Editorial

Recent developments in the economics of entrepreneurship

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Abstract

This paper serves as an introduction to the special issue of JBV on the economics of entrepreneurship. Since the beginning of the 18th century, economics has recognized the importance of entrepreneurship at both the microeconomic and macroeconomic levels. This paper reviews recent developments in the economics of entrepreneurship, discusses the principles behind the emergence of a new heterodoxy in economics, and how these new principles provide fertile grounds to further our understanding of entrepreneurship and entrepreneurial behavior. Finally, the paper reviews the contributions included in this special issue and puts them in the context of recent developments in entrepreneurship research.

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Keywords: Economics; Entrepreneurship; Behavioral economics; Institutional economics

1. Executive summary

In 1732, the Irish economist Richard Cantillon identified entrepreneurship as the willingness of individuals to carry out forms of arbitrage involving the financial risk of a new venture. Since then, economists such as Mill (1870), Say (1857), Knight (1921), Schumpeter (1934), Kirzner (1973, 1997) and Baumol (1990, 2002) have been among the most influential contributors to our understanding of entrepreneurial behavior and its related processes.

Entrepreneurship matters. It matters for individuals, organizations, and countries. Together with the other social and management sciences, economics helps us understand how individuals make decisions, why and how they create and grow organizations, and what the intended and unintended consequences of these actions are at both the micro and macroeconomic levels. Economics further helps us analyze how entrepreneurship influences growth and development and how, in turn, the macro structure of a region or country influences the type and quantity of entrepreneurship. Economic analysis provides insights for scholars and road maps for practitioners and policy makers. Overall, economic theories have guided us in understanding human behaviors and men’s continuous quest toward improving their condition.

The last 20 years have also seen the development of several new branches of economic theorizing. Together with traditional neoclassical economics, new institutional economics, complexity theory, behavioral economics, and evolutionary economics, to cite just a few, are now providing fertile ground for a new generation of scholars to contribute...
to our knowledge of entrepreneurial behavior and related phenomena. Significant advancements in the availability of suitable data, the reduced costs of computation, and the adoption of new techniques, such as non parametric estimation techniques, experimental methods, and ethnographic studies, have also increased our ability to use economics in producing rigorous tests for our theories.

The purpose of this article is to provide a brief overview of recent developments in economics and to discuss how they have shaped some recent contributions to the entrepreneurship literature. Specifically, Section 2 reviews recent contributions to entrepreneurship rooted primarily in neoclassical economics. Section 3 discusses the emergence of new and interesting areas of economics. Section 4 focuses on behavioral economics and new institutional economics and discusses how they have been applied to the study of entrepreneurship. Section 5 summarizes the six original papers included in this special issue and puts them in the broader contexts of recent literature in entrepreneurship. Section 6 concludes and highlights fertile grounds for future research in the economics of entrepreneurship.

Clearly, given space constraints, the review presented in this paper does not pretend to be comprehensive. Since this special issue is about developments in the economics of entrepreneurship, only works published very recently will be mentioned. In addition, we will focus exclusively on papers adhering to a strict economic approach and published primarily in economic journals. The reason for this decision is to provide a quick source of references about recent research on entrepreneurship that may, otherwise, have escaped entrepreneurship scholars from disciplines other than economics. We do hope, however, to provide an interesting starting point for anyone interested in better understanding recent trends and new developments in the literature on the economics of entrepreneurship, generate some interesting discussions and, hopefully, identify synergies and generate new questions for further research.

2. Economics and the study of entrepreneurship

Many aspects of entrepreneurship and its implications have been studied taking the lens of neoclassical economics. Works have spun a variety of micro and macroeconomic topics. In recent years, a significant amount of economics research has focused on entrepreneurship as the result of a maximization process in which individuals have to select between alternative employment options (Parker, 2004). Lazear (2004, 2005) and Wagner (2003), for example, have suggested that entrepreneurs must be jacks-of-all-trades with the ability to perform many tasks without necessarily excelling at any of them. Also, entrepreneurship has been studied in relation to allocation of talent (Michelacci, 2003), personal characteristics (Djankov et al., 2006; Lévesque et al., 2002), immigration (Fairlie and Meyer, 2003), networks and social capital (Minniti, 2004, 2005), and unemployment rates (Tervo, 2006), to cite just a few topics. The paper by Parker in this special issue fits in this line of theoretical work by addressing the emergence and optimal size of entrepreneurial networks. Additional contributions have studied the impact of entrepreneurship on aggregate employment. For example, substantial differences have been shown to exist in self-employment rates across countries (Parker and Robson, 2004) and as a function of the age distribution of the population (Lévesque and Minniti, 2007). The paper by Thurik, Carree, van Stel, and Audretsch in this issue contributes directly to our understanding of the linkage between self-employment and unemployment at the aggregate level.

Issues of firm size and organizational structure have been also addressed. Transaction cost, property rights, and the resource-based theory of the firm all assume that assets, both tangible and intangible, are heterogeneous. Recent development in the economic theory of the firm have allowed scholars to refine the concept of capital by defining capital heterogeneity in terms of perceived attributes, functions, characteristics, and uses of capital assets. Conceiving entrepreneurship as the organization of heterogeneous capital has provided new insights into the emergence, boundaries, and internal organization of the firm (Foss et al., 2007). In addition, some scholars have shown that entrepreneurship is a key to the growth and survival of firms in a volatile environment, because entrepreneurial judgment is necessary for success in making complex decisions under uncertainty (Casson, 2005).

Entrepreneurship has also been studied extensively in economics to investigate issues of innovation and knowledge creation. For example, Audretsch and Keilbach (2004, 2005) suggest that entrepreneurship is crucial in driving the process of selecting innovations, hence in creating diversity of knowledge, which, in turn, serves as a mechanism facilitating the spillover of such knowledge across individuals. Also, Hellman (2007) has presented a model showing how the allocation of property rights has important implications for innovation and entrepreneurship. Specifically, he shows that firms may reject profitable opportunities that fall outside their core activities causing employees to leave and start their own business. The paper by Audretsch, Bonte, and Keilbach in this issue contributes to this area of research and to our understanding of the linkage between entrepreneurship, innovation and growth at the regional level.
The issue of capital constraints has always received particular attention in the economics of entrepreneurship. Gabszewicz and Laussel (2007) present a bilateral oligopoly model in which individuals endowed with a given amount of capital decide whether they want to act as entrepreneurs or as capital lenders and how much capital they would like to borrow or lend respectively. Under increasing returns to scale, they show the existence of multiple equilibria at which wealthier capital owners become entrepreneurs while the remaining individuals decide to become capital lenders. Indeed, a large literature has documented a positive relationship between initial wealth and subsequent business entry. Low-wealth potential entrepreneurs may be unable to start a business (Evans and Jovanovic, 1989). Cagetti and De Nardi (2006), for example, construct and calibrate a parsimonious model of occupational choice that allows for entrepreneurial entry, exit, and investment decisions in the presence of borrowing constraints. Arguments on financial constraints have been used to justify policy intervention in small business financing. On the other hand, using United States data, Hurst and Lusardi (2004) have found that, except for the top 5% of the wealth distribution, no relationship exists between household wealth and the probability of starting a business. Along similar lines, Paulson et al. (2006) have shown that the presence of financial constraints does not establish grounds for a policy intervention and that, given the financial market imperfections, the existing set of contracts may be the optimal ones.

Overall, based on a broad review of recent studies, van Praag and Versloot (2007) conclude that entrepreneurs have a very important and very specific role in the economy. They create employment, contribute to productivity growth, produce and commercialize innovations and, by doing so, generate positive regional spillovers. At the individual level, they have found the literature to show that entrepreneurs also appear to be more satisfied than employees.

A distinctive domain of economic analysis is its ability to analyze the linkages between entrepreneurship and the aggregate level of economic activity. Within this context, an increasing amount of attention has been recently paid to the specific role of start-up activities in the growth of regions and cities (Acs and Armington, 2006; Fritsch, 2004). With respect to theoretical work, the endogenous growth theory developed initially by Romer (1990, 1994) represents the state of the art on the causes and structure of economic growth and helps us understand the spreading and emergence of technological change and its relationship to growth. Unfortunately, until very recently, entrepreneurs were omitted from such studies, largely because of the technical difficulties involved in introducing satisfactory characterizations of entrepreneurship in the mathematical models. Only recently, scholars have begun developing endogenous growth models that explicitly account for the role of entrepreneurship in the process of growth.

Among studies that consider the role of the entrepreneur, Michelacci (2003) proposes a model of endogenous growth in which technological change requires both researchers, who produce inventions, and an entrepreneur who transforms them into innovation. Acs et al. (2004, 2005) argue that one of the breakthroughs contributed by endogenous growth theory is the idea that investments in human capital create economic growth through the spillover of knowledge. Along similar lines, Minniti and Lévesque (in press) propose a model in which entrepreneurs may be research-based (those incurring R and D expenditure) or imitators (those not incurring R and D expenditure) and show that, when the returns to R and D expenditure are low, such as in many emerging economies, the presence of a high number of imitative entrepreneurs who increase competition and product supply is sufficient to generate economic growth regardless of the distribution of activity between research-based and imitative and in spite of low R and D expenditure.

Finally, the economic lens provides interesting insights on the role that governments may play in fostering or hindering entrepreneurial behavior. The number of studies in this area is quite significant to reflect the increasing attention paid to entrepreneurship by governments at all levels all across the world. In fact, some authors argue that entrepreneurship policies were developed as a measure to absorb workers displaced by corporate downsizing and privatization waves in the 1980s (van Stel and Storey, 2004). Others, instead, argue that entrepreneurship policies are emerging as one of the most essential instruments for economic growth and that, just as monetary and fiscal policies were the mainstays for creating employment and growth in the post-war economy, entrepreneurship policy is likely to emerge as the most important policy instrument for a global and knowledge-based economy (Gilbert et al., 2004). McMillan and Woodruff (2002), for example, argue that the success or failure of a transition economy can be traced in large part to the performance of its entrepreneurs since much of the task of devising new ways of doing business in transition economies has been taken on by entrepreneurs who end up acting as reformers. The paper by Aidis, Estrin and Mickiewicz in this special issue contributes directly to this line of research.

3. The emergence of a new heterodox mainstream

Works mentioned in the previous section provide recent examples of research that uses well established approaches in the economics literature. The last two decades, however, have seen the emergence of new fields of economic
analysis. Economists are somewhat moving from Homo Economicus to Homo Sapiens (Koppl, 2006; Thaler, 2000) and the distance between economics and other social and management sciences is declining. For example, cross-disciplinary work in economics and psychology has opened the field of behavioral economics, economics and biology have led to theories of gene-culture coevolution, whereas economics, strategy and organizational behaviors have generated a stream of work on the emergence, boundaries and growth of organizations.

Interestingly, all new fields of economic inquiry share some common basic principles, namely the importance they attribute to bounded rationality, rule following, institutions, cognition, and evolution (Koppl, 2006). As Colander et al. (2004, 2005) point out, because of the importance gained by these principles, economics has experienced a paradigm shift and the traditional neoclassical orthodoxy is no longer the economics mainstream. Economics is moving from a close and deductive science, to an open and inductive one, and a theoretical heterodoxy is emerging as the new economic mainstream. Much of this new territory lends itself well to the study of entrepreneurship and, as a result, it is important for scholars of entrepreneurship to understand its origins and fit within the context of economics in general.

Colander et al. (2004, 2005) distinguish “orthodoxy” from “mainstream.” They describe “orthodoxy” as an intellectual category, in other words, as the set of default or status-quo views held by the profession and commonly presented in textbooks. By contrast, “mainstream” is a sociologically defined category, in other words, it is the elite of the profession and the set of ideas routinely used by this group (Koppl, 2006). The prominent economists interviewed by Colander, Holt, and Rosser in their 2005 book support this view. McCloskey, for example, expects economists to give up existence theorems and narrow notions of econometrics. Brock thinks economics is headed in a more computational direction as a result of the falling costs of computation. Axtell expects low rationality game theory to emerge as an important tool in economics. Young expects the emergence of studies on the evolution of institutions that will blend historical analysis with elements of game theory and dynamical systems theory, possibly using experiments, simulations, and institutional knowledge. Thus, as Koppl (2006) puts it, a new “heterodox mainstream” is emerging in economics based on these five widely shared principles.

First, in the emerging heterodox mainstream, individuals are assumed to exhibit “bounded rationality.” Bounded rationality reflects the limited cognitive abilities that constrain human problem solving. Standard economic models conceptualize a world populated by calculating individuals exhibiting optimizing behavior. However, empirical and experimental evidence have shown that not all human behavior exhibits unbounded rationality. In general, we now know that unbounded rationality cannot be defended on purely theoretical grounds since economic actions such as arbitrage, competition, evolution, or learning do not necessarily guarantee that unbounded rationality be the only effective model of decision making. Thus, although the standard neoclassical economic model has proven and remains extremely useful in a variety of situations, recent economic models of human actions often deviates from that model and show how those actions remains, nevertheless, economically relevant.

Second, in the emerging heterodox mainstream, individuals are modeled as rule followers. Nelson, Winter, Selten, and Simon are just some of the economists who have suggested a rule-following framework for the study of individual action. Man’s actions are the results of rule following as much as of purpose-seeking decisions. Several recent models of human behavior would allow us systematically to account for both features of human behavior, its responsiveness to incentives and its rule following nature. The notion of rule following is also important since institutions, generally, work best when they are governed by relatively simple rules rather than discretion. Thus, rule following behavior has important macroeconomic implications.

Third, in the emerging heterodox mainstream, institutions matter a great deal. Economists who have emphasized institutions include North, Coase, and Williamson. On the microeconomic side, economics provides a theory with institutions and a theory of institutions. On the macroeconomic side, economics provides a theory in which institutions contribute significantly to create the macroeconomic foundations of microeconomic behavior. Also, Austrian economics has always paid particular attention to the role played by institutions in human action and the economy. Austrian economists such as Boettke, Coyne, and Koppl, to cite a few, have recognized for a long time that institutions matter and included close institutional analysis in their work.

Fourth, once the assumption of bounded rationality is introduced, it is almost impossible to ignore the importance of cognition and the linkage between economics and cognitive psychology. Mainstream economists such as Arthur, North, and Smith have included elements of cognitive psychology in their work. Cognitive economics takes seriously into account the cognitive processes of individuals, both on the level of the agent and on the level of their dynamic interactions and the resulting collective phenomena. Often, economists working in this area construe cognition broadly
so that phenomenological psychology still fits under this heading. Also, in economics, the inclusion of cognition often relates to the biological concept of a theory of mind modules as recognized in evolutionary psychology.

Finally, in the emerging heterodox mainstream, economic phenomena are often evolutionary. Nelson, Winter, and Alchian are among the most prominent supporters of this view. The concept of evolution in economics is derived from biology and stresses complex interdependencies, competition, growth, and resource constraints. The important innovation for economic theory is that, although evolution sometimes approximates an optimal solution, it does not necessarily require the dynamics of a system to settle there, thereby allowing suboptimal solutions to emerge often. The applications of an evolutionary approach are very broad. For example, in recent models of economic growth and development, evolution has been posited as the engine of institutional change.

Overall, the emergence of a new heterodox mainstream based on these five principles has opened economics to new linkages with other disciplines. It has also made economics methods and views more conducive to the study of entrepreneurship. This explains, at least in part, the renewed interest showed by economists in the study of this topic and the flourishing of cross disciplinary entrepreneurship research between economics, psychology, biology, anthropology, sociology, and management. In fact, the last few years have seen a significant increase in the amount of works conducted on entrepreneurship that leverage a heterodox approach to economics. The following section of this paper provides a brief review of some of the areas in which these works have emerged.

4. New fertile grounds for the economics of entrepreneurship

The five basic principles of bounded rationality, rule following, institutions, cognition, and evolution are at the roots of a significant and growing amount of recent work on entrepreneurship in economics. Among the various fields of economics emerging from the application of one or more of these principles, behavioral economics and new institutional economics have been particularly useful in generating work on entrepreneurship.

Behavioral economics is a branch of economics that, leveraging insight from psychology, investigates what happens in the economy when individuals do not behave in a strictly rational way. Although maximizing agents and equilibrium concepts are still at the core of most models in behavioral economics, rational motivations are not required (Ashraf et al., 2005). Already Simon (1955) criticized modeling economic agents as having unlimited information processing capabilities and suggested that even rational people adopt rules of thumb as a way to economize on cognitive resources. Examples of the ways in which human judgment diverges from rationality include overconfidence, optimism, and anchoring, as well as the ways in which we estimate frequency or likelihood (Kahneman et al., 1982).

In other words, behavioral economics posits that individuals’ decisions are often distorted by different kinds of heuristics and biases (Kahneman and Tversky, 1974). These heuristics and biases are often very relevant for entrepreneurial decisions. In addition, some types of biases appear to be typical for entrepreneurial behavior. This is because the exploitation of business opportunities requires the entrepreneur to make decisions in complex situations without complete knowledge of all relevant facts and likelihoods (Knight, 1921). Studies in behavioral economics have shown that examples of three typical entrepreneurial distortions may be found in situations characterized by reference-dependent behaviors, biases in probability perceptions, and biases in self-perceptions (Schade and Koellinger, 2007).

Reference-dependent behavior includes all situations in which behavior is influenced by a specific predetermined anchor, or reference point, that influences subsequent behavior. Lévesque and Schade (2005) have shown that anchoring is the major heuristic driving the time allocation decision between developing a new business and holding a wage job. Specifically, they found behavioral patterns exhibiting different biases that depend on whether all working hours should be allocated to the new business, all to the wage job, or should have been split between these two activities. Ritsila and Tervo (2002) have found unemployed individuals to be more likely to attach higher subjective values to the possible gains from a new business and lower subjective values to possible losses than individuals holding a job. Finally, in a quasi-experimental study, Burmeister and Schade (2007) have found entrepreneurs to be less susceptible than students and bankers to status-quo bias. This is not surprising since, by definition, entrepreneurs tend to be individuals who deviate from the norm.

Biases in probability perceptions include heuristics used to judge the probability of potential events that typically lead to deviations from an objective measure of probabilities. Arenius and Minniti (2005) and Koellinger and Minniti (2006) have shown that perceptions about one’s environment are a crucial component of a person’s decision to start a business. Finally, biases in self-perceptions include the tendency of individuals to judge their own behavior and abilities differently than they objectively should. For example, some studies have shown that most individuals are overconfident about their own relative abilities and unreasonably optimistic about their future (Koellinger et al., 2007a). Other studies have shown that biases in
self-perceptions tend to be systematically different across entrepreneurs of different sex (Koellinger et al., 2007b; Minniti and Nardone, 2007).

A recent spin-off of behavioral economics is neuroeconomics (McCabe, 2005, 2003). That is, the combination of neuroscience, economics, and psychology for the purpose of studying how individuals, and entrepreneurs in our context, make choices. Neuroeconomics looks at the role of the brain when we evaluate decisions, categorize risks and rewards, and interact with each other. Neuroeconomics extends the approach of behavioral economics by adding the observation of the nervous system to the set of explanatory variables used, for example, in a controlled economic experiment (Camerer et al., 2004). Although neuroeconomics has been subject to some criticism (Rubinstein, 2006), there is some evidence that it may be able to provide insights onto features of entrepreneurial behavior that could not be adequately explained otherwise. Along related lines, White et al. (2006) argue that how we behave is, at least in part, affected by the evolutionary history of our species. Their research uses evolutionary psychology as the theoretical perspective for exploring the relationship between a heritable biological characteristic (testosterone level) and an important business behavior (new venture creation). Consistent with evolutionary psychological theory, the biological (testosterone level) effect upon behavior (new venture creation) is partially mediated by the psychological effect (risk propensity).

While behavioral economics focuses primarily on individual behavior and the unintended consequences of such behavior on the economy, new institutional economics focuses on understanding the role of man-made institutions in shaping economic behavior and, in particular, in reducing transaction costs. Institutions are the “rules of the game,” consisting of both the formal legal rules and the informal social norms that govern individual behavior and structure social interactions. Although no universally accepted definition exists, the methodological principles of new institutional economics follow the demarcation between institutions and organizations (North, 1991). A key implication of new institutional economics, and a crucial one for entrepreneurship research, is that while institutions are the cause of economic change and progress, entrepreneurship is the mechanism that allows economic change to happen. Similarly to Baumol (1990, 2002), the argument here is that, since entrepreneurs are present in all settings, it is the different institutional structures which generate the large variances in standards of living across societies. What this indicates is that it is the adoption of appropriate institutions that, by increasing the relative payoff to productive activities, provides incentives for individuals to engage in entrepreneurial activities that generate economic growth. The papers by Sobel and by Audis, Estrin and Mickiewicz in this special issue can be viewed as empirical contributions in this area of inquiry.

Noticeably, the special attention paid to entrepreneurship by works inspired by new institutional economics is in part attributable to the linkages between the latter and Austrian economics. Following Kirzner (1973, 1982, 1997), Austrian economics views entrepreneurship as a universal characteristic of human action consisting in the creation of new ends-means frameworks (Koppl and Minniti, 2003). In turn, this suggests that the adoption of certain institutions has to precede productive entrepreneurial behaviors since institutions are what enable the right type of entrepreneurship to take place (Boettke and Coyne, 2006). The Austrian perspective suggests that when an entrepreneur fills a niche in his market, resources are mobilized, the possibility of complementary products or services is created and, as a result, new entrepreneurial opportunities exist (Holcombe, 2003). Thus, the entrepreneur is an equilibrator within his market and, simultaneously, a catalyst for economic activity and growth for the economy as a whole (Holcombe, 2003). In other words, in order to properly incorporate the role of entrepreneurship in capitalism, economics has to pay attention to the process conducing to equilibrium, rather than to equilibrium situations in themselves (Metcalfe, 2004). While institutions provide the appropriate ground for economic growth to take place, entrepreneurship is the mechanism that makes growth happen.

Importantly, because of its long-standing tradition, Austrian economics (and the related public choice approach) has the potential to engage the heterodox mainstream energetically while, at the same time, preserve the integrity of the basic principles of neoclassical economics and what makes, in fact, economics distinctive, namely, the essential economics elements of supply and demand, marginalist logic, opportunity-cost reasoning, and the theory of markets (Koppl, 2006). The paper by Harper in this special issue is inspired by the methodological subjectivism of the Austrian tradition. In a different context, McMullen and Shepherd (2006) have also leveraged Austrian insights to develop a model of entrepreneurial action and its associated uncertainty.

5. This special issue of JBV

A large number of excellent papers were submitted for this special issue of JBV and the selection process forced us to make some very difficult decisions. In the end, after a rigorous double blind process in which each paper was reviewed by at least two reviewers, six papers were selected covering both microeconomic and macroeconomic topics,
conceptual and empirical methods, and original as well as established data. They can be divided into three distinct though related pairs. The first includes two theoretical papers focusing on microeconomic issues. The second includes two empirical papers focusing on macroeconomic issues. Finally, the third pair includes two contributions, both with theoretical and empirical components, studying how entrepreneurship influences the aggregate level of economic activity and growth.

The first two papers study the emergence and characteristics of entrepreneurial interaction in the context of teams and networks, respectively. Taking a game theory perspective, David Harper examines the role of entrepreneurial teams in the process of entrepreneurial discovery. Harper defines entrepreneurship as a profit-seeking problem-solving process taking place under conditions of structural uncertainty. He also defines an entrepreneurial team as a group of individuals having a common goal that can only be achieved by appropriate combinations of individual entrepreneurial actions. Other things being equal, if individuals perceive their decision environment to be characterized by strong interdependence, they will be encouraged to identify themselves as team members and to adopt, as he puts it, a “we-frame” in entrepreneurial problem-solving.

In sum, Harper argues that the scope for team entrepreneurship is promoted by bounded structural uncertainty and common interest arising from strong interdependence and that, for any given amount of structural uncertainty, the greater the degree of interdependence perceived, the more likely it is that agents will spontaneously form teams. Harper’s work broadens the concept of entrepreneurship by providing an agent-neutral and institution-neutral theory. His theory is agent-neutral because it is consistent with the possibility of one or other locus of entrepreneurial decision making (e.g. individuals or teams) and institution-neutral because it does not assume any particular governance structure (such as a start-up firm) for entrepreneurial transactions to take place. Harper’s work expands the conception of entrepreneurial discovery and challenges the separation between entrepreneurial discovery and evaluation of opportunities, and between cognitive frames and opportunity recognition.

While Harper argues that strong interdependence between entrepreneurs is an important driver of team entrepreneurship, he does not explore the latter in the context of business networks. In spite of extensive literature linking social networks to entrepreneurship (Dubini and Aldrich, 1991; Elfring and Hulsink, 2003; Minniti, 2004, 2005), relatively little research has explored the existence and structure of formal business networks, and their implications for entrepreneurial performance and efficiency. Simon Parker addresses this question. In his paper, Parker develops a mathematical model and derives conditions for the existence and equilibrium size of formal business networks whose creation emerges endogenously in the economy. His framework shows how formal business networks, by enabling entrepreneurs to share information, improve efficiency and social welfare.

The model also shows that these networks are usually too small to maximize consumer surplus but that efforts to extend them beyond their equilibrium size may cause the networks to collapse. As a result, Parker’s argument is important because of its policy implications. In fact, the paper argues that business networks can be an effective way of facilitating information sharing that benefits both entrepreneurs and the entire economy. The model also suggests that the intervention of governments at all levels may have very little ability to foster networks directly and, instead, run the risk of leading to inefficient and over-sized networks in which entrepreneurs do not cover all of their costs.

Following works by North and Baumol, the next two papers analyze the role played by institutions on entrepreneurial behavior and the entrepreneurial environment. Using state level data from a variety of sources for the United States, Russell Sobel tests Baumol’s theory of productive and unproductive entrepreneurship and examines the relationship between political and legal institutions and alternative types of entrepreneurship. In his classic 1990 article on productive, unproductive and destructive entrepreneurship, Baumol argued that entrepreneurship is a characteristic of human nature and, therefore, that differences in the entrepreneurial landscape of regions and countries are not due to differences among their populations but, instead, to differences in how the entrepreneurial propensity of individuals is channelled which, in turn, depends on the quality of existing political and legal institutions.

Sobel constructs a state index of net entrepreneurial productivity by measuring productive entrepreneurship relative to unproductive political and legal entrepreneurship. His results suggest that better institutional structures produce higher venture capital investments per capita, a higher rate of patents per capita, a faster rate of sole proprietorship growth, and a higher start-up rate. The index is shown to help also in explaining differences in the levels of economic prosperity across states. Sobel discusses also how good institutional reforms have already allowed some countries to increase significantly their rate of economic growth compared to other similarly endowed nations. The policy and institutional implications discussed by Sobel lead organically to the next paper.
Using Global Entrepreneurship Monitor (GEM) data collected in 2001 and 2002, Ruta Aidis, Saul Estrin and Tomasz Mickiewicz take a comparative perspective and explore how institutions and networks have influenced the entrepreneurial development of post-communist Russia. A number of studies have indicated the hostile nature of the business environment in Russia. However, surprisingly little evidence exists about its impact on entrepreneurial behavior. Complementing Sobel’s work, their results suggest that Russia’s institutional environment is important in explaining its relatively low levels of entrepreneurial development, where the latter is measured in terms of both number of start-ups and of existing business owners.

The paper shows that, while entrepreneurship levels are comparatively low in all post-communist economies included in the dataset, they are even lower in Russia, where the institutional environment was particularly constrained. In addition, the paper suggests that strong ties between businesses and state administration in the Russian economy may provide greater opportunities for existing entrepreneurial insiders than for newcomers trying to establish a new venture. Complementing Parker’s work, Aidis, Estrin and Mickiewicz suggest that in the case of Russia, the weakness of institutions is detrimental to entrepreneurial activity and that, though networks are important, they are not entirely able to offset these deficiencies. The paper shows that in countries like Russia, networks are more common than in western economies but that, most often, they do not complement markets but rather substitute for them creating significant transaction costs.

The third pair of papers deals with how entrepreneurship influences the economy. Roy Thurik, Martin Carree, André van Stel, and David Audretsch deal with the long-standing puzzle concerning the dynamic relationship between self-employment and unemployment rates. Although entrepreneurship and self-employment is not the same thing, self-employment is often used as a way to operationalize empirically the contribution of entrepreneurship to macro-economic activity. Within this context, Thurik, Carree, van Stel, and Audretsch provide a simple mathematical model and empirical evidence reconciling the two alternative views that have characterized the literature on this topic so far. One view suggests that being unemployed or having poor prospects of employment encourages self-employment. The alternative view suggests that entrepreneurship, by creating new firms, contributes to the reduction of unemployment. Thus, while the first view suggests a positive relationship between entrepreneurship and unemployment, the second view suggests a negative relation.

Explicitly modelling self-employment and unemployment within the context of a simultaneous relationship, this paper uses a rich set of data for OECD countries to show that the relationship between unemployment and self-employment is, in fact, both negative and positive. Changes in unemployment are shown to have a positive impact on subsequent changes in self-employment rates. These changes in self-employment rates, in turn, are shown to have a negative impact on future unemployment rates. The paper contributes to existing literature by showing how, by neglecting the dynamic inter-temporal nature of these relationships, previous studies have confounded what are, in fact, two linkages working in opposite directions and with different time lags.

Finally, in the last paper, David Audretsch, Werner Bonte and Max Keilbach highlight the central role played by knowledge-based entrepreneurship on economic performance. Specifically, they argue that innovative entrepreneurs, by discovering and investing in opportunities given by new technical knowledge, are essential to the process of knowledge diffusion. They present a simple conceptual model and test it using a sample of German counties. Their results support the hypothesis that the innovation efforts of firms lead to an increase in regional technical knowledge which, in turn, improves local economic performance. In addition, regional innovation efforts are shown to increase entrepreneurship capital which, in turn, also increases regional economic performance albeit indirectly.

The results by Audretsch, Bonte and Keilbach help explain why regions with high R&D expenditures do not necessarily show a stronger economic performance. In fact, while some countries may have high investments in knowledge generation, they may be comparatively weak in commercializing that new knowledge and transforming it into economic growth (Minniti and Lévesque, forthcoming). Overall, the paper shows that, although necessary, knowledge spillovers are not sufficient, and that positive economic growth depends also on the amount of local entrepreneurial capital. In other words, on the capacity of a region, city or state to not only encourage entrepreneurs, but actually support them as they progress along the process of new venture creation.

6. Conclusion

This article provided a brief review of recent advances in the economics of entrepreneurship, put them in the greater contexts of the entrepreneurship literature, and explained how the contributions presented in this special issue of JBV
fit and contribute to our knowledge of entrepreneurship. The review does not pretend to be comprehensive. Specifically, given the focus of the special issue, only works with a strong focus in economics and published very recently were included.

Nevertheless, our brief survey shows that many questions are still open for discussion and that many opportunities for further research exist in a variety of areas. Why do individuals perceive themselves and the entrepreneurial environment so differently across countries, gender and, in some cases, ethnic groups? Are potential entrepreneurs more prone to specific types of bias? What is the effect of family composition and resources on the choice to start a business? How do entrepreneurs learn? Are entrepreneurial teams important? Is participation in a formal or informal network beneficial to entrepreneurs? Is the demographic distribution of the population important for entrepreneurship? What constitutes an entrepreneurial firm? These are just a few examples of possible topics open for further investigations.

Many of these issues have also very important implications for entrepreneurs and policy makers interested in fostering entrepreneurial activity. For example, to what extent are differences in individual perceptions influenced by culture, institutions, or public policy? How do changes in institutions and public policy influence entrepreneurial activity and the way people perceive their individual prospects? To what extent is entrepreneurship a real engine for economic growth? And are some types of entrepreneurial activity more important for growth than others? We hope this special issue will open new discussions, generate some interesting research questions, and pave the road to new cross disciplinary synergies.

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