

Introduction to the Special Issue: Edith Penrose and The Theory of the Growth of the Firm – The Next Sixty Years

By

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Why this Special Issue?

Anyone who ever met Edith Penrose was immediately captivated by her larger than life personality. She was not only engaging and intellectually curious, as well as a fearless debater, but also a charming conversationalist with a remarkably broad set of interests, a great sense of humor and the most expressive and impish eyes. To know Edith was to fall under her spell and admire this brilliant woman's capacity for innovative thinking and her ever-questioning mind. She brought these qualities to all her work whether it concerned food distribution in wartime Britain, the plight of refugees in post-war Europe, the workings of the international patent system, the economics of the theory of the firm, or the domestic impact of large international oil multinational corporations. She was also a gifted teacher and a mentor to countless students and researchers across several countries in Europe, the Middle East, North America, Australia and Africa. Finally, she was also a wonderful colleague, a steadfast friend, and a wonderful wife, mother and grandmother to her large family.

Both co-editors of this volume have had the privilege and pleasure of knowing and working with Edith during different times in our professional lives. We interacted with her as university colleagues and at a multitude of academic conferences. She was a participant in John Dunning's 1972 Bellagio Conference (the only woman there), when an impressive array of economists from around the world gathered to explore how economic theory should deal with this relatively poorly understood phenomenon, the multinational corporation. In 1977, Edith accepted an appointment as a professor and Associate Dean for Research at INSEAD, where she worked closely with one of us, and contributed to EIBA's (the European International Business Academy) annual meeting in Fontainebleau, France, in 1982. Later in the 1990's she served as a Senior Fellow at Bradford University Management Centre, where she collaborated with the other co-editor.

Undoubtedly, her most famous output is her book on *The Theory of the Growth of the Firm* (TGF), first published by John Wiley & Sons in 1959, and reprinted several times of which the 4th edition, together with an extensive introduction by Christos Pitelis, was published by Oxford University Press in 2009. On the occasion of the 60th anniversary of the book's publication, a number of us associated with the Academy of International Business thought it would be appropriate, and of interest to our members, to organize a panel discussion on the impact of TGF on the fields of strategy and international management, with a particular focus on Edith's legacy and directions for future work.¹ The session, held on June 28, 2018 in Minneapolis, was successful and raised a number of interesting points regarding the impact and current relevance of Edith's work, and to some presenters the relative late blossoming, of her impact on the field. It was there that the idea of a broader and deeper Special Issue arose as a vehicle for a more profound treatment of Edith's work and its implications for future scholars in the strategy and international business fields.

Jeff Reuer, one of the Editors-in-Chief of *Strategic Management Review*, approached us at the end of the panel and asked whether we would consider doing this. Both of us felt it was a splendid idea and contacted a number of individuals, both presenters at the AIB session as well as others in related fields, and asked them to contribute to the volume. Those who agreed to do so were asked to submit an outline of their proposed contribution by the Spring of 2019. These were reviewed by both of us and detailed comments and suggestions were sent to the prospective authors who then agreed or not to undertake the writing of their respective articles. Nine sets of authors accepted the challenge on these bases and were asked to submit full papers by early October. Eight papers were received by the deadline and these were sent to external reviewers shortly thereafter. These reviews came in at the end of the year and were sent to the authors, together with additional comments by the co-editors, with a request to revise and resubmit their papers. The revised papers were returned to us during the first quarter of the year. Table 1 below presents brief biographies of all contributors to the Special

¹ The panel session can be viewed at <https://aib.msu.edu/events/2018/Videos/ShowSessionVideo.asp?VideoID=1109>

Issue, whereas Table 2 lists the reviewers who generously gave of their time to significantly improve the quality of all papers.

As the papers in this issue show, Edith Penrose's work addresses all of the "fundamental issues of strategy" originally identified by Rumelt, Schendel and Teece (1994). How do firms behave? Why are firms different? What are the functions of headquarters? What determines success or failure in international competition? And in many cases, as our authors argue, her answers have not been bettered in the next half century.

We start this introduction by providing first a brief set of biographical notes on Edith's rich life and her major academic contributions. These range widely across a number of important issues in the fields of economic institutions, theory of the firm, international trade and investment, economic development, and managerial economics. We do not intend to review all of these contributions here, but rather present a set of major influences and events in Edith's life that provide some context to her active academic contributions. Following these notes, we summarize the gist of the papers in this volume and link them to the over-arching theme of Edith's economic approach to issues and her empirical perspective on critical processes inside firms and governments. Finally, we end with a discussion of some key lessons that we and the authors of these papers thought would well serve future scholars working in the areas of strategic management and international business as they strive to explore new ground and unanswered questions.

Edith Penrose, a brief biographic summary²

Edith was born in a most auspicious time and location: Sunset Boulevard in Los Angeles at the beginning of the First World War on 29 November 1914. As described by Angela Penrose in her contribution to this volume, the family soon moved north to San Luis Obispo where her father, George Tilton, worked as an engineer for California's Department of Public Works. He was responsible for charting the course of CA 1, the famous state highway that borders the Pacific Ocean from San Francisco to Los Angeles, work that took them to extraordinary locations and

² Most of the information in this section comes from two sources: a set of interviews with Edith by José de la Torre for a presentation of the Eminent Scholar Award at the 1994 Annual Meeting of the AIB in Boston; and Angela Penrose's magnificent biography of Edith, *No Ordinary Woman: The Life of Edith Penrose* (2018).

an exciting life for young Edith among a close-knit community in primeval forests and beautiful landscapes. George was a strong influence on Edith and very supportive of her, encouraging her and her two brothers to excel and to cherish their independence. From him Edith inherited a strong commitment to observation and rationality.

The next major influence on Edith was that of her first husband, David Denhardt, a fellow student at Berkeley three years her senior, whom she secretly married while at UCB.³ David was a law student who upon graduation in 1936 became a public servant and was killed under suspicious conditions during his campaign for district attorney of Calusa County. Edith was three months pregnant at the time and was forced to move with her parents in Sacramento where her first son, David Tilton Denhardt, was born in February 1939. David's commitment to public service and to the vulnerable also imprinted Edith's view of the world.

A third major influence on Edith was her teacher, boss and, eventually, second husband, Ernest Francis Penrose, affectionately known as Pen, who was 20 years older than Edith. He was a well-respected economist and WW1 veteran, who had done significant work on Japan's economic history when offered a visiting position at Berkeley. Edith took a course from Pen and then served as his student assistant until after her graduation. Pen moved to Geneva in 1939 to work at the International Labor Office (ILO) under John Winant, a trusted confidant of President Franklyn D. Roosevelt and a principal architect of the New Deal's Social Security Administration. An important US diplomat during the war years, Winant would also have a significant impact on Edith's professional growth and development. Learning of Edith's predicament after the death of her husband, Pen invited her to come to Geneva and work with him on food security projects at the ILO. Edith, a young widow in depression-era California, had few local job prospects. She accepted gladly and embarked on a long and perilous journey to Switzerland in June 1939, leaving young David in the care of her parents on the eve of World War 2.

During their time in Switzerland, Edith worked on several studies of food production and distribution in wartime economies, and was also active in helping Jewish families arriving in the country. On a trip to Paris in April 1940, Edith and Pen declared their love for each other. Pen's first wife, Elizabeth, and their three children had remained in California unable to travel to

³ As an undergraduate student, Edith was not allowed to be married at UC Berkeley in those days.

Europe. Following the German invasion of France in May 1940, the ILO's offices were moved to Montreal, Canada, and housed on the campus of McGill University. Fearing a possible German attack in Geneva, Edith and Pen traveled through Vichy France in rickety buses to Spain and then on to Lisbon, where they awaited passage to New York. Their voyage on a Greek freighter luckily defied U-boat activities in the North Atlantic.

In Montreal, Edith and Pen set up home in September 1940 with young David, who had rejoined his mother. Edith began studies of Spanish, French and German, as well as economic and social theory, allocating one day of the week for each topic. A year later, Winant was named US Ambassador to the Court of St. James, replacing Joseph Kennedy. In July 1941, Pen was asked to come to London to work at the US Embassy on "international, social and economic problems" and Edith was also offered a position there.

Soon after her arrival in London, Edith published her first major work on food control in the UK (1942) and became immersed in a whirlwind of discussions on economic and social issues pertaining to the war effort, as well as in planning for the peace to come. She met and interacted with the likes of J.M. Keynes, Lionel Robbins, Austin Robinson, John Jewkes, Albert Baster, Joseph Schumpeter, James Meade, Joan Robinson, Hubert Henderson and Friedrich Hayek, as well as important politicians of the British Labour Party such as Ernest Bevin, Harold Laski and Dennis Brogan. For a young woman of barely 27 years of age, this was a crammed educational experience that gave her enormous confidence and poise. She participated in the preparation work for the Hot Springs Conference (1943), a dress rehearsal for Bretton Woods. She subsequently met Eleanor Roosevelt, who would also have a great influence on Edith's developing world-view, and assisted her in the UN's work on refugee issues and the preparatory work for the UN Declaration of Human Rights adopted in 1948.

During these years Edith experiences a number of personal events, some happy, others tragic, of great importance. Following Pen's divorce from Elizabeth, finalized in September 1944, Pen and Edith married in London on 31 October 1944. On 25 January 1945, Edith's brother Jack was killed while flying a bombing mission in northern Italy. Later that year, Edith and Pen's first son, Trevan, was born in London in October, after which Edith returned to work full-time at the US Embassy. When Winant was named US representative to the UN's Economic

and Social Council by President Truman, both Pen and Edith followed him to New York. There she worked closely with Eleanor Roosevelt on refugee problems, world nutrition and human rights, helping in the creation of UNICEF. Their second son, Perran, was born in July 1947 while Pen served as a member of the Institute for Advanced Study at Princeton.

The family then moved to Baltimore where Pen accepted a position as professor of Geography and International Relations at Johns Hopkins University effective September 1947. Taking advantage of her presence at Hopkins, Edith enrolled in the MA program at the University and began work with the person who would also be a major influence on her life, Fritz Machlup. Tragedy struck again in November when the Penroses learned of Winant's suicide, and devastatingly so in December of that year when Trevan died after a short illness.

In spite of her grief, Edith completed her masters' thesis on "Patents in Economic Doctrine" in May 1948, and immediately continued on to her doctorate. Her fourth son, Trevear, was born in October 1948, which brought much needed joy to the family. Working through these events, including the sudden death of her father in July 1950, Edith succeeded in her PhD thesis defense on "The Economics of the International Patent System" in October 1950, later published in 1951. She then took up a position as Research Associate and, later, Lecturer in the department of Political Economy at Hopkins.

Shortly thereafter Edith joined her mentor Prof. Machlup and others at Hopkins on a project to study the growth of firms. Edith described how she became involved in the project:

"I had no special interest in firms, but a Professor... had a large grant to do a study of the growth of firms... I didn't mind what I specialized in, but had to earn some money and the growth of firms seemed interesting. ...[I]t took me nine months of reading and specially thinking before I realized that the traditional theory of the firm, in which I, like other economists had been trained, was not relevant to the problem of the growth of firms.⁴

Here, Edith reveals a very practical aspect of her scholarship and a distinguishing characteristic of her work, that is, treading where others had not gone before, where she felt that the extant theory was either inadequate or insufficient.

⁴ Parkin & King, 1992; as reported in Angela Penrose (2018: pp. 175-176).

The years at Hopkins were marred by yet another tragedy, the death of her younger brother Harvey in an air crash in Alaska in January of 1952, and by the Owen Lattimore affair. Lattimore, a valued colleague of the Penroses at Hopkins, was accused of being a communist sympathizer during the McCarthy hearings and hounded by right wing zealots. Edith volunteered to be secretary of his defense fund and became heavily involved in the fight against the witch-hunt. Upset at these attacks and disillusioned with the politics in the United States, Pen accepted a visiting position in Australia and departed in January 1955. Edith and the boys joined him in April. This provided Edith with an opportunity to extend her research to Australian firms, in particular to GM Holden, General Motors' local subsidiary, which triggered her interest in the economic implications of foreign direct investment and the operations of multinational companies. Once again, Edith was motivated to tackle those economic issues that derived from her observation of real-world phenomena.

Returning to Hopkins in 1956, the Penroses found the environment even more poisonous than the previous year. Pen was incensed at the virulent attacks on Canadian diplomat Herbert Norman and Japanese economist Shigeto Tsuru, both former colleagues and friends. As a result, Pen and Edith sought and obtained a visiting appointment to the University of Baghdad and departed for Iraq in September 1957. Having finished her manuscript for TGF, Edith was astonished to find how little work had been done on the economics of the oil industry "in spite of the fact [it] was a very large and vitally important industry, accounting for a large proportion of international trade and run by some of the largest companies in the world. I happily took advantage of this splendid opportunity for empirical research." Their stay in Baghdad fueled a life-long interest in the Middle East for Edith and Pen, who continued traveling frequently to the area for the next 20 years and led to several publications dealing with the economics of development and the role of foreign companies in such process (e.g., 1960b & 1968a).

In May 1959, Edith decided she needed to find a permanent position and applied for a Lectureship at Cambridge University. Fritz Machlup wrote a strong recommendation letter for her to accompany a file that included the proofs for TGF, which was to be published later in the year. Edith placed all their belongings in an old Hillman sedan they owned in Baghdad and

drove to London.⁵ When the position was not offered her, she returned to Hopkins in the fall of 1959, and later succeeded in obtaining a position at the School of Oriental and African Studies (SOAS) at the University of London beginning in the Fall of 1960.

With the publication of TGF, Edith met with both praise and criticism. She had previously written a strong rejection of any biological or natural selection explanation for the growth of firms:

“We have no reason whatsoever for thinking that the growth pattern of a biological organism is willed by the organism itself. On the one hand, we have every reason for thinking that the growth of a firm is willed by those who make the decisions of the firm and are themselves part of the firm, and the proof of this lies in the fact that no one can describe the development of any given firm or explain how it came to be the size it is except in terms of decisions taken by individual men” (1952, p.808).

Herein she emphasized the main findings of her study on the Hercules Powder Co.⁶ concerning the critical role management played in decisions that governed the growth and diversification of firms. On the other hand, she seems to have readily accepted Machlup’s advice not to include any formal exposition of her theory in the book. He wrote to her in Australia:

“I am convinced that your algebra does nothing for the presentation of your theory. At best it gives the appearance of a plaything. It reduces the appeal that it would have to most earnest readers... All you can say can be said in words and it is no advantage whatsoever to use fractions and other mathematical signs instead” (Letter from Machlup, 9 November 1955, quoted in A. Penrose, 2018, p. 177).

As others have noted, Machlup was a product of the Vienna School of economics that valued process analysis over equilibrium solutions. Machlup’s belief that complex mathematical formulations were superfluous to Edith’s main objective may have cost her some measure of support among the economics profession.

Edith and Pen settled nicely near London upon their return to England and, for the first time in years, had their two younger boys nearby. Her years at SOAS were quite productive and

⁵ Since Pen had never driven before, Edith did all the driving during a trip that crossed over a dozen countries and took 21 days to complete.

⁶ Published separately in 1960 and not included in the TGF book.

successful in furthering her research interests regarding the Middle East, less developed countries, and the role of foreign direct investment in development (e.g., 1968b & 1971). There she launched the *Journal of Development Studies* in 1964 and became active in an array of external boards and commissions such as the Social Science Research Council, the Commonwealth Development Corporation, the Institute of Development Studies, the Sainsbury Commission examining the UK pharmaceutical industry, the Medicines Commission and the Monopolies Commission. In 1971-72 the Penroses accepted a visiting appointment in Tanzania which expanded their interests to the African continent and economic development issues.

In 1975 Edith attended a conference on multinational companies at INSEAD which led a year later to an offer to join the faculty as professor and Associate Dean for Research, a position she took up in the Fall of 1977. Pen had always loved France and was delighted to renew old acquaintances while Edith settled into the diverse world of a major international business school. There she participated in a major executive program on *Managing the Multinational Enterprise*, continued to travel extensively to the Middle East and Africa, and found an eager group of mature students who relished her experience and intellectual rigor. She also had time to reflect on the implications that globalization and other recent socio-economic forces implied for both her TGF arguments and her views on economic development,⁷ and to discuss these with her new colleagues. The occasion for formalizing some of these thoughts came when she accepted an invitation from Uppsala University to deliver an address commemorating the 25th anniversary of both the founding of the University's Business School and the publication of TGF as well as receiving an honorary doctorate (1984). In the preceding year, Edith had mourned the passing of Fritz Machlup in January 1983 and suffered a profound personal loss when Pen died in Fontainebleau in March 1984.

At that point, Edith decided to retire from INSEAD at the end of the academic year and return to live in Cambridge, with her son Perran and his family. From this new base, she continued to lecture and write and enjoy the growing popularity of TGF. As she had said, with tongue firmly planted in her cheek, in her Uppsala lecture,

⁷ See in particular her essay on "Economic Liberalization" (1992)

“Students of industrial economics were regarded as in a border area of ‘applied’ economics. Sociologists, institutionalists, behavioral psychologists, business analysts (and especially business school teachers), though undoubtedly commendable fellows, were clearly of lesser scientific standing. They had no ‘hard’ integrated theoretical foundation for their alleged disciplines... Few economists thought it necessary to enquire what happened inside the firm—indeed the firm had no ‘insides,’ so to speak. I do not say they were wrong, only that being theoretical economists they saw reality differently from other people. The question I wanted to answer was whether there was something inherent in the very nature of any firm that necessarily limited its rate of growth. Clearly, a definition of a firm that did have ‘insides’ was required (1984).

Recognition and honors flowed rapidly during the “evening of her life” years. Business scholars credited her efforts to analyze the “insides” of firms to the subsequent launch of the increasingly popular “resource-based view” of competitive strategy. In particular, they referred to her TGF insight,

“Whether or not we treat the resources of the firm or its ‘environment’ as the more important factor explaining growth depends on the question we ask: if we want to explain why different firms see the environment differently, why some grow and some do not, or, to put it differently, why the environment is different for every firm, we just take the ‘resources approach’; if we want to explain why a particular firm, or group of firms, with specified resources grows in the way it does we must examine the opportunities for the use of those resources” (1959, p. 217).

Edith became an Honorary Senior Fellow at the University of Bradford in 1989 and was later awarded a doctorate honoris causa by the University of Bradford in 1994. She traveled widely in Europe, Russia and China, and was heavily involved in arbitration cases such as the US-Iran Claims Tribunal. The Helsinki School of Economics granted her an honorary doctorate in 1991, and the Academy of International Business named Edith as recipient of its 1994 Eminent Scholar Award, only the second time in its history (Charles Kindleberger had been the first) that the award was given. On the occasion of her 80th birthday, the entire family—three boys and their spouses, grandchildren and spouses, and great-grandchildren—spent a memorable

holiday in Tuscany, and in May 1996 she cruised the Alaskan fiords with her son David. A few months later Edith died peacefully in her sleep on 11 October 1996.

A summary of the papers in this volume

The first and most intimate paper in this Special Issue is by Angela Penrose, Edith's daughter-in-law and biographer: "Edith Penrose's approach to economic problems as reflected in the Theory of the Growth of the Firm: A humanistic perspective." She contends that Edith's approach to economic problems is infused with a deep social understanding of human actions where she aims to break open the "black box" derived from the classic presumption of an "economic man/woman." Furthermore, it is this understanding of human nature and reasoning that underlies her innovative theory of the firm. Some have called this way of juxtaposing personal and impersonal motivations in economic theorizing as "humanomics," a term that was not yet in vogue in Edith's time, but one that Angela feels correctly reflects Edith's methodological preferences. Her paper covers much of the historical record summarized above in greater detail and describes in much more vivid terms Edith's relationships with key players in the economic and political post-War world. Of particular value is her description of Edith's work on the Hercules Powder Company. Edith's anthropological approach to her research was key in her appreciation of the role human capabilities and effectiveness had on a firm's growth and development, first elucidated in her study of Hercules Powder, and the foundation of the modern resource-based view of strategy. Angela also discusses Edith's work on the oil industry and its multinational companies and on development economics in general. Here again, Edith's contributions are most valuable as they illustrate the need for highly trained personnel in less developed countries as a counterbalance in negotiations with foreign investors or in the development of economic policies that fully encompass interdisciplinary perspectives to the study of specific problems. She concludes with three linked lessons that any modern scholar can and should incorporate from Edith's work.

The paper by Jason and Katherina Pattit and J.-C. Spender, "Edith T. Penrose: Economist of 'The Ordinary Business of Life'" is an audacious reconstruction of intellectual history. It envisages Penrose as belonging to an "Invisible College" whose membership descends from

Marshall to Knight (mediated through Boulding, his student) and Coase, all of whom were concerned with the ordinary business of life. Marshall and E.A.G. Robinson, by concerning themselves with the “insides” of firms, emphasized managerial agency. Knight conceptualized the firm as an alternative mode of social organization to the market and saw entrepreneurial judgement in the face of uncertainty as a defining feature of firm strategy. Coase’s tight focus on the nature of contracts, including the implicit contract that bind factors of production, especially labor, to the firm, helped Penrose to theorize that entrepreneurial judgement about the type and dimensions of the multiple aspect of costs was a key determinant of the direction of the growth of the firm. However, Penrose had to develop her own language to articulate this framework. Notions such as “economies of growth”, managerial “learning” and “interstices”, whilst not necessarily new, were deployed in the service of Penrose’s “pluralist” thinking. This differentiated her work from what became “New Institutional Economics” and from the tautological Resource Based View, which has no concrete conception of “the firm.” There is a great deal of stimulation to be had from studying this paper tracing the intellectual antecedents of Edith’s ideas and contributions.

In “Agency theory and slack resources: A Penrosean analysis of innovation strategy,” Ram Mudambi and Tim Swift identify corporate dynamics as a major concern of Penrose. They suggest that (via Machlup) Austrian Economics was a key formative influence on Edith’s TGF. Innovation, in their formulation, involves a key strategic interplay between managerial subjective decision making (in the face of the essentially Knightian uncertainty of R&D decisions) and the availability of slack resources in the firm. Managers face uncertain payoffs in any R&D investment, but would probably risk more in the presence of slack resources. Furthermore, the quality of those resources and their proximity (in both geographic and technical terms) to the project in question would affect the risk/return calculus as well. This, in turn, potentially opens a research avenue into conflicts within a Penrosean firm. Such a Penrosean model of innovative ability draws attention to the essential heterogeneity of firms, to the role of agency theory and to entrepreneurial decision making in the face of uncertainty. Ram and Tim argue that corporate governance issues in innovating firms open another potentially vibrant research avenue derived from this analysis. Finally, the authors also debate

the issue of how far it is appropriate to consider Penrose to be the founder or a precursor of the Resource Based View of the Firm.

Chris Pitelis both contrasts and combines the work of Penrose and Stephen Hymer in his paper “Why Unicorns exist? On Penrose, Hymer and prediction.” He suggests that Hymer’s theoretical framework relies on exogenous drivers and that the Coasean internalization approach he utilized was based on the need to acquire monopoly power, and that this need drove cross-border integration. For Penrose, integration was driven by production-related efficiencies. However, Penrose also recognized the role of external factors (“productive opportunity”) and the two viewpoints coalesce on firms as “purposeful agents, motivated by the broadly defined pursuit of profit, operating under limited information and uncertainty, possessing bounded and procedural rationality, learning and seeking to varying degrees to shape their environment.” Pitelis points out that both approaches have limitations in that they ignore intra-firm conflict, context co-creation (of market and eco-system) and the role of finance. Using a combination of Hymer and Penrose, Pitelis believes that it is possible to predict the emergence of the “sharing economy” and the advent of “unicorns” (rapidly growing, high value enterprises). Pitelis ends with a plea for the extension of the Penrosean agenda by exploiting the opportunities of empirical testing and prediction.

Peter Buckley’s piece on “Edith Penrose and the theory of the multinational enterprise (MNE)” emphasizes that her focus was on growth and the rate thereof and not on size per se. Thus, multinational firms were governed by the same limitations that internal resources placed on growth in any purely domestic firm and could be treated as an extension of a multiplant domestic firm. He contrasts in detail the distinction between integration (a managerial act determined by technical complementarities) and internalization (a replacement of market contracts by managerial fiat) which is the basis for the difference between Penrose’s theory and Buckley & Casson (1976). He goes further, however, in applying Penrosean’s limits to growth to the speed of international diversification and market entry. He concludes that “Penrose’s multiplant, multidomestic model of MNE organization is likely to become increasingly relevant as a viable managerial response to the increasingly fractured world economy and world trading system.” This presents rich opportunities to examine more “locally oriented” international

subsidiaries that are less integrated into a global network as a response to nationalist trends in economic relations.

Nianchen Han and Tony Tong's "Linking together Penrose's two streams of intellectual contributions: The use and protection of knowledge resources within and across firms and countries" joins together Penrose's first book (*The Economics of the International Patent System*, 1951) with her work on strategic management (largely from her second book *The Theory of the Growth of the Firm*, 1959) to provide an intriguing synthesis on the protection of knowledge resources both within and across firms. The services provided by knowledge resources are critical to the growth of firms in the Penrosean system. An effective international patent system makes it possible to separate use from ownership of knowledge. Thus, increased specialization will increase economic efficiency and social benefit. An efficient patent system expands the market for the exchange of knowledge resources between firms (Liesch et al., 2012). Furthermore, a combination of strategic decisions by firms, under the supervision of an effective patent system increases the efficiency of the economy and enhances social welfare (see also Casson, 1979). This paper suggests a series of interesting research extensions of this broader Penrosean schema.

The paper by Ben Gomes-Casseres poses an intriguing intellectual puzzle by applying the analysis of *The Theory of the Growth of the Firm* to the modern digital economy both in its original form and in an updated version. In so doing, Ben introduces Penrose to Coase and Coase to Penrose, providing a contrast with Pitelis' paper discussed above. Gomes-Casseres makes the interesting comment that, while firms are bundles of resources, not all bundles of resources are firms. Moreover, the access of firms to external bundles of resources—networks, platforms and ecosystems—stretches the reach of its managerial resources in ways that may reduce some of the limitations implied in Penrose's model. This extension of Penrose's approach to external resources, quasi-internalized, is the key to the application of her schema to the digital, networked economy. Any such complementarities across the conventional boundaries of the firm represent "additional factors of production." The extra-firm linkages and leveraging of resources through networks and alliances is, therefore, an important extension to

the original theory and open up new research possibilities on the role of the firm in the digital economy.

Yasemin Kor, Joe Mahoney and Danchi Tan ask why *The Theory of the Growth of the Firm* has remained so attractive to strategic management and international business scholars 60 years after its publication. In a wide-ranging paper, the authors provide evidence from a review of literature drawing on Penrose's work published between 2004 and 2019 (a total of 35 articles) in top journals in these fields. They assert that she is widely regarded as the founder of the Resource Based View (RBV) of the firm but that her influence goes far beyond this to international business research and to other theoretical approaches to management and the growth of firms. From the RBV the authors trace the legacy to its impact on the dynamic capabilities approach, they also see Penrosean elements in the "Uppsala" Internationalization process approach, as well as in operations management and in theories of institutional entrepreneurship. Kor, Mahoney and Tan note that Penrose's essentially marginalist thinking aided these extensions. Of particular interest is the authors' focus on "the Penrose effect," the key constraint on growth that results from the time and costs associated with the recruitment, training and acculturation of additions to the management team. Penrose's focus on the services of knowledge resources incorporated in management is analyzed as both "determinants and consequences" of the growth of the firm. Important extensions of Penrose's framework include: the types of resources that promote growth, the directions of growth of the firm including product diversification, how growth opportunities can be subjectively identified by management, limits to the growth of firms, especially managerial constraints, and strategies to relieve these constraints. The authors then point to future research directions in terms of strategic coherence and the relevance of firm-specific managerial and employee resources.

Conclusion: A Penrosean research agenda

The papers in this volume, collectively and severally suggest a vibrant research agenda inspired by Edith Penrose's work. There seem to be plenty of opportunities for future scholars to revisit a variant of the Kor et al.'s question: "Why has Penrose's work continued to inspire strategic management, international business and other social science researchers nearly a century after

its publication?” We asked all contributors to this Special Issue to highlight those research areas or challenges where they felt a Penrosean approach would produce significant results, whether in terms of subject matter, methodology or research philosophy. As expected, the responses were many and covered a wide range of issues. Below, we classify a few of these suggestions, together with questions raised within the submitted essays themselves, into several categories where we felt collectively that Penrose’s influence may still be vibrant in the years to come.

1. Dimensions and directions of growth

Even though past research has examined product diversification and international growth separately, our authors advocate considering these factors jointly because they demonstrate the strategic complexity of the firm and are both affected by Penrose’s analysis of managerial limitations. Product and international diversification are likely to jointly influence the boundaries of strategic coherence, but we do not fully understand whether these effects are additive and/or multiplicative (interactive), synergistic or non-synergistic. Replicating and exploiting existing capabilities in new technological and geographic markets involve different challenges and complexities, and a simultaneous expansion on both fronts can be taxing for the firm, as Igor Ansoff warned over 70 years ago. Thus, future research should examine how firms create and capture synergies from diversification and international growth initiatives, both sequentially and simultaneously. Research can also explore how a firm's growth trajectory and patterns may affect its overall strategic coherence, especially in light of elevated uncertainty, complexity, and competitiveness in most industry settings and global markets.

According to Pitelis, Penrose's key contribution is the endogenous growth dynamic of the firm, namely organizational learning releasing resources that can be put to profitable use at near zero marginal cost, hence inducing internally growth. Thus, important research opportunities may result from relaxing some of the underlying assumptions about the employment contract and the cost of managerial time that engender this dynamic.

2. The specificity of human talent

In her TGF and Hercules Powder Co. writings, Penrose emphasized the role of firm-specific talent embedded in the firm’s employees and managers in both facilitating and constraining the growth of the firm. Given that firm-specific human capital is subject to

opportunistic value capture by the firm, and given the mobility of talented human resources, it has been argued that firms often under-invest in human capital. Future studies should explore how firms can promote and safeguard firm-specific investments in employees and managers.

A related issue is the potential for acquiring and incorporating talent from other firms through mergers, acquisitions or intercorporate collaborative agreements. If such human capital capture strategies are possible, the limits to growth hypothesized by Penrose may be less constraining than she proposed. A profitable avenue for future research may include measures of the effectiveness of such strategies as well as the nature of policies and procedures that can maximize the transfer of talent to the acquiring firm and minimize the time required for such transfers to be incorporated (or socialized) into the firm effectively.

3. Knowledge and competitive advantage

Knowledge is fundamental to any concept of competitive advantage whether in terms of its generation, utilization, or internal transmission, as is its protection from competitors. Han and Tong attempt to integrate these two branches of Edith's work: TGF and Patents. They argue that patent system can protect knowledge from misappropriation, thus facilitating its use across firms and countries and driving firm growth. But since knowledge varies by tacitness, complexity, and teachability (Kogut & Zander, 1993), this idea does not apply equally to all types of knowledge. For instance, the value of patent protection for tacit knowledge is more limited as it is hard to codify into patent documents; in addition, tacitness also thwarts imitation attempts by other firms. Yet tacitness is at the core of Penrose's arguments regarding the importance of managerial capacity.

As a result, firms do not just rely on patents for protection of knowledge; they also rely on organizational means – such as secrecy, employee job design, organization design, non-compete agreements, placing R&D facilities in different locations/countries, etc., to reduce their exposure to tacit knowledge appropriation. Thus, future research may look at the interaction between patent systems and organizational strategies in affecting knowledge development, use and protection, and its impact on the growth of the firm.

4. The role and importance of slack resources

Mudambi and Swift suggest two critical avenues of research stimulated by Penrose's TGF insights, decades before they became part of mainstream management theory and research. These are (a) the importance of slack resources (i.e., those above the level required to sustain the basic operations of the firm) that lie at the heart of agency theory within the firm; and (b) the micro-foundations approach to the importance of individual managers, a part of behaviorist theory. Both of these are major current research areas within economics, management, finance, accounting, and even marketing. In short, her work anticipated a great deal of what energizes research, not just in a single discipline, but across the entire business curriculum.

5. The firm vs the ecological space

Gomes-Casseres argues for integrating more of Penrose and Coase to study what he calls the "metamorphosis" of the firm; will the rise of networks and alliances, and what today we call ecosystems, transform the nature of the firm? Penrose's core idea of how organizations bundle resources and capabilities to match opportunities in the market – her notions of managerial capabilities, routines, and entrepreneurship – are foundational even in this new world of alliances and ecosystems. Whereas these "new" forms of organization differ from Penrose's classic "firm", they still follow the same fundamental laws. The study of the "metamorphosis" of the firm will blossom on this foundation.

6. The "new" economy

Several of our authors believe that Penrosean thinking can be applied to the new economic forces shaping today's firms, such as information intensity, data mining, network effects and the characteristics of the "gig" economic sectors. Gomes-Casseres argues that these forces, although nascent in Penrose's time, fit well in Penrose's framework and give her theory increased relevance today – another testament to the power of her original thinking.

7. The origins of RBV and dynamic capabilities

Although discussed in several papers we have stayed neutral on the issue of how much credit is due to Edith for the development of the resource-based view of the firm. Han and Tong argue that her intellectual contributions (in TGF and patent systems) herald the

development of RBV and TCE many decades later—two mainstream theories in strategic management today. Linking together the two streams also reflects the strong link between TCE and RBV/KBV increasingly recognized today and also suggested by Gomes-Casseres in his essay. There is, therefore, an implicit recommendation for future scholars to delve into her work with a modern lens and determine just how clear are the linkages between Penrose’s two major streams of work and our modern managerial theories.

8. Methodological approaches

One lesson Kor et al. emphasize which is applicable for young and energetic scholars is that Edith Penrose demonstrated the fruitfulness of utilizing methodological triangulation to bridge the theory-practice gap. In most of her work her theoretical insights were informed by (a) discussions with managers pragmatically rooted in real-world problems; (b) disciplinary research on economic theories of growth; (c) research on business history and business biographies; (d) studies of annual reports and information provided by the financial press; and, most importantly, (e) her first-hand observations within firms (e.g., within the Hercules Powder Company). Penrose’s work is a prime example of the necessity for younger scholars to read, learn, and inwardly digest key materials at source. Secondary interpretations and glosses are poor substitutes for the worthwhile investment of time in a true original contribution.

As Angela Penrose describes in her essay, Edith’s approach to theory development was first is to read, think and analyze until one is sure of the fundamental questions to be asked. Having read all that was available at the time on the optimal size and efficiency of firms, Edith then focused on a different question: why, faced with the same market conditions, do some firms grow while others stagnate? This questioning, together with her in-depth experience at Hercules and other firms, led her to identify the key role that managerial and entrepreneurial capacity played in creating the resources required to generate new products and processes with which to satisfy new market demand.

Questioning standard theory, working out how to ask fundamental questions and deriving the appropriate answers are hallmarks of Penrosean methodology. This may require employing methods, devising tools and appropriating ways of thinking from other disciplines such as sociology, political science, history, and anthropology. As Pattit et al. suggest, how

many economists now, let alone in the 1950s, would look to *Harvard Business Review* or turn to Chester Barnard for clues about the nature of “the firm”? When compiling his Lowell Institute lectures, the extant economic literature on “the firm” and on organizations did not reflect Barnard’s experience inside AT&T. He looked to the emerging sociology and biology literatures and drew heavily on his life as an employee and manager. In his introduction to the 1968 edition of *The Functions of the Executive*, Kenneth Andrews reported that Barnard visited Johns Hopkins in late 1953 where he gave a talk titled “The Elementary Conditions of Formal Organization.” We can conjecture Edith heard Barnard’s talk, and that it may have led her to read his book and explore for inspiration beyond classic economics.

As with all truly interesting, historically informed, and philosophically attuned scholarship, Edith’s work is rich, deep, and multi-method. She fully appreciated the rhetorical aspects of her work, choosing terms and language with great care. Likewise, she listened to managers’ rhetoric as well as that of a broad spectrum of academics, including Boulding and Barnard.

9. A final thought.

Commenting on Edith’s thinking, as we and our colleagues have attempted to do here, becomes a Rorschach test. Her work’s subtle indefiniteness draws readers to project their own interests and anxieties into their reading. Hence, some see steps towards some new rigorous theory of endogenous growth, while others see methodological conflict, an appeal to open-ended historical non-positivist methods. Some argue her focus was the business executives’ imagination, an extremely open notion. It follows that perhaps there is ultimately no definitive core to her work, for she also admitted to being imaginative and creative in ways that lay beyond rigorous explanation. As she wrote to Machlup, she hoped some would see *The Theory of the Growth of the Firm* as a work of art, for she was an artist of the human condition rather than a seeker of a rigorous theory that would encapsulate, and so trivialize, the mystery of our being.

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José R. de la Torre. José is co-founder and Chair of the EMBA Consortium for Global Business Innovation, professor at Bologna Business School, and Founding Dean of FIU’s Chapman Graduate School of Business where he held the Batten Chair in Strategy. He earned his doctorate from Harvard Business School and taught at UCLA, INSEAD and Georgia State. He is a Fellow of the AIB, the International Academy of Management, the Strategic Management Society and the Business Association for Latin American Studies and was named Outstanding Educator of the Year by the Academy of Management in 2013. He served as President of EIBA in 1981-82 and the AIB in 1998-2000, and has published over 65 books and articles and more than 30 case studies in the field of international business and strategy, intercorporate collaboration and global citizenship. José has served as director for multinational companies in Mexico, US and India, and on several International Advisory Boards of business schools in Europe and Latin America.

Benjamin Gomes-Casseres. Ben has worked on the strategy of business combinations for thirty years as a researcher, teacher, and advisor. His book *Remix Strategy: The Three Laws of Business Combinations* (Harvard Business Review Press, 2015) won the Axiom Books Silver Award in Economics and was a finalist for the Strategy Award at Thinkers50. Ben published two online courses for Linked-In Learning, “Strategic Partnerships” and “Ecosystems and Platforms.” At Brandeis University since 1995, Ben directs the MBA program and the Asper Center for Global Entrepreneurship. Previously he taught for a decade at the Harvard Business School and worked as an economist at the World Bank. Ben has published five books and many articles and case studies on M&A, alliances, and joint ventures; his views have appeared widely in the business press. Ben holds degrees from Harvard, Princeton, and Brandeis. A native of Curaçao, he speaks four languages. His work is at www.remixstrategy.com.

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Yasemin Y. Kor. Yasemin earned her Ph.D. in Business Administration from the University of Illinois at Urbana-Champaign. She is currently the Beckwith Professor of Management Studies at the Cambridge Judge Business School. She studies CEO and executive team competencies (human and social capital), board governance effectiveness (board capital and CEO-board interactions), and development and renewal of the firm's strategy and capabilities.

Joseph T. Mahoney. Joe earned his Ph.D. in Business Economics from the Wharton School of Business at the University of Pennsylvania. He is currently the Caterpillar Chair of Business in the Gies College of Business at the University of Illinois at Urbana-Champaign. His research focuses on the economic foundations of strategy and stakeholder theory of the firm.

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Jason M. Pattit. Jason is an Associate Professor of Management in the Opus College of Business at the University of St. Thomas. He holds a Ph.D. in Business Administration from Syracuse University. His research has been previously published in *R&D Management*, *Research Policy*, the *International Journal of Innovation and Technology Management*, the *Journal of Business Research*, and *Business and Society Review*. Originally focusing on the management of inter-firm relationships and the strategic use of contracts in R&D alliances, his research now broadly examines social issues in business and management.

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Angela M. Penrose. In the week Angela Penrose was given *The Theory of the Growth of the Firm* to read as part of her degree course at Oxford she met her future husband, Edith Penrose's son Perran. She and Perran went on to teach in Libya, Nigeria, Ethiopia, Burundi and Zambia, where Angela also worked as a journalist. After becoming involved in the response to famine in Ethiopia she worked with development and humanitarian organizations. She has extensive experience of communicating in the printed and broadcast media and has written extensively on humanitarian issues. She was Director of Policy at *Save The Children* and worked with international and national children's organizations promoting social protection in developing countries. Edith Penrose came to live with Angela and Perran and their two children after the death of her husband E.F Penrose in 1984. Oxford University Press published Angela's biography of Edith, *No Ordinary Woman*, in 2018.

Christos Pitelis. Chris Pitelis is Professor of International Business, Organization and Strategy and Head of the International Business Division at Leeds University Business School. He is a Life Fellow, Queens' College, University of Cambridge, co-editor of the *Cambridge Journal of Economics* and literary executor of the collected papers of Edith Penrose. Chris holds a doctorate in Economics from Warwick University and researches on organization, strategic management and governance for sustainable business, regional and inter-national competitiveness. He published over ten books and a hundred articles in journals such as *Academy of Management Review*, *Organization Science* and *Journal of International Business Studies*. He has served as Dean of College, Head of School, and visiting professor internationally and at the editorial boards of leading journals. He has organized and presented at numerous conferences, and led consulting and training projects for international organizations, governments and regions, businesses and NGOs.

J.C. Spender. J.C. was an RN submarine officer, nuclear engineer, computer person, and entrepreneur before coming into academic life after earning his Ph.D. at Manchester Business School. He has taught on five continents and served as Dean in two business schools. Retiring in 2003 he has published widely and is now Research Professor at Kozminski University (Warsaw) and Visiting Scholar at Rutgers Business School and at Fordham University. He writes about the theory of the firm and the history of management education. He is also Editor of the Cambridge University Press *Elements in Business Strategy*: <https://www.cambridge.org/core/what-we-publish/elements/business-strategy-elements#>

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Table 2. Reviewers for this Special Issue

The co-editors of this volume would like to express their sincere gratitude to the following individuals who provided excellent criticism and suggestions on the various papers included in the Special Issue.

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