' ability to learn in international markets. In our setting, the implication is that firms' increase of their sources of foreign revenue, number of employees devoted to foreign activities, and scope of foreign operations, will be associated with greater foreign learning effort. Thus, we hypothesize:

> Hypothesis 1A: The degree of internationalization is positively related to international learning effort.

Since degree of internationalization reflects not just the magnitude of a firm's foreign presence but also the importance of such presence relative to domestic activities, the issue arises as to internationalization's relationship to firms' learning effort in domestic markets. Is there a trade-off between the extent to which the firm devotes effort to foreign versus domestic learning activity when a firm is many countries, or does international learning effort reinforce learning effort in the domestic marketplace? Our earlier arguments suggest that the capacity to learn in domestic markets may increase with internationalization: broader and deeper experiences in varied markets may well raise a firm's overall learning capacity (Cohen & Levinthal, 1990; Zahra et al., 2000). However, the relative incentive to learn may diminish in the domestic market as the firm becomes more internationalized. As firms increase their international presence, the returns to learning effort increase outside their domestic market and decrease at home. Compare, for example, a firm that conducts 90% of its business abroad to one of similar size that conducts only 15% of its business abroad. The latter has greater incentive to focus its effort in the domestic market.

The degree of internationalization represents the weighted scope of a firm's operations. As such, we expect that learning effort may be focused accordingly. Implicit in earlier arguments is the idea that learning gained in one arena may be reallocated elsewhere (Kogut, 1989). However, learning through resources devoted to foreign markets may not have as full or as immediate an impact in the domestic market as it does in the markets from which it is derived. Consequently, with rising internationalization a firm is likely to shift its attention to foreign markets in order to reap fully the benefits of further expansion. If, as Johanson and Vahlne (1991) have argued, a firm's internationalization follows a pattern of movement to ever more geographically and culturally distant locales, the benefits of domestic learning effort will diminish correspondingly as the firm becomes more internationalized. For

example, a German food processor that has developed networks of high-quality suppliers for its plants in France and Poland may not expend as much effort learning what will satisfy German suppliers as would a food processor who relies almost exclusively on domestic suppliers.

In summary, although increased internationalization may be associated with an enhanced learning capacity, it also draws attention from the home market as the prospective returns to learning increase elsewhere. Furthermore, as the typical pattern is for internationalization to move over time to ever more remote markets, the payoff to effort at home becomes less attractive. Thus, we hypothesize:

> Hypothesis 1B: The degree of internationalization is negatively related to domestic learning effort.

Age at International Entry and Learning Effort

Prior research has suggested that firms develop their nature, mindset, and identity early in their existence (Autio et al., 2000; Boeker, 1989). Therefore, a firm that embarks early on international operations is more likely to see itself from the outset as “inter- or multi-national” (Brush, 1992) and will recognize early on the benefits of learning effort in foreign markets. In other words, operating internationally from an early age will likely affect what it attends to and what it accumulates in a path-dependent manner (Ocasio, 1997).

Prior research has found empirical support for an effect of age at first entry on learning outcomes and on identity. For instance, Autio et al. (2000) found that starting international activity early on increased the firm’s international growth; they attributed this phenomenon to more effective learning in international markets. They argued that early internationalizers see foreign markets as less "foreign." Consistent with this view, Brush (1992) showed that the earlier firms internationalized, the more they identified themselves as international firms. Johanson and Vahlne (1991; 2003) argued that the earlier a firm's experience with foreign markets, the less the perception of risks in such markets. In short, early entry into foreign markets reduces the fear of expending effort in learning about foreign markets.

Furthermore, when the firm internationalizes early on, it is less likely that relationships with domestic partners represent the sole or even primary source of the firm’s business contacts (Autio et al., 2000). The attention-based view suggests that the firm’s existing relationships are important drivers for firm behavior (Ocasio, 1997). That is, the firm’s current

engagement vis-à-vis others may give rise to future firm activities that are commensurate with the relationships that have been developed over time. Therefore, we argue that the age at which a firm engages for the first time in international activities may create a situation in which possible constraints imposed by domestic relationships are diminished and further learning about international markets is promoted. In other words, early internationalizers are less affected by existing commitments to domestic market players, and more likely to develop knowledge through relationships that have been built in the international market place. Thus, we hypothesize:

> Hypothesis 2A: The firm's age at international entry is negatively related to its international learning effort.

Although we hypothesized that early internationalization increases international learning effort, the potential effects of early internationalization on domestic learning effort and attention is less clear. Autio et al. (2000) argued that early internationalization helps to instill a learning culture in an organization that should benefit domestic as well as foreign effort; they labeled the overall benefits as "learning advantages of newness" that helps some new firms overcome liabilities of foreignness and newness in entering foreign markets. While it is possible that early foreign entry may help establish a general learning culture in a firm, the logic of Hypothesis 2A suggests that firms that venture beyond their own borders at a very early age will not identify as strongly with their domestic markets as firms that operated solely in one market for a longer period of time. Managers of firms that enter international competition late are likely to have built habits and routines that have affixed great attention to the domestic market (Ocasio, 1997). Furthermore, learning theory suggests that prolonged focusing of attention in a restricted domain creates competency traps that are difficult to overcome (Cohen & Levinthal, 1990; Levinthal & March, 1993). For example, a Spanish chemical company that has focused its effort on complying with domestic environmental standards may be less capable of adjusting to Scandinavia's stricter standards.

In brief, when a firm initiates involvement in international activities early on, it is more likely to develop routines aimed at the international rather than the domestic market place. Conversely, the domestic learning routines of firms that internationalize late will be deeply embedded. Therefore, we hypothesize:

Hypothesis 2B: The firm's age at international entry is positively related to its domestic learning effort.

Entrepreneurial Orientation and Learning Effort

In the attention-based view, the rules or norms of a firm are critical to its ongoing effort. Thus, we expect that the entrepreneurial orientation of a firm will affect its learning effort in both foreign and domestic markets. Further, as entrepreneurial orientation represents the rules and norms by which a firm makes decisions (i.e., its "organizing principles"), it is likely to be associated with domestic and learning effort in a consistent manner. The three behaviors signifying entrepreneurial orientation around which there is growing consensus are innovation, proactivity, and risk taking (McDougall & Oviatt, 2000; Miller, 1983). Although many entrepreneurship theorists have touted the benefits of an entrepreneurial orientation, few have empirically tested its effects (Lumpkin & Dess, 1996).

Firms that enter foreign markets are exposed to high uncertainty emanating both out of their own lack of knowledge and the increased complexity of operating in multiple, dissimilar markets (Eriksson et al., 1997; Johanson & Vahle, 1991). Learning in a foreign market involves identifying and understanding a country's different requirements (e.g., product standards, industry norms, customer needs) as well as the tendencies and capabilities of local competitors (Erikkson et al., 1997; Zaheer & Mosakowsi, 1997). The extent to which a firm engages in learning effort in new markets is likely to be related to its entrepreneurial orientation. For instance, the firm's propensity to proactively search for new business partners is reflected in its orientation (Lumpkin & Dess, 1996). Firms proactive in seeking foreign suppliers, customers, and alliance partners will more likely engage in intensive knowledge exchange with their foreign partners in order to benefit from these relationships.

Zaheer and Mosakowki (1997) suggested that first-mover advantages may be available to innovative firms entering new foreign markets so long as they rapidly learn in the new settings. Their study suggested that a rationale for undertaking learning effort abroad is that such effort increases the likelihood of success of the adoption of new technological developments in foreign markets. As their "liability of foreignness" concept suggests, however, such learning effort involves risks of running afoul of local customs and laws, miscalculating locals trends and preferences, and paying higher prices for access to channels and supplies. We contend that the more entrepreneurially oriented the firm, the more likely it will go beyond mere exporting or licensing to learn about and engage in the day-to-day

activities of the foreign market. Without risk taking, knowledge acquisition in foreign domains may be extremely limited. Eriksson et al. (1997) maintained that critical foreign knowledge may be gained only through bold foreign operations. Firms that are "timid" may not expend requisite learning effort.

It is important to note that whereas entrepreneurially-oriented firms may learn far more through their aggressive behavior, they may also make more mistakes than their less entrepreneurial counterparts. In other words, performance may vary greatly across highly entrepreneurial firms, as some experiments fail miserably while others succeed. Nonetheless, we argue that an entrepreneurial orientation should typically be associated with greater effort devoted to learning about foreign markets as firms probe for new opportunities. Thus, we hypothesize:

Hypothesis 3A: A firm's entrepreneurial orientation is positively related to its international learning effort.

As implied above, entrepreneurial orientation is also likely to be positively associated with effort devoted to learning in the domestic market. Identifying, acquiring, and assimilating new knowledge may not be as risky in domestic markets as in foreign markets, but an entrepreneurial orientation implies proactive opportunity seeking in these markets as well. Learning in the domestic market requires special effort to review and challenge periodically all assumptions. By definition, entrepreneurially-oriented firms seek new ways to do things and seek them without provocation. In short, learning effort in domestic markets should also be higher when the firm has a bias for action, i.e., an inherent characteristic of entrepreneurial orientation. Thus, we hypothesize:

Hypothesis 3B: A firm's entrepreneurial orientation is positively related to its domestic learning effort.

METHODOLOGY

Our sample was drawn from a database maintained by the Entrepreneurial Center at the Vlerick Leuven Gent Management School in Belgium that includes owner-managed, independent firms (i.e. not units of other companies). Firms in the sample compete in various industries including measuring equipment, construction, transportation, chemical, non-

financial services, food, textile, computer peripherals, and others. We pre-tested our questionnaire with academics experienced in knowledge-based and international research, then revised potentially confusing items.

We used previously validated measures (e.g. degree of internationalization, entrepreneurial orientation) wherever possible to help ensure their validity. Where prior scales did not exist (e.g., learning effort), we constructed measures based on suggestions in the literature (see Appendix for detailed items). The questionnaire was addressed to each firm's CEO since research has shown that firms' top executives have relevant information about their internationalization (McDougall, 1989); our sample of owner-managers presumably were especially well-informed and influential in the strategic direction of their companies. We collected the data via two mailings of our questionnaire. In the spring of 2000, surveys were mailed to 500 firms randomly selected from the database; we initially received 59 responses; in the summer of 2000, we received 33 responses to a follow-up survey. We only retained for further analyses those firms that had less than 1,000 employees. As a result, the final sample was composed of 90 respondents, which represents a response rate of 18%. Since the literature suggests that late respondents may share characteristics with non-respondents, we compared early and late respondents on the variables under study (Churchill, 1991). We found no statistically significant differences between early and late respondents. Thus, we have no evidence to suggest response bias.

Because there are no precise proxies for many of the variables in our study, we relied on the self-reported assessments of each firm's CEO. Such an approach raises the possibility that the relationships among variables result from common-method variance (Wagner & Crampton, 1993). That possibility was reduced by employing previously validated measures where possible (Spector, 1987). In addition we conducted Harman's one-factor test on all variables included in the study (except for the industry variable), as suggested by Podsakoff and Organ (1986). Substantial common-method variance would result in few factors accounting for most variance in the variables. Factor analysis resulted in multiple factors with eigenvalues greater than one, with the first factor accounting for only 24 percent of the total variance. This indicates that common-method variance did not cause the relationships among the variables in our sample (Podsakoff & Organ, 1986). Finally, our inclusion of multiple items to measure learning effort, degree of internationalization, and entrepreneurial orientation promoted content validity.

Dependent Variables

International learning effort: Consistent with prior research (Eriksson et al.,1997; Yu, 1990), we measured learning effort in foreign markets via items asking to what extent the firm engages in effort to exploit (1) general international procedures and systems (items 1 and 2 in the appendix) and (2) specific factors in its most significant foreign market (items 5-8). Combining these items resulted in an international exploitation scale (alpha = .74). Parallel items focused on effort to explore general international procedures and systems (items 3-4) and specific factors in the most significant market (items 9-12); the combined items had an alpha of .80. Factor analysis indicated that the subscales could be combined into a single international learning effort scale (alpha = .85). On a scale from 1 to 5, responses ranged from 1 to 4.5 with a mean of 2.83. To examine convergent validity, we conducted a confirmatory factor analysis. All items but one had a factor loading higher than .35 thereby demonstrating good convergent validity (Sharma, 1996).

Domestic learning effort: For the sake of comparability, we measured domestic learning effort in a manner consistent with international learning effort. We employed similar activities to assess domestic exploitation (items 1-6 in the appendix) and exploration (items 7-12) as in the international setting, attaining alphas of .83 and .85 respectively. Again, factor analysis indicated that the two subscales could be productively combined into a single domestic learning effort scale (alpha = .92). On a scale from one to five, responses ranged from 1 to 4.75 with a mean of 3.11. Confirmatory factor analysis revealed that all 12 items had factor loadings higher than .35, demonstrating good convergent validity (Sharma, 1996).

One could argue that international learning effort and domestic learning effort are two dimensions of the same construct, i.e., they reflect the common idea of how much attention is devoted by the firm to learning activities overall. However, it is important to note that we did not conceive of "learning effort" as an inherent characteristic of an organization, but rather as a kind of activity. In other words, whereas it may be true that many firms score either high or low on both dimensions, conceptually it is feasible that some firms score, e.g., high on one dimension and low on the other dimension. In order to check for discriminant validity between international and domestic learning effort, we undertook a confirmatory factor analysis with the two correlated factors. We found that the variance the two factors have in common with each other (i.e., .22) is substantially lower than the total variance each of the factors has in common with its respective items (i.e., .34 for international learning effort, and .48 for domestic learning effort). This finding suggests the presence of good discriminant

validity between the international learning and domestic learning effort constructs (Sharma, 1996).

Independent Variables

Degree of internationalization: The most appropriate way to measure a firm's internationalization has been subject to discussion (e.g., Fischer & Reuber, 1997; Ramaswamy, Kroeck, & Renforth, 1996; Sullivan, 1994). Based on the work of Fischer and Reuber (1997), we measured the degree of internationalization through a multi-dimensional approach (Sullivan, 1994) that included a list of subfactors to address some limitations to typical measures of internationalization (Ramaswamy et al. 1996): (1) foreign sales as a percentage of total sales, a single-item measure of a firm's degree of internationalization; (2) the percentage of employees who spend a significant part of their time on international activities; and (3) the geographic scope of foreign sales, measured as by Fischer and Reuber (1997); for this last dimension we calculated a single, weighted score for each respondent by counting the areas (out of 12 countries or groups of countries) in which the firm had realized foreign sales. Weights assigned to the categories represented their geographic and cultural distance from the firm's domestic market: a weight of "one" was assigned to the five countries bordering Belgium (including the United Kingdom), "two" to other countries within the European Union, "three" to other European countries and North America, and "four" to other countries. Because scales differed across the three internationalization dimensions, we standardized and then averaged the items. Cronbach's alpha for this measure was .82.

Age at international entry: The age at international entry was determined by subtracting the founding year from the year of first realized revenues outside the domestic market. We used realized foreign sales as the sole criterion in order to obtain an unambiguous date for each firm. Other researchers have indicated that foreign sales is the most widely used measure of foreign activity (Autio et al., 2000). The average age at first internationalization was 16 years.

Entrepreneurial orientation: We used the scale validated by Miller (1983) to gauge entrepreneurial orientation; the seven items capture the firm's innovation, risk taking , and proactivity. This measure had a Cronbach's alpha of .65. Although a confirmatory factor analysis of the seven items demonstrated good convergent validity, the alpha for entrepreneurial orientation (.65) is lower than the cut-off value of .70 suggested by Nunnally (1978). The reason for the relatively low reliability of our measure may be that the construct

consists of dimensions that do not always covary and may vary independently in a given context (Lumpkin & Dess, 1996; Ramaswamy et al., 1996). However, we chose to use a composite measure consistent with Miller's (1983) original measure. In other words, we argue that a fundamental set of behaviors may underly entrepreneurial processes (Covin & Slevin, 1989; Miller, 1983)

Control Variables

Years of international experience: We added international experience as a control variable since a firm's international experience may affect its learning effort in foreign markets (Eriksson et al., 1997; Johanson & Vahlne, 1991). For instance, firms with great international experience may be less motivated to expend effort in international learning activities. On the other hand, firms possessing significant international experience may want to leverage that experience by further increasing their learning effort abroad. Furthermore, by simultaneously examining years of experience and age at international entry, we were able to examine the effects of age at first internationalization beyond the effects of experience.

Firm size: We included number of employees as a control variable since large firms may have more resources to devote to learning activities. Firm size averaged 87 for the sample.

Industry: We also controlled for industry sector since firms in more knowledge-intensive industries may be more inclined to exert significant learning effort. We assigned the responding firms to 7 categories corresponding with 7 SIC divisions (agriculture, construction, manufacturing, transportation, wholesale trade, retail trade, and service). The different industries were coded with dummy variables, with agriculture serving as the base case in regression analyses.

As can be seen from Table 1, the correlations among the independent variables and control variables are generally modest.

Insert Table 1 About Here

However, we checked for multicollinarity in the two regression models shown in Table 2 and found no threat to interpretation.

Insert Table 2 About Here

RESULTS

As mentioned earlier, an analysis of the bivariate correlation coefficients showed a positive relationship between international learning effort and domestic learning effort (Table 1; $r = .52$ [$p < .001$]); this suggests that learning activities regarding international and domestic issues tend to move in concert. All hypotheses were tested using multiple regression analysis. The first column in Table 2 summarizes the results for Hypotheses 1A to 3A which pertain to how our independent variables are associated with a firm's international learning effort. We included only those firms that had already undertaken international activity (i.e., 76 firms) to examine international learning effort. Although a positive correlation exists between the degree of internationalization and international learning effort (Table 1), Hypothesis 1A does not receive support: degree of internationalization is not related to international learning effort when controlling for all other variables. However, Hypothesis 2A is supported: age at international entry is negatively related to international learning effort at $p <. 05$. Finally, Hypothesis 3A is also supported: entrepreneurial orientation is positively related to international learning effort at $p < .01$.

The second column in Table 2 summarizes the results for Hypotheses 1B to 3B which pertain to how our independent variables are related to domestic learning effort. For this analysis we included all firms in the sample (i.e., 90 firms). First, Hypothesis 1B is supported: degree of internationalization is negatively related to domestic learning effort ($p <. 05$). However, Hypothesis 2B is not supported: age at international entry is significantly related to domestic learning effort ($p < .05$), but in the opposite direction than hypothesized. That is, we found that early internationalization increases rather than decreases domestic learning effort. Finally, Hypothesis 3B receives support: entrepreneurial orientation is positively related to domestic learning effort ($p < .01$).

The regression analyses also showed that the control variables "years of internationalization" and "firm size" are not significantly related to either international or domestic learning effort. However, firms in the construction and manufacturing sector are

found to exert somewhat higher international learning effort than firms in other industry sectors.

DISCUSSION

We combined learning theory (Grant, 1996) and the attention-based view (Ocasio, 1997) to understand the antecedents of international and domestic learning effort. Specifically, we examined how degree of internationalization, age at international entry, and the entrepreneurial orientation of the firm are related to the intensity of effort undertaken in the international and domestic market place. Our selection of a set of firms in a small European country (Belgium) enhanced the likelihood that the firms would engage in significant cross-border activity; indeed, 84% of the firms had international activities. We found (1) that the degree of internationalization is negatively related to domestic learning effort but only marginally positively related to international learning effort, (2) that the younger a firm is when it engages in international activities, the greater its subsequent international and domestic learning effort, and (3) that entrepreneurial orientation is positively related to both international and domestic learning effort.

Although it is easy for firms to become caught up in the enthusiasm over international markets, we intended to examine the implications of firms' internationalization on strategic attention in the international and domestic market place. Our results regarding the degree of internationalization suggest that the scope of cross-border operations is related to organizational learning effort in domestic markets such that greater internationalization is associated with less domestic learning effort. This result may suggest that domestic strategic effort is affected by the scope of international operations. The lack of a relationship in our study between degree of internationalization and international learning effort is the more surprising result. One explanation is the possibility that internationalization requires significant learning effort that is relatively invariant to the degree of internationalization. Alternatively, it is possible that beyond some low level of internationalization further increments do not add much to learning effort. Another possibility is that some aspects of internationalization are more related to learning effort than others. Additional analyses shed some light on these interpretations. Contrary to the first two explanations, we find that the correlation between the degree of internationalization and international learning effort is not significantly greater at lower levels of internationalization. We do find that geographic scope is more strongly related to international learning effort than percentage of foreign sales and

employee time dedicated to foreign activities; however, the three relationships are not different enough from one another to warrant definitive conclusions. The most likely explanation for the lack of a relationship between degree of internationalization and international learning effort is that the variance that degree of internationalization shares with years of international experience cause the former to be insignificant in the regression equations. Table 1 indicates a strong bivariate relationship between degree of internationalization and international experience ($r = .29$; $p < .01$), supporting this view.

Overall then, our results suggest that greater involvement in international markets is associated with less domestic learning effort with perhaps marginally greater international learning effort. This relationship may represent a conscious tradeoff; it is also possible that the tradeoff is not a conscious one, but the unintended consequence of shifting resources from domestic to international effort. The potential consequences of such a shift represents a fertile area for study.

Our finding that earlier initiation of international activity foretells greater learning effort is consistent with the idea that early venturing into new environments may embed in firms a propensity for experimentation. This interpretation is consistent with Autio et al. (2000) who argued that early internationalizers might be able to learn more rapidly in new foreign settings than those who internationalize at an older age. We extended their work by showing that such effects apply not only to international but also to domestic learning. More startling, perhaps, is the apparent persistence of those effects well into the firm's life. This result may also suggest that organizational learning accumulates rather than depreciates over time (Argote, 1996), in line with Boeker's (1989) contention that a firm's early actions enduringly affect its character and propensities. Whereas the high-tech firms in Autio et al.'s (2000) sample were early internationalizers, the average age at first internationalization for our firms was 16 years, and our firms were not primarily high-tech. Yet our results suggest, as did theirs, that the earlier a firm ventures abroad, the more fully that step embeds in the firm an identity conducive to learning (Ocasio, 1997). One possibility is that early internationalizers avoid subsequent "lock-out" from new knowledge (Cohen & Levintal, 1990) as their learning culture allows more effective assimilation of international knowledge than other firms can attain. Zahra et al. (2000) argued that a firm inculcates important learning skills throughout its organization by operating in diverse markets. The earlier that this process begins, the stronger the firm's learning culture should become and the more it will learn about both foreign and domestic markets. Consistent with Zahra et al. (2000), our results regarding

domestic learning effort suggest that early international operation affects the whole organization rather than being restricted to its unit(s) dedicated to international activities.

In short, we find that early venturing into foreign markets is associated with a greater learning culture. Firms that internationalize early and survive the experience are likely not only to put greater effort into learning activities in those markets, but also to see greater opportunities for productive learning at home (Shane & Venkataraman, 2000). Consistent with behavioral and learning theory, Autio et al. (2000) pointed out that because learning and organizational mindset are path-dependent, how organizations solve their early problems will have a compounded effect over time on how they handle problems. Our results are consistent with their argument that early internationalizing allows firms to learn more rapidly and thereby to grow both in foreign markets and domestically.

Our results regarding entrepreneurial orientation suggest that a proactive, experimental market stance involves active learning at home and abroad. Lumpkin and Dess (1996) proposed that an entrepreneurial orientation will lead to better organizational performance but did not explain how this takes place. Our study proposed that the effects of entrepreneurial orientation are realized through its association with learning effort. By definition, an entrepreneurial orientation involves innovation and risk-taking (Lumpkin & Dess, 1996). We suggest that an entrepreneurial orientation promotes a learning-by-doing dynamic whereby firms must assimilate more information—whether regarding domestic or international markets (or both)—in order to survive the additional requirements of this strategic posture. If successful, such increased attention may lead to increased dynamic capabilities (Zahra et al. 2000). Greater competence in the use of information may help decision makers to overcome the fear of failure and reluctance to change (Aldrich, 1979; Hannan & Freeman, 1989). However, proactivity is not a panacea; increased risk-taking may result in higher threats to survival or profitability (Shaver, Mitchell & Yeung, 1997).

Contributions of this Study

We used the attention-based view and learning theory to developing theory and hypotheses in terms of where internationalized firms devote their learning effort. The attention-based view of the firm argues that firm behavior depends on how attention and efforts are directed across activities (Ocasio, 1997). Learning theory (Cohen & Levinthal, 1990; Zahra & George, 2002) suggests that firms learn more when they exert significant effort in processing new external knowledge. As such, learning theory complements the attention-

based view by revealing how much effort firms might devote to different external knowledge. Consistent with attention-based and learning-based views, we examined the relationship between a firm's effort to learn from its home market and its foreign market(s) with its current foreign presence, the extent of its foreign "identity," and its orientation toward competing.

Another contribution of this study was to extend examinations of the relationship between internationalization itself and organizational learning (Zahra et al. 2000). Whereas the new venture internationalization theory (McDougall & Oviatt, 2000; Oviatt & McDougall, 1997) posits that "born global" firms enter foreign markets on the strength of their superior entrepreneurial skills, capacities, and vision, we looked at the reciprocal effects of this phenomenon. That is, we examined how venturing into foreign territory at an early age and expanding international scope may develop the firm's learning capacities. Our study contributes further by introducing entrepreneurial orientation into the explanation of internationalization. To the often abstract discourse on "entrepreneurial" approaches to internationalizing firms we add a learning theory logic and empirical evidence to support the theory.

Further, this study sheds some light on whether firms sacrifice the pursuit of domestic excellence in pursuit of other markets. In short, our results suggest that international and domestic learning are generally complementary. The one exception we observed was that increased internationalization may come at the expense of learning effort in the domestic market. Furthermore, our results also indicate that learning firms do not tend to trade off exploration for exploitation; indeed, supplementary analyses showed that the two forms of learning effort appear to work in concert in whatever realm the firm emphasizes.

In terms of managerial practice and public policy, our study helps to clarify the factors that promote or inhibit organizational learning among independent companies when their domestic economy offers insufficient opportunities for growth. Our results suggest that firms can undertake significant effort to learn about international markets regardless of their years of international experience. Moreover, our results suggest that if learning is essential to success, the firm may be well-advised to adopt an entrepreneurial orientation and enter foreign markets early rather than risk falling behind competitively. The fact that high levels of internationalization retard domestic learning effort is potentially important. Reduced attention to learning in the domestic market could impair effectiveness, a possibility salient both for individual firms and for government policy initiatives.

Limitations and Future Directions

Our study is subject to several limitations that typify behavioral research and suggest caution in interpreting its results. First, our sample consisted only of surviving firms. The learning effort of failed companies and of companies that abandoned international involvement would add substantially to the richness of the research, especially if firm performance were to be added to the research model. Second, the cross-sectional design of the study cannot guarantee the direction of causality among variables. Although our argumentation and discussion often implied causal ordering, we recognize the uncertainty attending such claims. For instance, some relationships may be susceptible to reverse causality. For instance, higher levels of international learning effort may drive firms to further undertake proactive and innovative actions in foreign markets. Nonetheless, the central hypotheses were based on solid theory, and it may be difficult to imagine, e.g., that international learning effort drives the age of international entry rather than the reverse. Even so, future research effort should focus on collecting data over time in order to clarify these relationships.

The lack of public data on key constructs required that we rely on self-reported data for many variables. We took several precautions to guard against various forms of bias yet could not eliminate the possibility that bias affected our data. Although some of the constructs under consideration are perhaps best measured via questionnaires, outside proxies would increase confidence in the external validity of our measures. This study's focus on one country, Belgium, may call into question its applicability to other domains. We find no reason, however, to believe that the theoretical foundation for our hypotheses should obtain more fully in Belgium than elsewhere. Furthermore, restricting our study to one relatively homogenous country removed many market variables as potential sources of "noise" that could cause non-significant results.

Several interesting paths exist for further investigation. We posited that an entrepreneurial orientation, through its effects on a firm's effort to learn, creates advantage. It is possible, though, that this orientation is a product of the firm's history, and that past successes and the advantages they established fostered it. We know little about factors that impede firms that otherwise might have pursued international opportunities; identification of the causes of their inertia or fear could clarify the antecedents of learning. Finally, much remains to be discovered about the conversion of knowledge to competitive advantage and what factors might inhibit it.

We set out to examine how a firm's degree of internationalization, its age at foreign entry, and its devotion to entrepreneurial action are associated with its effort to learn. We treated internationalization as an independent variable and also added entrepreneurial orientation as a possible determinant of learning effort. We found evidence for the importance of both features in understanding the level of organizational learning effort and hope that others will be stimulated to examine these issues further.

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APPENDIX

International learning effort. Please indicate the extent to which your firm undertakes significant effort in:

Exploiting current internal procedures regarding your international activities.

Exploiting current reward systems regarding your international activities.

Developing new internal procedures regarding your international activities.

Developing new reward systems regarding your international activities.

For the most important foreign market, please indicate the extent to which the firm undertakes significant effort in:

Exploiting current knowledge regarding local competitors.

Exploiting current knowledge regarding local cooperative agreements in your industry.

Exploiting current knowledge regarding local laws that affect your business.

Exploiting current knowledge regarding local business norms in your industry.

Developing new knowledge regarding local competitors.

Developing new knowledge regarding local cooperative agreements in your industry.

Developing new knowledge regarding local laws that affect your business.

Developing new knowledge regarding local business norms in your industry.

Domestic learning effort. Please indicate the extent to which your firm undertakes significant effort in:

Exploiting current internal procedures for managing the domestic market.

Exploiting current reward systems regarding your domestic activities.

Exploiting current knowledge regarding domestic competitors.

Exploiting current knowledge regarding domestic cooperative agreements in your industry.

Exploiting current knowledge regarding domestic laws that affect your business.

Exploiting current knowledge regarding domestic business norms in your industry.

Developing new internal procedures for managing the domestic market.

Developing new reward systems regarding your domestic activities.

Developing new knowledge regarding domestic competitors.

Developing new knowledge regarding domestic cooperative agreements in your industry.

Developing new knowledge regarding domestic laws that affect your business.

Developing new knowledge regarding domestic business norms in your industry.

Degree of internationalization. Please give the following information regarding your international activities in 1999:

Total revenues _____; Revenues outside Belgium _____.

Percentage of employees who spent significant time in activities pertaining to international markets: _____%.

Which of the following (groups of) countries belong to your international markets (Netherlands, Luxembourg, France, Germany, UK, Other EU countries, Other countries outside the EU, North-America, South-America, Asia, Africa, Australia)? Please circle all those that are appropriate.

Entrepreneurial orientation. Please indicate the extent to which the following characterizes your firm's activities:

Our firm spends more time on long term R&D (3+ years) than on short term R&D.

Our firm is usually among the first to introduce new products in the industry.

Our firm rewards taking calculated risks.

Our firm shows a great deal of tolerance for high-risk projects.

Our firm uses only “tried and true” procedures, systems, or methods.

Our firm challenges, rather than responds to its major competitors.

Our firm takes bold, wide-ranging strategic actions rather than minor changes in tactics.

TABLE 1

Means, standard deviation, ranges, coefficients alpha, and correlations of the variables

		1	2	3	4	5	6	7
1	Degree of internationalization							
2	Age at international entry	-.065						
3	Entrepreneurial orientation	.035	.109					
4	International experience	.290**	.048	-.151				
5	Firm size	.397**	.170	-.053	.446**			
6	International learning effort	.274**	-.216*	.392**	.105	.087		
7	Domestic learning effort	-.105	-.148	.323**	.037	.036	.524**	
Mean		-.02	15.82	3.21	15.91	87.48	2.83	3.11
Standard deviation		.84	24.35	0.59	16.02	164.60	0.68	.81
Minimum		-.99	0.00	1.71	0.00	1.00	1.00	1.00
Maximum		2.07	127.00	5.00	66.00	1,000	4.50	4.75
Alpha		0.82	n/a	0.65	n/a	n/a	0.85	0.92

For firm size, the natural logarithm is used in correlations, but actual values are reported in descriptive statistics.

** $p < .01$, * $p < .05$, + $p < .10$; two-tailed tests (N = 76).

TABLE 2

Regression tests

Dependent variables →	International Learning Effort	Domestic Learning Effort
H1A&B: Degree of internationalization	.136	-.269*
H2A&B: Age at 1st internationalization	-.225*	-.252*
H3A&B: Entrepreneurial orientation	.382**	.384**
International experience	.055	.082
Firm size (log of number of employees)	.041	.149
Construction (SIC division C)1	.278+	.014
Manufacturing (SIC division D) 1	.733+	.429
Transportation (SIC division E) 1	.215	.207
Wholesale trade (SIC division F) 1	.218	.224
Retail trade (SIC division G) 1	.359	.261
Service (SIC division I) 1	.304	.231
Adjusted R2	.246	.120
F-value Degrees of freedom	3.225** (11; 64)	2.101* (11; 78)

Coefficients are standardized beta weights.
** p < .01, * p < .05, + p < .10; two-tailed tests
1The base industry is Agriculture, forestry and fishing (SIC division A)