

COMPLEXITY AND MULTINATIONALS

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ABSTRACT

Research Summary

The multinational corporation (MNC) is a typical example of a complex organization. In this essay, we employ an established body of literature on complexity in organizations to explore and discuss the nature and consequences of complexity for global strategy and MNCs. On that basis, we develop a simple organizing framework for complexity in global strategies emphasizing the source (external and internal complexity) and type (process and structural complexity) of complexity. We use this framework to structure and discuss the six research contributions in this Special Issue. We conclude by suggesting additional avenues of research on the interface between global strategy and complexity.

Managerial Summary

Firms internationalize because they recognize business opportunities abroad and devise strategies to successfully exploit them. At the same time, managers face increasing complexity as MNCs expand internationally and engage in more unknown and dispersed operations. Not only do MNCs face considerable complexity by operating in diverse and uncertain environments, but also by managing and coordinating organizational tasks and activities spanning multiple countries. This essay discusses these challenges and corresponding strategies for MNC managers. It also provides an overview of the six research articles included in this Special Issue about complexity and MNCs.

Keywords: Complexity, multinational corporations, global strategy, coordination.

COMPLEXITY AND MULTINATIONALS

1. INTRODUCTION

The task of running a multinational corporation (MNC) has always been complex. MNC executives have to adapt to various business environments and build coordinated networks of activities that operate effectively across multiple time zones. They must respond quickly when local market conditions change. They need to be resilient to external shocks threatening their cross-border supply chains.

These challenges have become more acute in recent years. International trade has become more difficult since the Global Financial Crisis of 2007-8, with the Covid pandemic, the Russia/Ukraine war, and the cooling of US-China relations all adding to the uncertainty facing MNCs. Technological advances in areas such as digitization, biotech, and renewable energy have increased the pace of innovation in products and services. Concerns about environmental (climate change, pollution, biodiversity, etc.) and social (labor standards, corporate social responsibility, etc.) issues have put additional pressure on MNCs to make their cross-national operations sustainable, accountable, and transparent.

By framing these issues as *complex*, rather than just calling them complicated or difficult, we are building on a well-established body of literature dating back to Simon (1962) with important contributions from Anderson (1999), Levinthal (1997), and others. A complex system is one in which the parts interact in non-simple ways, making precise modeling of future outcomes impossible. Given their scope of operations and the speed of change in the international business environment, MNCs are complex systems of the highest

order. Not only are they complex by virtue of managing and coordinating organizations spanning multiple countries, but they also face considerable complexity in their environments with often inconsistent and incongruent stakeholder and institutional requirements. As such, MNCs can be considered complex when internal and external components are increasingly interdependent.

Much research has been done on both the theory of complex organizations and the real-world activities of MNCs as they grapple with the challenges noted above. And yet much work remains to be done in thinking through the causes and consequences of complexity in the context of MNCs. Hence this Special Issue on Complexity and Multinationals. This introductory essay provides a framing for the collection of articles. We briefly review prior work on complexity and global strategy and develop a simple framework to organize different sources (external and internal complexity) and types (structural and process complexity) of complexity that are particularly applicable to the field of global strategy. We use this framework to structure and discuss how the articles in this Special Issue relate to each other and conclude with a discussion on important avenues for future research.

2. COMPLEXITY

There is a long tradition of research on complexity in management research, dating back to studies in the 1970s examining the dimensions of organizational complexity and the link between complexity and performance (Miller & Conaty, 1980; Beyer & Trice, 1979; Hall, 1977; Blau, 1970). A second wave of research began in the 1990s, building on the theory of complex adaptive systems that suggests complexity is not just a function of the diversity of elements in a system but also the interdependencies between those elements (Axelrod & Cohen, 2000; Anderson, 1999; Levinthal, 1997). This interdependence-based view of

complexity has now become dominant in the organizational literature. It is typically traced back to Simon's seminal article on the architecture of complexity (1962: 468), which describes a complex system as "one made up of a large number of parts that interact in a nonsimple way". Similarly, Thompson (1967) portrays a complex organization as one performing a set of many interdependent tasks, and a central managerial challenge is dealing with the ensuing consequences.

The interdependence-based view has been applied to many different settings and levels of analysis. As summarized in Zhou (2008: 21), there has been research on complexity in individual projects and operational practices, and at the level of organizations and industries (see for example, Ethiraj & Levinthal, 2004; Ichniowski, Shaw, & Prennushi, 1997; Rivkin, 2000; Siggelkow, 2002; Lenox, Rockart, & Lewin, 2006). Interdependence-based complexity complicates all three components of joint decision-making – information processing, communicating, and deciding (Marschak & Radner, 1972; Radner, 1992; Van Zandt, 1999), as well as two key elements of joint effort – incentive alignment and resource ownership (Hart & Moore, 2005; Simon, 1991), thereby increasing the cost of coordination (Zhou, 2008).

3. COMPLEXITY AND GLOBAL STRATEGY

Global strategy is about strategies in an international context. As an academic field, global strategy studies "cross-border activities of economic agents or the strategies and governance of firms engaged in such activity" (Tallman & Pedersen, 2015: 273); or, put differently, the decisions and actions of companies and organizations dealing with business opportunities that are not limited to a strictly domestic context and to pursue them on a sustained basis.

While the majority of firms in most countries remain domestic in their scope and ambitions, in the current considerably globalized economic landscape, the challenge of developing a global strategy exists for a substantial number of firms (Benito, Cuervo-Cazurra, Mudambi, Pedersen & Tallman, 2022). However, global strategies come in many shapes and forms. Notably, while firms see opportunities to profit from international business activities, internationalization also increases the difficulties of carrying out such activities and drives firms to get involved in more unknown and challenging (and therefore, riskier) operations (Békés, Benito, Castellani, & Muraközy, 2021). This increase in complexity, both in terms of opportunity and response, is our focus in this Special Issue.

The complexity of firm internationalization and global strategy is well-captured in the existing literature (Casson & Li, 2022; Leiblein, Reuer, Larsen, & Pedersen, 2022). A well-established view of the internationalization process conceives that firms typically start internationalizing in markets close and relatively familiar to their home market, where present business models can be extended without substantial adaptations. When entering such markets, firms would initially tend to do so through modes of operation that entail low commitment (such as exports), thus offering the flexibility to disengage if necessary (Benito, 2023; Benito & Welch, 1997). This reduces the perceived costs and risks of establishing complex foreign operations. Then, as firms get more experienced and expand their resource base, firms will gradually move to more complex and less familiar contexts and engage in more commitment-intensive modes of operation, such as foreign direct investment (Hashai, 2011; Santangelo & Meyer, 2017). Verbeke, Li and Goerzen (2009) present a complementary view suggesting that firms' decisions regarding international expansion paths are highly firm-specific. Hence, firms will exhibit an international footprint that reflects their specific capabilities. In line with this view, extensive evidence has been provided on the role of firm-specific assets, including innovative capacity and productivity, on the degree of

internationalization across modes and markets (Békés et al., 2021; Tan, Su, Mahoney, & Kor, 2020).

Moving beyond the (admittedly key) issues of which markets to enter and how, global strategies also require making other important decisions, carrying out adequate implementation processes, and developing organizational solutions that fit the chosen strategy. First, the global dimension of corporate strategy can be intertwined with the industry/business/product paths for diversification. However, increasing the scope of a firm by adding further avenues for expansion also complicates navigation. Market and product dimensions, therefore, need to be well aligned – and in line with firms’ resources and capabilities – to achieve the expected gains from pursuing multi-pronged strategies (Collis & Montgomery, 2005).

Second, differences across countries and regions or across geographically local and dispersed operations create “the possibility of global strategy having content distinct from single country strategy” (Ghemawat, 2018: 30). Once the possibility of operating in multiple locations is on the table, firms need to consider where to conduct various tasks and activities, whether or not the activities should be streamlined and integrated across locations, and how to organize them. For example, one of the workhorses of the field, the integration-responsiveness framework (Bartlett & Ghoshal, 1989), and its subsequent developments (see, for example, Ghemawat, 2007), suggests that companies’ internationalization can take the shape of international (home-country based), multi-domestic (host-country oriented), global (standardized across countries), or transnational strategies (balanced), depending on decision-makers analysis of how much (or little) emphasis they should place on adaptation (responsiveness), and aggregation and arbitrage (integration) considerations.

Third, appropriate organizational arrangements and management processes need to be designed, put in place, and over time suitably revised to achieve a reasonable fit between

the chosen strategies and the structures supporting them (Benito, Lunnan, & Tomassen, 2014; Birkinshaw, Crilly, Bouquet, & Lee, 2016; Mees-Buss, Welch, & Westney, 2019; Westney & Zaheer, 2009). Thus, the task of developing appropriate and dynamic organizational responses to idiosyncratic environments is an additional source of firm-level complexity.

Given our focus on complexity, it is helpful to frame the challenge of developing a global strategy using Simon's (1962) definition of complexity. Organizations are complex when internal and external components are increasingly interdependent (see for example, Albert et al., 2015; Porter and Siggelkow, 2008; Simon, 1962). Thus, decisions are "global" in the sense that they involve "cross-border activities of economic agents" (Tallman & Pedersen, 2015: 237), and "strategic" in the sense that they engender interdependencies with other activities and choices within the firm, interdependencies with the choices made by other actors (individuals as well as organizations) in their competitive environments, and/or interdependencies with other choices made by the firm across time (Leiblein, Reuer, & Zenger, 2018), as depicted in the internationalization process mentioned earlier (Leiblein et al., 2022). This also implies that an organization managing several different activities in a wide spread of countries can be regarded as more complex than a solely domestic organization dealing with only a few activities (Békés et al., 2021).

4. STRATEGIES FOR MANAGING COMPLEXITY

How should decision-makers handle complexity? Considering the broader literature on organizations first (before returning to the global strategy arena), an important distinction is between strategies for managing internal and external complexities, such as those related to task complexity and those for managing institutional complexity, respectively (see Table 1 for a summary).

Table 1 about here

Consider task complexity first. The density and indecomposability of interdependent relationships among tasks cause complexity (Simon, 1955, 1962; Thompson, 1967), creating management challenges. For example, task complexity arising from resource sharing in multi-business firms can give rise to both synergistic benefits and coordination costs, thereby either limiting related diversification (Zhou 2011) or influencing the dynamics of such strategy (Zhou, Yang, & Ethiraj, 2023). For business and competitive strategies, task or activity interdependencies contribute to the immutability of market positioning (Porter, 1980, 1985, 1991) in two important ways: “While set of past choices (e.g., those about submarket substitutability or complementarity) provide a barrier against imitation, another set of past choices (e.g., those about products and costs) generate incentives for a tough defense, both deterring entry by firms from a different position” (Ethiraj & Zhou, 2019: 1546).

Treating the firm not only as a subsystem of interdependent activities but also as a component in a larger ecosystem provides additional insights for strategy (Adner & Kapoor, 2010; Kapoor, 2018). For example, in platform ecosystems, providing products and services across multiple platforms (multihoming) can result in interdependencies between the providers’ (complementors’) activities across platform firms or business segments within the same platform firm, thereby causing unintended consequences for platform strategies such as access control and diversification (Chung, Zhou, & Choi, 2023; Chung, Zhou, & Ethiraj, 2022).

Firms use a variety of strategies to deal with task complexity. They can try to standardize and modularize their internal task systems to leave more coordination capacity for scope extension (Zhou 2011). They can vertically integrate their suppliers to align incentives and encourage information sharing when managing complex product varieties (Zhou & Wan, 2017a). They can leverage some complexity as the basis of their competitive advantage, either as an informational barrier to deter imitation (Larsen, Manning, & Pedersen, 2019; Rivkin, 2000), or as a positional barrier to deter entry (Ethiraj and Zhou, 2019). In addition, organization structure provides not only the infrastructure for information processing, communication, and joint decision-making within firms (Galbraith, 1973; Marschak & Radner, 1972; Sah & Stiglitz, 1986; Simon, 1962; Tushman & Nadler, 1978), but also the incentive for cooperation and joint effort (Hart & Moore, 2005; Simon, 1991), thereby facilitating coordination and cooperation (Zhou, 2008). Therefore, firms can manage task complexity through organization structural design choices such as hierarchy, divisionalization, and intermediary coordination units (Williamson, 1975; Zhou, 2013; Zhou & Wan, 2017b).

A different set of challenges arise when managing institutional complexity (Sun et al., 2021). Organizations are ‘open systems’ operating in dynamic environments and rely on external stakeholders to access key resources for survival (Buckley, 1967; Oliver, 1991; Meyer & Rowan, 1977; Scott & Davis 2007). These stakeholders have different and often-inconsistent demands and expectations. Conflicts between stakeholder demands impose trade-offs for the organization. For example, conflicting demands from different stakeholders will impose trade-offs for organizations that are threatened with a product or service liability between allocating resources to mitigate the threat (but bearing the higher costs and lower profits) and ignoring the threat to save costs and maximize short-term profitability (but allowing the organizations’ legitimacy to suffer); see Cho and Zhou (2021).

The conflicting demands imposed by external stakeholders are especially salient for firms engaging in international business, including MNCs, that use their unique organizational form to arbitrage between differential institutional constraints and reallocate resources across national borders, effectively putting “sovereignty at bay” (Kobrin, 2001; Vernon, 1971: 3; Zhou, 2015). Such arbitrage provides the basis of competitive advantage of the MNC vis-à-vis its domestic competitors in both home and host countries (Zhou, 2015). However, institutional arbitrage often involves resource reallocation across borders and hence creates coordination costs (Ghemawat, 2007; Kogut, 1983; Li & Zhou, 2017; Zhou, 2015), which might reduce the net benefit of international operations (Hitt, Hoskisson, & Kim, 1997; Sundaram & Black, 1992). Managing institutional complexity becomes even more challenging when MNCs operate in countries with weak institutions (Zhou, 2008): There will be a greater demand for resource reallocation within firm boundaries since external markets are weaker, and alternative coordination mechanisms such as market discipline and incentive contracts are less enforceable.

The literature suggests a few strategic and structural responses by MNCs in managing institutional complexity. For example, Zhao (2006) proposes that MNCs can divide up R&D tasks and assign affiliates in weak IPR countries to work on innovations that are only valuable after being combined with innovations developed by affiliates in other countries, effectively reducing the independent value of the innovations developed in weak IPR countries and lowering expropriation risks. Zhou (2015) studies how MNCs can use differential assignment of supervisory responsibilities to manage coordination challenges arising from task and institutional complexity. She finds that frontline subsidiaries in countries with weaker institutions are more likely to be supervised by foreign rather than domestic supervisory units, and foreign supervision is even more likely when subsidiaries in

weak-institution countries conduct more interdependent activities with their parents' global operations.

These results connect MNCs' hierarchical structure with institutional imperfections that give rise to the emergence of firms in the first place. Several other studies have also examined how MNCs may use regional or divisional headquarters to manage the complexity of their global operations (Benito, Lunnan, & Tomassen, 2011; Birkinshaw, Braunerhjelm, Holm, & Terjesen, 2006; Lunnan, Benito, & Tomassen, 2011; Rugman & Verbeke, 2004; Valentino, Schmitt, Koch, & Nell, 2019; see also Kunisch, Menz, & Collis, 2020).

5. AN ORGANIZING FRAMEWORK AND CONTRIBUTIONS TO THE SPECIAL ISSUE

This Special Issue comprises six research articles that explore different facets of complexity in MNCs. The articles cover a range of industry and national contexts, using a mixture of theoretical perspectives and empirical methods, including case-based studies and large-N datasets. Building on the research on strategies for managing task and institutional complexity, we propose a simple organizing framework for complexity in global strategy. This framework also illustrates how the articles contributing to this Special Issue relate to one another (see Figure 1).

Clearly, there are many ways of differentiating organizational complexity, such as environment vs. management structure complexity (Contini, 2017) and complexity as coordination vs. inimitability (Rivkin, 2000). However, given our focus on global strategy as strategy in context (Benito et al., 2022), we emphasize dichotomies that together offer a simple yet parsimonious view of the source and type of complexity.

In terms of the source of complexity, we distinguish between internal and external. *Internal complexity* is primarily task-based in that it resides in the structure and design of the organization, and it involves such factors as interdependencies, coordination requirements, and information processing. *External complexity* is contextual, not just economically, but also institution-based, in that it is a function of the various political, legal and cultural environments in which the MNC does business. This distinction is well-established in organization theory (see for example, Duncan 1972; Daft 2001). It is also highly salient in the global business context. For instance, Larsen, Manning, and Pedersen (2013) illustrate how MNCs with high configuration and task complexity undermine their ability to accurately estimate the costs of implementing offshoring activities.

Clearly, external and internal complexities are not independent. In line with Ashby's (1956, 1958) law of requisite variety, an organization's complexity should 'match' the complexity of its operating environment to be effective. This would suggest that firms seek to increase their internal complexity to respond to the range of challenges and opportunities they face in the external environment. In contrast, scholars like Luhmann (1984) emphasize that firms should intentionally strive for "complexity reduction" to respond to external complexity. Consequently, some organizations can be seen as "too complex" or "not complex enough".

The second dimension of our organizing framework separates structural and processual complexity. *Structural complexity* refers to the range, diversity, and interconnection of the elements and activities in the MNC. *Processual complexity*, on the other hand, refers to the behavior and adaptation of the MNC, its value-adding activities, and the external environment over time.

In the domain of global strategy, several dimensions of structural complexity are particularly acute (Casson & Li, 2022). For example, MNCs with a vast network of

subsidiaries spanning several locations and governance modes are structurally more complex than a firm only operating domestically. The multiplexity of connections or ties between the different structural elements in the MNC only intensifies this complexity. Similarly, MNCs may evolve in complex manners that complicate effective integration and coordination. For example, the literature on subsidiary evolution highlights how subsidiaries may evolve along many trajectories that may or may not be aligned with their original mandates (Birkinshaw, 1996; Birkinshaw and Hood, 1998). The integration of mergers and acquisitions is also notoriously characterized as a complex process (Birkinshaw, Bresman, & Håkanson, 2000; Colman & Grøgaard, 2013; Cording, Christmann & King, 2008; see also van Oorschot, Nujen, Solli-Sæther, & Mwesumo, 2023).

Again, a hard dichotomization of structural and processual complexity may be erroneous. For example, the theory of organizational adaptation holds that boundedly rational problem solvers engage in adaptive search in complex environments for satisfactory solutions to organizational structures (Cyert & March, 1963; Simon, 1955). Organizations make incremental changes to their knowledge positions and retain those changes that improve performance (see for example, Gavetti, Levinthal, & Rivkin, 2005; Levinthal, 1997; March & Simon, 1958), and this also applies, of course, to MNCs (Surdu, Greve, & Benito, 2021). In complex environments, this process results in suboptimal outcomes because organizations get stuck on “myopic” peaks or knowledge positions that offer no possibility for further incremental improvement (Levinthal, 1997). Therefore, the challenge is to design organizational structures that minimize the time at such suboptimal positions and facilitate the discovery of the universal optimum. For instance, Asmussen, Larsen and Pedersen (2016) expose how the performance of international reorganization critically depends on the timing of initiating the adaptation process.

Figure 1 about here

For this essay, we distinguish between relevant dimensions of complexity that are particularly applicable to the field of global strategy, and identify four archetypes of complexity that highlight their sources and types (see Figure 1 and Table 2; see also Table 3 for an overview of the contributions to the Special Issue). First, *internal process complexity* concerns aspects such as the evolution of internal structures and the integration of new tasks and activities. For example, Jonsson and Vahlne (2023) explore how MNCs from emerging countries understand and cope with complexity. Through a longitudinal case study of the post-acquisition process between Zhejiang Geely Holding Group and Volvo Car Group, the authors study how firms can learn by internationalizing, enabling them to develop capabilities and compete globally. They frame the complexity of post-acquisition integration as an opportunity to learn at different layers of the organization. Dzikowska, Gammelgaard, and Andersson (2023) study the complexity of the subsidiary's evolution amid value chain fine-slicing. Building on the seminal work by Birkinshaw and Hood (1998), the authors observe that subsidiaries' evolutionary trajectories transcend simple development and identify 1455 functional evolutionary paths among 266 subsidiaries. By embracing this complexity, the authors provide a more granular perspective on the antecedents of subsidiary capability and charter change.

Table 2 about here

External process complexity deals with complexities such as the rate of changes in the political and institutional environment that the MNC operates within. For example, Ma, Cui, Dong, and Liao (2023) explore how firms manage institutional complexity. The authors investigate the interaction between formal institutional pressure from government policy and informal institutional pressure from filial piety on firms' internationalization strategy. Based on extensive data on Chinese foreign direct investment in multiple host countries, the authors argue that firms' internationalization patterns can be explained by the need to build formal and informal institutional legitimacy.

Internal structural complexity relates to complexities such as the interdependencies and coordination requirements between organizational tasks and activities within and across countries. In this respect, van Oorschot et al. (2023) investigate the complexity of post-merger and acquisition (M&A) reorganization. Using a mixed-methods approach to a large acquisition in the shipping industry, the authors emphasize the distinction and challenge of task and human integration and propose a conceptual framework to understand post-M&A integration based on the primary source of synergy (complementary vs. similarity) and location of target and acquirer (separated vs. collocated). In sum, to better understand the complexities of M&As, the authors call for a perspective that embraces how contextual factors influence effective post-integration.

And finally, *external structural complexity* includes the non-simple requirements stemming from the interactions and interdependencies with external actors such as customers, suppliers, competitors, technologies, and the socio-political context. For instance, Hennig, Oehmichen, and Heigermoser (2023) ask how the country context shapes firms' competitive repertoire complexity (diverse and dynamic arrays of competitive actions). Using longitudinal data across several countries, the authors argue that contexts defined by high-quality

competitiveness factors are related to firms' ability to implement a more comprehensive range of global strategic decisions. As such, they frame complexity as an opportunity to broaden firms' competitive repertoire. Vallone, Elia, and Greve (2023) explore how international environmental complexity influences executive appointments. They frame environmental complexity as institutional ambiguity and economic sophistication and find results suggesting that these relate to the demand for executives with generalist and specialist backgrounds. This way, the authors make a compelling argument for how human resource strategies can effectively handle complexity.

Table 3 about here

6. CONCLUDING REMARKS

MNCs are archetypical complex organizations. They are more complex than the equivalent firms that only operate domestically. Being exposed to multiple business environments in different institutional, geographical and cultural contexts, they face exceptional organizational and managerial challenges.

As noted by the studies selected for this Special Issue, complexity inevitably increases when firms engage in more dispersed operations. Dzikowska et al. (2023) point out that this can often be observed in the form of greater internal differentiation through the proliferation of heterogenous subsidiary units. International expansion is often done through cross-border mergers and acquisitions, which, as shown by van Oorschot et al. (2023), imply intricate post-acquisition integration processes. Of course, MNCs develop capabilities to cope

with the added challenges and explore strategies that suitably match their resources and distinct advantages. The studies by Hennig et al. (2023), Jonsson and Vahlne (2023), Ma et al. (2023), and Vallone et al. (2023) examine how MNCs reactively and proactively deal with various aspects of capability and strategy development processes. Well-thought-out global strategies help, but their implementation is rarely perfect, trade-offs are unavoidable, and coordination issues remain ever-present. For MNCs, complexity is thus pervasive.

In this essay, we have drawn on an established body of literature on complexity in organizations and combined it with global strategy research insights to explore and discuss the consequences of complexity for MNCs. On that basis, we presented a simple organizing framework to categorize complexity in global strategies. By emphasizing the source and type of complexity, we have shown how MNCs face different challenges when executing global strategies. This includes challenges like rising coordination costs, higher information processing demands, and rigidity from managing interdependent tasks and activities across borders (see e.g., Benito et al, 2014). At the same time, this perspective allows us to identify novel response strategies to overcome these challenges, including the standardization and modularization of task systems, the disaggregation of value chains across borders, and the use of both hierarchies and decentralized divisions and coordination units. The complexity view on MNCs takes the interdependencies as a relevant unit of analysis. By applying this perspective, we thus gain a complementary view on the antecedents and consequences of central global strategy questions, such as market entry, location choice, and governance modes. As outlined above and summarized in Table 3, this Special Issue encompasses several key aspects of MNCs and complexity. These contributions provide important impetus for furthering our understanding of how MNCs are affected by and respond to different complexities. At the same time, we also stress that important issues remain underexplored (see also Table 2).

First, while referring to costs and challenges posed by complexity, the relationship between complexity and performance remains largely unmapped. Does complexity spur organizational changes aiming at increasing performance, for example, by implementing simpler and/or more flexible ways of organizing global business activities? To what extent and how does additional complexity increase the risk of failure and lead to strategic decisions such as downscaling international activities and/or the restructuring – including exit and divestment – of foreign units? Recent pointers to such issues have been presented by, *inter alia*, Benito (2023), Belderbos, Tong and Wu (2014), and Berry and Kaul (2021), but research remains limited, especially when dealing with current technological, environmental, and societal challenges.

In this respect, the literature on complexity may offer important building blocks to understanding the consequences for MNCs. As earlier established, while higher complexity conventionally leads to rising coordination costs (Galbraith, 1973; Thompson, 1967; Zhou, 2011), it may also serve as an informational barrier to counter competitive imitation (Rivkin, 2001). For example, an MNC may build idiosyncratic business models based on the external complexities of a local market. Such efforts could prevent imitation from competing firms, but also deter opportunities for further international scaling. As such, we encourage future research to explore the performance implications of such trade-offs within the context of global strategy.

Second, while the collection of articles covers a wide range of MNCs and the industry and national contexts in which they operate, many aspects of heterogeneity remain unexplored, especially regarding MNC characteristics. A pertinent question is whether different types of firms – such as in terms of nationality, ownership and/or governance – approach and respond to complexity similarly. For example, state-owned companies are known to be more bureaucratic and typically have “deeper pockets” than private firms and

may therefore be less concerned about complexity, especially in terms of its risk ramifications (Cuervo-Cazurra, Grosman, & Megginson, 2023; Lazzarini & Musacchio, 2018; Wright et al., 2021). They also often have goals beyond profit-seeking (Rygh & Benito, 2022), making their objective function as MNCs more complicated. Conversely, private firms may be more risk-sensitive, but also more agile and focused, and hence more eager and potentially better at reducing complexity to manageable levels. Accordingly, a promising avenue for future research is to explore further the relationship between various MNC characteristics and their means to manage and eventually exploit complexities arising from their global strategies.

Third, dealing with complexity depends on understanding its characteristics and drivers. The better we are at describing and analyzing internal and external environments, the more likely our solutions to handle complexity will be effective. The studies of Hennig et al. (2023) and Vallone et al. (2023) provide exemplary uses of existing frameworks, but our knowledge inventory should be refined and expanded. For example, a key question in global strategy research is how MNCs can successfully adapt to different cultural and institutional environments. Existing literature emphasizes MNC adaptation through either local isomorphism and legitimacy (e.g., Rosenzweig & Singh, 1991; Kostova & Roth, 2002) or how subsidiaries benefit from global strategies that exploit economies of scale across a wide range of countries (e.g., Jensen & Szulanski, 2004; Meyer & Estrin, 2014; Williams et al., 2017). Yet, we also know that in complex environments, organizations are inclined to make incremental changes to their knowledge positions and keep those changes that appear conducive to improvement of performance (Levinthal, 1997; Nelson & Winter, 1982; Rivkin, 2000). Consequently, organizations, like MNCs, are often presented with suboptimal outcomes as they get stuck on knowledge positions that offer negligible possibilities for further incremental improvement (Levinthal, 1997). Future research could therefore draw more explicitly on the literature on adaptation to explore the implications of how MNC can

overcome different complexities by searching locally and globally (Pedersen, Larsen, & Dasí, 2020).

In conclusion, this Special Issue provides a concerted take on complexity as a significant and enduring aspect of global strategy, with a particular focus on MNCs. But, as expected, given the manifold nature of the notion of complexity and its constantly changing manifestations, ample opportunities remain for much-needed research.

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Figure 1. Organizing framework for complexity in global strategy

		Source of complexity	
		<i>Internal</i>	<i>External</i>
Type of complexity	<i>Process</i>	Internal process complexity	External process complexity
	<i>Structural</i>	Internal structural complexity	External structural complexity

Table 1. Challenges and strategic responses of internal and external complexity

Source of complexity	Challenges	Examples of strategic responses
Internal complexity	Rising coordination costs, information processing demands, inertia and rigidity from interdependent tasks and activities across borders	<ul style="list-style-type: none">• Standardize and modularize internal task systems• Implement hierarchies, divisionalization, and intermediary coordination units• Leverage complexity as informational or positional barrier
External complexity	Rising coordination costs, information processing demands, inertia and rigidity from inconsistent and incongruent stakeholder and institutional demands in and across foreign operations	<ul style="list-style-type: none">• Disaggregate organizational tasks to fit local requirements• Differential assignment of international supervisory responsibilities• Designate regional or divisional headquarters

Table 2: Types of complexity in global strategy

Type of complexity	Description	Examples	Research opportunities
Internal process complexity	Complexity due to the evolution of internal MNC structures and the integration of new tasks and activities	Dzikowska, Gammelgaard, and Andersson (2023); Jonsson and Vahlne (2023)	What capabilities matter and how for dealing with complexity? Does complexity spur organizational changes aiming at increasing performance?
External process complexity	Complexity due to aspects such as the rate of changes in the political and institutional environment that the MNC operates within	Ma, Cui, Dong, and Liao (2023), Vallone, Elia, and Greve (2023)	How and why do MNCs differ in their ability to handle the complexity of their environments? How can MNCs build complexity to exploit information asymmetries vis-à-vis external stakeholders?
Internal structural complexity	Complexity due to the interdependencies and coordination requirements between organizational tasks and activities within and across countries	van Oorschot, Nujen, Solli-Sæther, and Mwesiumo (2023)	How can MNCs utilize complexity as a source of competitiveness? How are various types of organizing and governance costs linked to complexity and what can MNCs do to alleviate them?
External structural complexity	Complexity due to the interdependencies with external domestic and foreign actors such as customers, suppliers, competitors, technologies, and the socio-political context	Steinberg, Hennig, Oehmichen, and Heigermoser (2023)	How do various MNC characteristics correspond with external structural complexity? How do MNCs resolve trade-offs across conflicting demands amongst external actors?

Table 3. Summary of articles in this Special Issue

Authors	Research focus	Aspects and type of complexity	Theoretical foundation	Empirical context and type of study
Dzikowska, Gammelgaard, and Andersson	Subsidiary capability and charter change	Complexity as evolution, internal process complexity	Capability evolution	Subsidiaries operating in Poland and Switzerland, longitudinal large-N
Jonsson and Vahlne	Post-acquisition processes, learning after M&A	Complexity as opportunity; internal process complexity	Learning and knowledge-based view	Case study, Chinese acquisition of Swedish company
Ma, Cui, Dong, and Liao	Effect of institutional complexity on internationalization strategy	Complexity as constraint and risk; external process complexity	Institutional theory	Chinese OFDI in multiple host (BRI) countries, regional differences across China, longitudinal large-N
Steinberg, Hennig, Oehmichen, and Heigermoser	Effect of home-country competitiveness on the development of firm advantages	Complexity as opportunity; external structural complexity	National competitiveness framework, competitive dynamics	Multiple home countries, longitudinal large-N
van Oorschot, Nujen, Solli-Sæther, and Mwesummo	Approaches to post-acquisition processes	Complexity as cost; internal structural complexity	Contingency theory	Mixed-methods; focus groups and survey (large-N)
Vallone, Elia, and Greve	Human resource strategies to handle complexity (institutional and economic)	Complexity as cost and risk; external process complexity	TMT perspective, contingency (fit) theory	UK firms' internationalization, multiple host countries, longitudinal large-N

COMPLEXITY AND MULTINATIONALS

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