International knowledge flows in the context of emerging-economy MNEs and increasing global mobility

Xiaohui Liu

School of Business and Economics

Loughborough University

Leicestershire LE11 3TU, UK

Tel: 44(0)1509-223349

Email: X.Liu2@lboro.ac.uk

Axèle Giroud

Manchester Business School

University of Manchester, UK

Email: Axele.Giroud@mbs.ac.uk

International knowledge flows in the context of emerging-economy MNEs and increasing global mobility

Introduction

With fast growth rates and an accelerated pace of economic development, emerging economies are not only attracting a large share of international investment, but their firms have also become major investors in the global marketplace, with established operations in both developed and developing countries. The increasing importance of emerging-economy multinationals (EMNEs) in the world economy offers an exciting research setting and has stimulated much research interest. The rapidly growing literature in this area has examined a variety of issues, including motivations, entry-mode selections, and location choices by EMNEs in comparison with developed-country MNEs (Fleury & Fleury, 2011; Ghauri & Santangelo, 2012; Witt & Lewin; Liu et al., 2005; Luo & Tung, 2007; Matthews, 2006; Wang et al., 2012; Cui & Jiang, 2012; Lu et al., 2014; Ramamurti & Singh, 2009). Numerous studies show that strategic asset-seeking is one of the most important motives for EMNEs, and OFDI has become a commonly recognized strategy through which EMNEs catch up with technological leaders and upgrade their innovation capability in order to compete for future leadership in both domestic and international markets (Awate, Larsen, & Mudambi, 2015; Cui, Meyer & Hu, 2014; Deng, 2009; Lu, Liu & Wang, 2011).

While existing studies have provided new insights into various issues relating to EMNEs and have enhanced our understanding of this phenomenon, we know little about how EMNEs achieve knowledge-seeking motives in the process of internationalization and what strategic assets have been sought by EMNEs. There is indeed a need to understand how EMNEs' unique characteristics and their home-country conditions shape international knowledge-seeking activities and knowledge flows when EMNEs venture abroad. In particular,

there is a lack of empirical evidence on how cross-border knowledge acquisition takes place and whether this contributes to firm performance in the case of EMNEs.

This special issue fills this gap and presents a number of contributions by scholars on knowledge-seeking activities, as well as the means and outcomes of EMNEs' international knowledge flows. The researchers adopt different perspectives and research methodologies. In this introduction, we set the context for the special issue, suggesting that research on the international knowledge flows of EMNEs should incorporate the characteristics of EMNEs and their home-country conditions as well as global mobility, providing an overview of the papers included in the special issue, and highlighting possible directions for future research.

Unique characteristics of EMNEs and international knowledge flows

As EMNEs venture abroad, the world economy becomes more integrated than ever before, and the accelerated globalization has created unique opportunities and challenges for EMNEs. In particular, home-country environments and intensified globalization have served as a training ground for EMNEs regarding how to acquire external knowledge beyond their organizational boundaries. Emerging economies are characterized by fast rates of economic growth, dynamic competitive environments and unique institutional settings, and where the role of governments can be significant in enabling firms to build competitiveness at home and abroad, for instance through policy support or the provision of financial support for state-owned firms investing abroad (Cuervo-Cazurra & Ramamurti, 2014). As a result, emerging economy (EE) firms have benefited from their home-country environments to build unique competitive advantages, such as the ability to deal with price-sensitive customers and challenging distribution environments. They have also developed unique ways to learn and acquire new knowledge before investing overseas.

Many emerging economies, such as BRICS, have experienced fast growth and attracted a substantial amount of inward FDI. EE firms were exposed to foreign competition before venturing abroad, as they faced either direct competition from foreign MNEs operating in their home country or engaged in international competition through increased exporting and importing activities, or they had prior experience in direct business interactions with MNEs at home (Gentile-Lüdecke & Giroud, 2012). Through learning from, and competing with, well-established MNEs in their home country, EE firms have developed unique learning capabilities and accumulated knowledge regarding international operations (Lu et al., 2014). These contextual home-country factors have influenced EMNEs' knowledge-seeking objectives in their internationalization patterns and enabled them to form a solid foundation in managing international knowledge acquisition when venturing abroad. Partly because of these unique characteristics, studies suggest that EMNEs tend to have knowledge-acquiring strategies that are different from their developed-country counterparts; the latter aim to exploit ownership advantages abroad instead of knowledge exploration, although the balance between resource/knowledge-seeking and market-seeking strategies also depends on other factors, such as the level of economic development of the home economy, as demonstrated by Hoskisson et al. (2013).

There are two main characteristics of knowledge-seeking activities associated with EMNEs. First, knowledge-seeking strategies abroad are often linked to the catch-up strategies which characterize many EMNEs. To achieve competitive catch-up, EMNEs tend to use rapid entry modes such as merger and acquisitions (M&As), which represent the quickest way to acquire knowledge assets abroad. Thus, the pace of knowledge flows in EMNEs may be faster than that of MNEs from developed countries. EMNEs also target developed countries that offer new knowledge, different business models and best practices, and use a variety of approaches to manage knowledge transfer at the post-entry stage.

Second, in contrast to traditional MNEs, EMNEs lacking strong firm-specific advantages are less likely to transfer knowledge and expertise to overseas operations. Their own absorptive capacity is still essential in raising their potential to learn and absorb knowledge sourced abroad. As a result, it is likely that the balance between knowledge exploration and exploitation in the process of internationalization differs for EMNEs compared with well-established MNEs. The 'high road' adopted by many acquirers from emerging economies, where target companies are initially granted more autonomy, reflects their lack of international management experience and capabilities (Peng, 2012).

Overall, therefore, home-country advantages, the related unique characteristics of EMNEs and in particular the role of M&As as knowledge-seeking strategies, as well as the potential advantages drawn from previous interaction with established MNEs, represent fertile ground for research on the international knowledge flows of EMNEs. Much remains to be explored regarding the extent to which EMNEs are successful in learning and acquiring knowledge through the M&A entry mode, and the mechanisms, systems and rules adopted to absorb and utilize such knowledge.

Global mobility and EMNEs' knowledge acquisition

The intensified process of globalization has been accompanied by a significant increase in human mobility (Docquier & Rapoport, 2011). The number of international migrants increased from 75 million in 1960 to 214 million in 2010 (United Nations, 2010). This implies that an increasing number of individuals constitute a culturally diverse workforce embedded in multicultural contexts (Brannen & Thomas, 2010). Emerging economies have attracted a large number of returnees who, having moved to foreign countries in the past, are now returning to their home country after several years of education and business experience abroad (Liu et al., 2010). This increasing trend of global mobility may have profound implications for the

international knowledge flows of EMNEs. While recent research in cross-cultural management has highlighted the importance of employees with a multicultural background (Brannen & Thomas, 2010; Fitzsimmons, 2013; Hong, 2010), this line of research has not been extended to the domain of international knowledge flows (Liu et al., 2015). In particular, we know relatively little about how international migrants with a multicultural background affect the international knowledge flows of EMNEs and whether such knowledge flows differ from those of developed-country MNEs in the presence of global mobility (Cui et al., 2015; Gao et al., 2013; Liu et al., 2010). There is a lack of empirical evidence as to whether, and how, highly-skilled migrants such as returnees help enhance knowledge learning and transfer when EMNEs operate in host countries. This omission limits our understanding of the international knowledge flows of EMNEs.

The increasing number of highly-skilled migrants provides a unique opportunity for EMNEs to tap into a diverse workforce and utilize the advantages of returnee migrants. It is also cost-effective for EMNEs to recruit returnees who have already been exposed to different organisational and national cultures and can more readily be embedded in a multicultural context, since there may be less need to provide multicultural training, and the time needed to accumulate international experience is reduced. As a result, there are several advantages associated with international migrants in terms of international knowledge flows.

First, highly-skilled migrants were exposed to internationalization strategies and practices while they studied or worked abroad. Consequently, these migrants may act as a channel for knowledge and institutional diffusion, thus facilitating their firms' knowledge acquisition. In this regard, the extent of international knowledge flows not only depends on organizational structures, but also on the special characteristics of managers and employees, including their international experience and cultural background. Managers with an international background are able to accumulate human and social capital, leading to industry and management

know-how in international markets. Previous experiences, capabilities, knowledge and learning mobilized by highly-skilled migrants may enhance EMNEs' learning capability when operating abroad (Cui et al., 2015; Liu et al., 2010). Highly-skilled migrants are likely to apply and diffuse the prior episodic knowledge and working experience obtained when studying or working in foreign countries to a new institutional context. Therefore, these individuals may act as enablers who facilitate international knowledge transfer between local firms and EMNEs in host countries. Many recent internationalization cases of Chinese and Indian firms were led by returnee top executives. These returnee CEOs represent a new source of international knowledge flows and help leverage EMNEs' competitive advantage accumulated through learning at home. The international experiences of highly-skilled migrants, to some extent, help compensate for the lack of experiential knowledge and overcome the liability of newness and foreignness in achieving EMNEs' knowledge-seeking motives abroad.

Second, it is well documented that acquiring new knowledge across international boundaries is a complex process, especially when knowledge receivers and senders are embedded in different cultural and social contexts in which knowledge is developed and exchanged (Buckley et al., 2005; Harzing et al., 2011). Thus, highly-skilled migrants with a multicultural background help overcome cognitive barriers to knowledge flows and enhance the effectiveness of knowledge acquisition. In particular, highly-skilled migrants' cultural background and language skills help them to engage with local counterparts more effectively than those without such a background. These individuals may act as boundary-spanners and help facilitate knowledge flows (Liu et al., 2015).

Lastly, highly-skilled migrants with language and cultural competencies can facilitate the building and maintaining of trust with local counterparts and act as bridges between local firms and EMNEs (Liu et al., 2015). In particular, understanding local cultures and norms, as well as the institutional environment, enables highly-skilled migrants to draw on local technological

and marketing knowledge more effectively than those without (Cui et al., 2015). Cultural advantages associated with highly-skilled migrants enable them to build a solid foundation for knowledge transfer, thus contributing to effective knowledge learning. Our discussion suggests that incorporating increasing global mobility into the domain of international knowledge flows will help shed new light into the special features of EMNEs' learning and knowledge acquisition.

To summarize, recent research points to the unique characteristics of EMNEs in the context of a more integrated world economy; this raises questions regarding EMNEs' cross-border knowledge flows, and represents an opportunity to advance existing knowledge in this area. It is theoretically and practically important to examine the nature, direction, process and impact of international knowledge flows in the context of EMNEs and increasing human mobility across borders, and enrich our understanding of these key issues.

Papers included in the Special Issue

This special issue focuses on international knowledge flows within the context of EMNEs and global mobility. The papers included address relevant facets on EMNEs' knowledge flows and learning through OFDI, spanning different contexts and different geographical areas where EMNEs operate. All papers were selected as a result of a rigorous review process. With insights from scholars in international business, this special issue helps address some of the research gaps presented above and advance our understanding of the relationship between the unique characteristics of EMNEs, human mobility and cross-border knowledge flows.

Buckley, Munjal, Enderwick and Forsans open the collection with their paper, "Do foreign resources assist or impede internationalisation? Evidence from internationalisation of Indian multinational enterprises", in which they investigate the antecedents of cross-border acquisitions (CBAs) undertaken by EMNEs, based on a sample of Indian firms involved in

acquisitions abroad. In particular, they focus on the impact of different types of resources on CBAs. The findings show that external foreign resources can either impede or assist CBAs, depending on the nature of interactions between external and internal resources. Foreign technological resources positively moderate the effect of a firm's own financial and technological resources on CBAs by Indian MNEs. However, there is a substitution effect between foreign financial resources and a firm's own financial resources. Their findings indicate that foreign technological resources induce financially affluent EMNEs to tap foreign markets by undertaking acquisitions. On the other hand, internal financial resources reduce the importance of external foreign finance to CBAs. This study helps expand the boundary conditions of the resource-based view by combining external and internal resources to examine factors affecting CBAs by EMNEs.

Liu, Gao, Lu and Lioliou, in "Does learning at home and from abroad boost the foreign subsidiary performance of emerging-economy multinational enterprises?", focus on the extent to which domestic learning and host-market learning affect the subsidiary performance of Chinese MNEs. They find that domestic learning through collaboration with foreign firms at home and host-market learning positively contributes to subsidiary performance. Interestingly, there are synergetic effects between domestic learning and host-market learning, and these two types of learning jointly shape subsidiary performance. Their research captures the unique characteristics of EMNEs that have actively engaged in various forms of collaboration with foreign firms in their home country. Collaborating with foreign firms at home has served as a learning laboratory for the international operations of EMNEs. Specifically, their attempts to differentiate the impact of host-market learning from domestic learning, and to examine the synergetic effects of the two types of learning, are insightful and help shed light on the interrelationship between different dimensions of learning and subsidiary performance. Their paper also makes an empirical contribution by adopting a more fine-grained analysis of

interaction effects, and revealing additional insights into the moderating effect of the two types of learning.

Nair, Demirbag and Mellahi, in their paper "Reverse knowledge transfer in emerging market multinationals: the Indian context", investigate the relationship between knowledge-seeking strategies and overseas mergers and acquisitions by Indian multinationals. The authors consider a range of factors affecting knowledge flows between subsidiaries and headquarters, including perceived subsidiary capability, parent absorptive capacity and the relevance of target knowledge, using firm-level data from a survey of Indian multinationals with overseas acquisitions. The findings show that perceived subsidiary capability, knowledge relevance and absorptive capacity contribute to reverse knowledge transfer. In addition to the direct impact of these factors, the authors reveal the moderating role of knowledge relevance and the mediating effect of absorptive capacity. Their research demonstrates that EMNEs are committed to continuous learning and are more selective in the transfer of management and marketing know-how. Their study sheds light on the importance of knowledge relevance and absorptive capacity in an emerging-market context.

In "Country-specific advantage, firm-specific advantage and multinationality - sources of competitive advantage in emerging markets: Evidence from the electronics industry in China", Bhaumik, Driffield and Zhou examine the relative importance of country-specific advantages (CSAs) and traditional firm-specific advantages (FSAs) for productivity growth in firms operating in emerging-market economies by adopting a stochastic frontier approach. Using firm-level data, they compare the contribution of scale economies to the productivity growth of Chinese firms, both MNEs and non-MNEs, with those of western MNEs in the electronics industry. The findings show that developed-country MNEs operating in emerging-market economies are not as good at leveraging available CSAs as their EMNE competitors. This is one of the first papers with hard evidence to facilitate an informed

discussion about differences in sources of advantage of developed-country MNEs and EMNEs. Its findings suggest that the main source of competitiveness of EMNEs remains their ability to generate growth of scale efficiencies, even subsequent to internationalisation. Although developed-country MNEs are unable to match the ability of EMNEs to benefit from scale efficiencies, their technological advantage keeps them competitive *vis-à-vis* these emerging-market competitors.

Zheng, Wei, Zhang and Yang's paper, "In search of strategic assets through cross-border merger and acquisitions: Evidence from Chinese multinational enterprises in developed economies" is based on multiple cases of cross-border merger and acquisitions (CBMAs) by Chinese MNEs. They identify the nature of strategic assets sought by Chinese MNEs and investigate how the post-CBMA integration approach adopted by Chinese MNEs enables them to achieve strategic asset-seeking. Their findings reveal that Chinese MNEs possessing firm-specific assets tend to seek complementary strategic assets in similar domains. This partnering approach facilitates Chinese MNEs in securing strategic assets through maintaining the autonomy of the target firm, retaining talent and creating synergy. These findings advance our understanding of the nature of strategic asset-seeking among Chinese MNEs and how Chinese acquirers secure these strategic assets in post-CBMAs within developed economies. The research also provides new insights into the challenges facing Chinese MNEs in achieving their strategic asset-seeking motives through CBMAs.

Fan, Cui, Li and Zhu, in "Localized learning by emerging multinational enterprises in developed host countries: A fuzzy-set analysis of Chinese foreign direct investment in Australia", examine how underlying process-position-path configurations influence the localized learning of EMNEs in developed host countries, using fuzzy-set qualitative comparative analysis (fsQCA). Based on a dynamic capability framework, they focus on factors affecting EMNEs' local learning, using primary and secondary data of eleven Chinese

foreign direct investments in Australia, collected at both headquarters and subsidiary levels. They find that localized learning is motivated by a nexus of process-position-path factors, namely, market orientation, business modularization, network resources, business specificity, institutional complexity, and market competition. Their findings indicate that although EMNEs may not possess strong dynamic capabilities to sustain global competitiveness at the current stage of their development, the conditions forming their dynamic capabilities will motivate them to engage in learning activities that will help them build global competitiveness in the long term. The paper utilizes an increasingly popular research method, the fsQCA, to unpack what lies behind localized learning by EMNEs.

The paper by Jindra, Hassan and Cantner, "What does location choice reveal about knowledge-seeking strategies of emerging-market multinationals in the EU?", examines the link between location choice and knowledge-seeking strategies by EMNEs in the EU by applying discrete-choice models based on a sample of 4,555 emerging-market firms in 93 sub-national regions of the EU. They empirically examine the extent to which EMNEs' location choice is affected by agglomeration economies and knowledge externalities, given that the latter are recognised as potential sources of learning and technological catch-up. The findings confirm their predication and reveal differences in the valuation of various sub-national location factors as well as differences in the substitution pattern between alternative regions for emerging-market firms. Their study contributes to the existing literature by providing novel evidence that EMNEs differ in their evaluation of selected location factors from developed-country MNEs and that there is also some degree of heterogeneity within the group of EMNEs. Compared to developed-country firms, emerging-market firms pay more attention to diversity externalities, urbanization economies and knowledge spillovers from localized R&D and human resources in science and technology occupations when choosing locations in EU countries.

Chen, Tan and Jean, in "Foreign knowledge acquisition through inter-firm collaboration and recruitment: Implications for domestic growth of emerging-market firms", examine two mechanisms through which emerging-market firms acquire foreign technological and managerial knowledge: namely, collaborating with foreign firms and recruiting returnees in China. The authors investigate the extent to which the two learning mechanisms boost firm performance in the local market, based on a sample of firms in Zhongguancun Science Park that made initial public offerings (IPOs) domestically. The findings indicate that privatized state-owned firms benefit more from foreign collaboration, while entrepreneurial firms gain more from learning by recruiting returnees. In addition, there is a substitution effect between the two learning mechanisms. As such, the positive impact of foreign collaboration was reduced by the presence of returnees in the top management team. The paper advances the existing literature on international knowledge flows by delineating the fundamental differences in the two major knowledge-transfer mechanisms. The findings show that the extent to which a local firm can effectively acquire foreign knowledge through a particular channel is contingent on its institutional heritage. The study also highlights the importance of human mobility, such as returnees, on knowledge flows between developed countries and emerging economies.

Conclusion

EMNEs are taking centre stage in international business and will continue to change the competitive landscape of the world economy. This introduction to the Special Issue highlights the special features of international knowledge flows of EMNEs. Studying this topic enriches our understanding of crucial issues related to EMNEs' learning and knowledge acquisition. It also helps broaden research on EMNEs from the motivation to venture abroad to the outcomes of OFDI in term of international knowledge flows. Collectively, the articles included in the special issue complement our existing knowledge on EMNEs by providing new insights into

the relationship between the unique characteristics of these firms, the role of home- and host-country factors, and international knowledge flows.

This special issue not only serves as a platform for enhancing our understanding of the knowledge flows of EMNEs, but also points towards a number of directions for future research in this area. First, while several papers have examined whether and how M&As can achieve the knowledge-seeking motive of EMNEs, there is little evidence on whether M&As or other modes of foreign entry, such as joint ventures or greenfield FDI, might lead to differing levels and impacts of knowledge learning. In addition, there is almost no research on the pace of knowledge flows within EMNEs. This aspect deserves special attention, given the nature of accelerated internationalization by EMNEs. Second, a number of papers have explored how local learning or knowledge acquisition affects subsidiary performance. However, how knowledge flows affect EMNEs' innovation capability is under-researched. This is a significant omission with regard to the outcomes of international knowledge flows of EMNEs, thus representing an exciting opportunity for future research. Examining whether learning abroad contributes to innovation capability differently from learning from foreign firms at home will shed new light on the importance and effectiveness of international knowledge flows within EMNEs. Finally, although a few papers have examined the role of human mobility in cross-border knowledge flows by EMNEs, in-depth analysis of this phenomenon in the context of global mobility will advance our understanding of how global integration through human mobility changes the nature, pattern and direction of the knowledge flows of EMNEs.

References

Awate, S., Larsen, M. M., & Mudambi, R. (2015). Accessing vs sourcing knowledge: A comparative study of R&D internationalization between emerging and advanced economy firms. *Journal of International Business Studies*, 46(1): 63-86.

- Brannen, M.Y.& Thomas, D. (2010). Bicultural individuals in organisations. *International Journal of Cross Cultural Management*, 10, 5-16.
- Buckley, P., Clegg, J. & Tan, H. (2006). Cultural awareness in knowledge transfer to China-The role of *guanxi* and *mianzi*. *Journal of World Business*, 41, 275-288.
- Cuervo-Cazurra, A. & Ramamurti, R. (2014). *Understanding multinationals from emerging markets*. Cambridge: Cambridge University Press.
- Cui, L., Meyer, K & Hu, H.W. (2014). What drives firms' intent to seek strategic assets by foreign direct investment? A study of emerging-economy firms, *Journal of World Business*, 49, 488–501.
- Cui, L., Li, Y., Meyer, K., & Li, Z.J. (2015). Leadership Experience Meets Ownership Structure: Returnee Managers and Internationalization of Emerging-economy Firms.

 *Management International Review, 55(3): 355-387
- Deng, P. (2009). Why do Chinese firms tend to acquire strategic assets in international expansion? *Journal of World Business*, 44:74-84.
- Docquier, F., & Rapoport, H. (2011). *Globalization, brain drain and development*. IZA Discussion Paper No. 5590.
- Fitzsimmons, S. R. (2013). Multicultural employees: A framework for understanding how they contribute to organizations. *Academy of Management Review*, 38(4), 525-549.
- Fleury, A., & Fleury, M.T. (2011). *Brazilian Multinationals Competences for Internationalization*. Cambridge, UK: Cambridge University Press.
- Gao, L., Liu, X., & Zou, H. (2013). The role of human mobility in promoting Chinese outward FDI: A neglected factor? *International Business Review*, 22(2): 437-449.
- Gentile-Lüdecke, S., & Giroud, A. (2012). Knowledge transfer from TNCs and upgrading of domestic firms: the Polish automotive sector. *World Development*, 40(4), 796–807.

- Ghauri, P., & Santangelo, G. (2012). Multinationals and the changing rules of competition,

 Management International Review, 52(2): 145-154.
- Harzing, A. W., & Feely, A. J. (2008). The language barrier and its implications for HQ-subsidiary relationships. *Cross Cultural Management: An International Journal*, 15, 49-61.
- Hong, H. J. (2010). Bicultural competence and its impact on team effectiveness. *International Journal of Cross Cultural Management*, 10, 93-120.
- Hoskisson, R. E., Wright, M., Filatotchev I., & Peng, M.W. (2013). Emerging multinationals from mid-range economies: the influence of institutions and factor markets. *Journal of Management Studies*, 50(7), 1295-1321.
- Liu, X., Lu, J., Filatotchev, I., Buck, T., & Wright, M. (2010). Returnee entrepreneurs, knowledge spillovers and innovation in high-tech firms in emerging economies.
 Journal of International Business Studies, 41(7), 1183-1197.
- Liu, X., Gao, L., Lu, J., & Wei, Y. (2015). The role of highly-skilled migrants in the process of inter-firm knowledge transfer across borders. *Journal of World Business*, 50(1), pp.56-68
- Lu, J., Liu, X. & Wang, H. (2011). Motives for Chinese outward FDI: Firm resources, industry dynamics and government policies. *Management and Organization Review*, 7(2): 223–248.
- Lu, J., Liu, X., Filatotchev, I. & Wright, M. (2014). The impact of domestic diversification and top management teams on the international diversification of Chinese firms.

 International Business Review, 23(2): 455-467.
- Luo, Y. & Tung, R. (2007). International expansion of emerging market enterprises: A springboard perspective, *Journal of International Business Studies*, 38 (4), 481-498.

- Mathews, J. (2006). Dragon multinationals: new players in 21st century globalization. *Asia Pacific Journal of Management*, 23(1): 5–27.
- Peng, M. W. (2012). The global strategy of emerging multinationals from China. *Global Strategy Journal*, 2, 97–107.
- Ramamurti, R. & Singh, J.V. (2009). *Emerging Multinationals in Emerging Markets*.

 Cambridge: Cambridge University Press.
- United Nations (2010). *International migration report 2009: A global assessment*. Geneva: United Nations, Department of Economic and Social Affairs.
- Witt, M. A. & Lewin, A. Y. (2007). Outward foreign direct investment as escape response to home-country institutional constraints. *Journal of International Business Studies*, 38(4), 579–594.