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INTRODUCTION TO THE ENTREPRENEURSHIP SPECIAL ISSUE

PER BYLUND

The Austrian school of economics has been all but left by the wayside in economics (e.g., Backhouse 2000). This fate, shared with all “heterodox” approaches that do not fully comply with mainstream dogma, means Austrian theory is at best discounted by other economists. More often, and typically, it is forgotten and a relic of the past.

At the same time, Austrian economics is the *only* school of economic thought that is well represented in the study of entrepreneurship (e.g., Dahlqvist and Wiklund 2012; Korsgaard, et al. 2016; Packard and Bylund 2018).¹ Austrian theories, concepts, and perspectives on entrepreneurship make up an important part of what is modern entrepreneurship theory (Klein and Bylund 2014).

Although the former is as unfortunate as the latter is exciting, it is not impossible that they have the same cause. Austrian theory, focusing on understanding (not predicting) the dynamics of and emergent phenomena in the market process, conceived as an entrepreneurially driven (Mises [1949] 1998), production-based (Böhm-Bawerk [1889] 1959) discovery procedure (Hayek 1978), is undoubtedly well suited as a framework for studying all aspects of

¹ A similar argument can be made for related fields such as theory of the firm and strategy (e.g., Ioannides 2002; Jacobson 1992; Roberts and Eisenhardt 2003; Young, Smith, and Grimm 1996).



entrepreneurship as uncertainty-bearing value creation (Hastings, D’Andrea, and Bylund 2019). Mainstream economics, seeking to mimic the reliability of empirical physics, has taken great pains in attempting to exclude the dynamism of the market process from its theoretical models (e.g., Baumol 1968). As a result, modern economics is barren and generally lacks insight into what gives life to what older generations of economists sometimes referred to as the “economic organism” (Bylund and Bylund, forthcoming).

Economics without entrepreneurship is a twentieth-century idea. Joseph A. Schumpeter, schooled in the Austrian tradition but later enamored by the promise of formalized (if not mathematized) Walrasian analysis, early recognized this core flaw of the modern economic approach. In *Capitalism, Socialism and Democracy*, Schumpeter identified the free enterprise system’s constant regeneration through “industrial mutation...that incessantly revolutionizes the economic structure *from within*, incessantly destroying the old one, incessantly creating a new one” (1947, 83). This creative destruction, he noted, is capitalism’s essence, which modern economics has all but expunged—yet is impotent without. Writes Schumpeter:

a theoretical construction which neglects this essential element of the case [entrepreneurship] neglects all that is most typically capitalist about it; even if correct in logic as well as in fact, it is like *Hamlet* without the Danish prince. (Schumpeter 1947, 86)

In contrast, entrepreneurship scholarship focuses on the prince along with the royal family but tends to neglect the remainder of the play and its characters. It should therefore be unsurprising that Austrian economic theory, in which the entrepreneur is the main character in the full play, is a valuable framework and inspiration. Indeed, the entrepreneurial opportunity, a core concept in modern entrepreneurship theory (Venkataraman 1997; Shane and Venkataraman 2000; Shane 2003; see also Dempster’s article in this issue), was originally formulated based on the entrepreneurship theories of Schumpeter ([1911] 1934) and Kirzner (1973). More recently, as the opportunity construct has become increasingly questioned (e.g., Foss and Klein 2020), the judgment-based approach (Klein 2008; McMullen 2015; Foss, Klein and Bjørnskov 2019), based in part on the entrepreneurship discussions of Mises ([1949] 1998) and Lachmann ([1956] 1978), has emerged as an important alternative.

It is safe to say, then, that Austrian economics remains an important perspective in the modern study of entrepreneurship. Yet while entrepreneurship scholars often take inspiration or even borrow from Austrian economics, the reverse is scarcely true. Even so, there is reason to believe both sides would benefit from more interaction and collaboration (for a recent but limited example, see Elert and Henrekson 2019). Austrian theory was largely developed prior to and beyond the reach of, and has therefore been unaffected by developments in, the entrepreneurship literature. This means that new findings and theoretical advances, as well as novel approaches and questions, that could contribute to the further development of the Austrian corpus may remain undiscovered. Similarly, entrepreneurship theory, which to date includes a number of interesting perspectives but lacks a firm core set of assumptions or theories, could benefit from considering, incorporating, or even adopting Austrian theorizing more broadly—as a framework, structure, or theoretical basis.

The aim of this special issue is to facilitate a synergistic discussion between Austrian economists with an interest in entrepreneurship theory and entrepreneurship scholars with an interest in the Austrian approach. Although we could perhaps go much further, the goal here is merely to begin building a bridge between the fields by creating an initial exchange of ideas, perspectives, and approaches to benefit both “sides.” The articles published in this special double issue contribute to this interdisciplinary exchange of ideas. Although they have different starting points, different aims, and utilize different perspectives and methods, they all address research questions and use methods that make them of interest both for scholars in the Austrian tradition and in the academic study of entrepreneurship.

The first article, “Turning the Word Upside Down,” by Mark Thornton, addresses the historical origins of the term *entrepreneur*. Going back to the early eighteenth-century, Thornton argues that an entrepreneur was traditionally understood as a government contractor, or someone operating with a known, predetermined revenue but unknown future costs. As one would expect, these entrepreneurs were known for cutting corners and underdelivering, as they themselves would benefit from keeping costs down. But the meaning of the word was turned on its head thanks, largely, to the writings of one man: Richard Cantillon ([1755] 2010). With Cantillon’s masterful treatise, the entrepreneur was given the very

opposite meaning, similar to how we would today view entrepreneurs: as someone who deals with known costs but unknown future revenue. Thornton traces the influence of Cantillon and how the term changed meaning in dictionaries, among leading economists, and then in common usage.

Randall Westgren's article, "Carl Menger's *Grundsätze* as a Foundation for Contemporary Entrepreneurship Research," revisits insights from the Austrian school's founding with Carl Menger's groundbreaking *Principles of Economics* ([1871] 2007). Westgren finds in Menger's observation that value is subjective an important yet missing piece of the puzzle in entrepreneurship theory. Thus, by formalizing Menger's hierarchy of needs, he creates a model of strategic entrepreneurship that fills this important gap and ties together insights from consumer behavior, marketing, and organizational psychology.

In "Austrian Economics and Organizational Entrepreneurship: A Typology," Sara Elias with coauthors Todd Chiles, Qian Li, and Fernando D'Andrea develop a typology to assist organizational scholars in applying core Austrian insights. They develop four distinct perspectives—equilibration, punctuated equilibrium, disequilibration, and punctuated disequilibrium—that distinguish different strands of Austrian economics in relation to entrepreneurial production and change. The article provides useful background on how these perspectives differ with respect to ontological, epistemological, and methodological assumptions, and illustrates their applications in organizational research.

In the fourth article, "Finding the Entrepreneur-Promoter: A Praxeological Inquiry," Per Bylund addresses the Misesian conception of the entrepreneur-promoter and offers a means to define this distinct type of entrepreneur praxeologically. Applying the imaginary construction developed in *Problem of Production* (Bylund 2016)—the "specialization deadlock"—he provides a theoretical distinction between entrepreneurship in general (the uncertainty-bearing function; Mises [1949] 1998) and the promoter as the driving force of the market. The promoter is then defined theoretically as the function of establishing specialized production beyond what the market's existing division of labor supports. In other words, promoters implement productive innovations beyond the extent of the market.

Mark Packard's "Autarkic Entrepreneurship" addresses a different dimension of Austrian entrepreneurship theory and attempts to break new ground in a different direction. He argues provocatively that the entrepreneurial function is not limited to the catallactic (exchange) economy but is also an important part in, and necessary to understand, the autarkic or do-it-yourself economy. Arguing that catallaxy and autarky, as alternative courses of action, are substitutes, complements, and even competitors, Packard extends Austrian economic theory into the realm of the personal economy.

In "Why (a Theory of) Opportunity Matters: Refining the Austrian View of Entrepreneurial Discovery," Gregory Dempster adds to existing entrepreneurship theory by producing an argument in defense of the entrepreneurial opportunity concept. Retaining essential elements of Kirzner's (1973) original theory, Dempster reinterprets opportunity as an intersubjective phenomenon that emerges from entrepreneurial discovery and judgment. The paper thereby, in the words of the author, "places opportunity back in the limelight as a central concept for understanding the causes and effects of entrepreneurship" (p. 429).

"Entrepreneurial Empowerment: You Are Only as Good as Your Employees," by Desmond Ng, develops the concept of entrepreneurial empowerment to explain how entrepreneurs can overcome their venture's internal Hayekian knowledge problem. Ng argues that entrepreneurial success can be explained not only by the entrepreneur's original ideas but also (and, perhaps, more importantly) by their ability to inspire others within the organization. Specifically, by empowering employees to make use of their local and tacit knowledge, the entrepreneur can establish a discovery process within the firm in which employees' unique knowledge can contribute to the vision and goals of the organization.

In the eighth article, "A Dynamic Model of Entrepreneurial Opportunity: Integrating Kirzner's and Mises's Approaches to Entrepreneurial Action," Alexander McKelvie with coauthors Johan Wiklund, Jeffrey McMullen, and Almantas Palubinskas present two longitudinal case studies to inductively drive the argument that time is important in entrepreneurship. The authors argue that the passing of (objective or clock) time increases the likelihood of market data change, thus requiring entrepreneurs (and entrepreneurship

theories) to adopt a dynamic temporal perspective in which opportunity beliefs are updated. With this important identification, they seek an integration of Kirzner's alertness to opportunity and Mises's focus on entrepreneurial action.

Daniel Leunbach and coauthors Ekaterina Bjørnåli and Truls Erikson present an empirical analysis of subjectivism on the interpersonal or group level. "A Subjectivist Approach to Team Entrepreneurship" studies the team dynamics in 124 high-tech start-ups and finds that positive internal and external team dynamics, as subjectively assessed by the entrepreneurs, contribute to the effectiveness of the team. Their study presents a first attempt to measure the effects predicted by the subjectivist approach to team entrepreneurship.

Finally, "Institutions and Entrepreneurship: Pushing the Boundaries," by Scott Burns and Caleb Fuller, recognizes the central role that institutions play in both new institutional economics (NIE) and Austrian economics and suggests how the approaches complement each other. Focusing specifically on Austrian insights regarding subjectivism, entrepreneurship, and capital, the authors argue that there are gains from theoretical trade between the disciplines. Specifically, they find that the Austrian perspective can improve the NIE understanding of institutional evolution as well as contribute to explaining observable within-country variation in entrepreneurship and production.

Combined, these ten articles cover a broad set of issues and adopt a multitude of perspectives on both how Austrian economics can be used in entrepreneurship scholarship, how entrepreneurship scholarship can lean on Austrian economic theory for further refinements, and how entrepreneurship scholarship provides direction for further theorizing in Austrian economics. There are many reasons to be optimistic about research within this gap, which is perhaps better understood as a phenomenal, conceptual, and theoretical overlap, between the fields. But there are also differences that should be acknowledged. For example, Austrian economics is a deductive, theory-first framework that seeks truth rather than testable hypotheses. Although empirical research is important, it is not used as a means for theorizing but rather to illustrate and apply theory. Meanwhile, entrepreneurship research typically follows the standard model of research in which theory is used to generate testable hypotheses that, if supported, may eventually be incorporated into the larger corpus of scientific explanation. This

suggests that entrepreneurship may be more open to borrowing from Austrian economics than the other way around, as history has already shown (Klein and Bylund 2014). But Austrian economics would still benefit greatly from seeing its concepts applied and subjected to empirical analysis (even though Austrians would refer to this task as history or thymology, not theory development [Mises (1957) 2007]).

The articles in this special issue attempt all of the aforementioned tasks. They thereby indicate directions for future research within Austrian economics, in entrepreneurship, and where the fields overlap. They also address directions for further expansion beyond the present boundaries of Austrian economics and entrepreneurship theory. This double issue includes articles that open new lines of thinking for Austrian economists with an interest in entrepreneurship as well as for entrepreneurship scholars with an interest in Austrian economics. These articles, each in its own way, are the building blocks needed to give shape to a bridge that facilitates new collaborations and exchanges—perhaps even friendships. Regardless of what may come of this special issue, scholars on both sides should find the bridge well worth traveling.

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TURNING THE WORD UPSIDE DOWN: HOW CANTILLON REDEFINED THE ENTREPRENEUR

MARK THORNTON*

JEL CLASSIFICATION: B11, B31, B41, D81, L24, L26

ABSTRACT: The word *entrepreneur* originally meant someone who is active, risky, and even violent. In the sixteenth and seventeenth centuries it was used to denote a contractor who built large structures and fortifications for the government or provided supplies for the military for a contracted price but largely uncertain future costs. In contrast, Cantillon (1755) defined the entrepreneur as someone buying goods and resources at current market prices to be sold in the future at uncertain prices. His definition was adopted by the leading French economists of the time, and as a result it eventually became the common usage of the term, as will be seen in a sample of French dictionaries over time. In this remarkable and largely unrecognized transformation, Cantillon essentially turned the word upside down. Cantillon's entrepreneur was self-regulating on the basis of profit and loss, and thus became the foundation on which he was able to construct theories and models of the market economy, which we know as economic theory. His definition is essentially that of Frank Knight and Ludwig von Mises, so it has important implications for the development of the Chicago and Austrian schools of economics.

I. INTRODUCTION

A central question regarding the concept of entrepreneurship in both the academic literature and public discourse remains

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the meaning of the term. It is now generally accepted that Richard Cantillon (1680–1743) first introduced the entrepreneur into the economics literature. Since that time the meaning of the term has undergone many changes and the list of duties, roles, and traits of the entrepreneur has grown ever longer. There are even archetypal forms, such as the grand Schumpeterian entrepreneur and the ever-elusive Kirznerian entrepreneur. However, the most important and dramatic change in the meaning of *entrepreneur* occurred nearly three centuries ago.

This is when, circa 1730, Cantillon is said to have first introduced the term. However, before that time, the word *entrepreneur* existed and had very different meanings. Most prominently it referred to someone who worked for the government as a private contractor. This government contractor, or what we might call a political entrepreneur,¹ would typically bid on building a structure for the government and would thus have predetermined revenues, but uncertain future costs. Cantillon redefined the entrepreneur to be any individual who bought goods or resources at current market prices to be sold in the future at uncertain prices. So, his meaning switched the term from a political to a market orientation. It should be noted that Cantillon had extensive experience as both a government contractor, or political entrepreneur, and as a market entrepreneur.

Cantillon's new meaning turned the concept of the entrepreneur upside down. The focus shifted dramatically from the public sector to the private sector. The functional concepts of the nature and sources of uncertainty are now their opposites. From being few in number, entrepreneurs are now ubiquitous in society. The customer, formerly the government, is now the general public, including the government. Most importantly, the government's various problems with contract bidding and management are now largely swept away by the invisible hand of competitive markets.

Turning the concept of the entrepreneur upside down created what has become the most generally accepted meaning of the term: someone in private business, trading in the marketplace, and

¹ A political entrepreneur is someone in business who seeks to profit from government contracts, subsidies, and various forms of protectionism, such as tariffs, through political influence. It is a necessary aspect of corporate welfare, or what is now referred to as cronyism.

uncertain of profit or loss. In doing so, Cantillon took an ordinary noun, redefined it, and created a theoretical concept that is still very much in use today. More than just a term, Cantillon's entrepreneur provides the conceptual mechanism that automatically regulates market behavior and thereby provides the foundation for the theoretical constructions presented in his book, *Essai sur la nature du commerce en général* (circa 1730, published in 1755), which in turn became the foundation of theoretical economics.²

It is now well established in the economics and entrepreneurship literatures that Cantillon was the first to introduce the term *entrepreneur* as a functional economic concept. The word had previously existed, but it had a different meaning. He radically transformed it. It will be shown that many of the economists who were directly or indirectly influenced by Cantillon adopted his conception and helped disseminate the new meaning. A sample of French dictionaries will be reviewed to demonstrate the change in meaning and the timing of that change, which later became the commonly accepted definition.

The second section chronicles the evolution of the word *entrepreneur*, while the third section traces these developments in French dictionaries. The fourth section explains that the adoption of Cantillon's concept by leading French economists, even prior to the publication of his *Essai* in 1755, helped spread the new meaning, eventually, into common usage. The fifth section concludes.

II. THE EVOLUTION OF THE TERM ENTREPRENEUR

According to Redlich (1949, 1), the term *entrepreneur* evolved from the French word *entreprendre*, which refers to someone who undertakes an activity, is active, or gets things done. According to Hoselitz (1951, 235), by the sixteenth century the term was used to refer to people who were engaged in "some violent warlike action." By the seventeenth century the term was used more generally to refer to people who take on risk—not merchants and manufacturers, but contractors who build large infrastructure projects for the

² See Brown and Thornton (2013) for examples of why entrepreneurship is essential for economic theory.

government or the church, or who provide supplies to the military. Thus, the entrepreneur of this time was a military or government contractor-entrepreneur, or a political entrepreneur who works for a contracted price. Hoselitz (1951) also notes that in the legal literature of this period the entrepreneur is a government or military contractor. He also points out that the term was sometimes used to refer to explorers and colonizers, where the “violent warlike action” concept is combined with the government contractor concept. So, the original conception was largely political.

According to Hébert and Link (1988, 16) the classic case of the government contractor-entrepreneur is the tax farmer. On the one hand, the tax farmer is more like an entrepreneur, in the modern sense, than a government contractor, because he is someone who bids on the right to collect taxes in a certain jurisdiction for a given period of time, for a fixed fee, but is uncertain how much he can collect. A profit occurs if tax collections exceeded the amount of the bid. On the other hand, the tax farmer is more like a government contractor than a market entrepreneur, because the incentives of this ancient system often led tax farmers to be corrupt and to abuse taxpayers in various ways, such as undervaluing the goods collected as tax payments. This was the shame of Matthew, the tax farmer-turned-apostle of Jesus.

The ultimate statement of the entrepreneur as government contractor occurred in Bernard F. de Bélidor’s *La science des ingénieurs* (1729). Bélidor was a prominent French engineer and his book was a leading textbook for engineers. He was elected a fellow of the Royal Society in 1726. Later he would be the first person to use integral calculus for solving the technical problems of hydraulics. A street in Paris was named after him in the nineteenth century. According to Bélidor, in contrast to Cantillon’s market entrepreneur who is self-regulating due to the system of profit and loss, the government contractor-entrepreneur is devious and undependable and must be subject to government oversight and regulation.³

Hoselitz (1951, 240) finds that Bélidor’s view of the entrepreneur was the “exact counterpart” to Cantillon’s entrepreneur in that the former’s entrepreneur is a government contractor who sells at a

³ See Gupta et al. (2001) on the corrupt nature of political entrepreneurs.

contracted price but has uncertain input prices in the future, while Cantillon's buys inputs at market prices and sells goods at uncertain prices in the future. Technically, both types of entrepreneurs risk losses, but more importantly, the nature of their risk is different and their incentives and behavior differ as well. Ekelund and Price (2012, 54) concluded that the different approaches resulted in "two different types of competition." According to Bédidor, the government contractor is always cutting corners and undermining quality and safety to cut costs in an effort to make a profit, whereas the market entrepreneur has to be more concerned about quality, safety, and reputation, i.e., long-run profit maximization. The critical difference is that Bédidor's political entrepreneur is likely undependable and in need of oversight, while Cantillon's entrepreneur is more dependable and self-regulating, and therefore can serve as a capable basis for economic theory and a self-regulating market economy. The concept of a self-regulating economy was largely unknown prior to Cantillon.

Bédidor's book was published in Paris in 1729 just prior to when scholars believe Cantillon was writing and finishing his own manuscript. Murphy (1986, 246) presents evidence which suggests that the manuscript was being written from 1730–31 and was completed sometime before Cantillon's death in 1734. There is no evidence that Cantillon knew or read Bédidor, but based on the contents of the *Essai* we can say that he was widely read in scientific matters. The men were contemporaries, and both were minor celebrities of the time. As a former government contractor, as well as a banker and investor in real estate, the widely read Cantillon would have been interested in the contents of Bédidor's book. Therefore, we cannot discount the possibility that Cantillon was aware of and possibly read it.

Bédidor's book would have been a sharp point of departure for Cantillon. Cantillon's ubiquitous entrepreneur would have contrasted sharply with Bédidor's conniving and untrustworthy government contractor-political entrepreneur. Conceivably, the text may have even provided some inspiration for Cantillon as a contrast for how he defined his entrepreneur. The most definitive consideration, however, is that the entrepreneur, as a government contractor, or political entrepreneur, was *the* well-established concept circa 1730.

III. REDEFINING THE ENTREPRENEUR

The changing definition of *entrepreneur*, from the government contractor or political entrepreneur of Bélidor to the ubiquitous private sector entrepreneur, can be seen over time in French dictionaries. The sample of French dictionaries from the seventeenth to twentieth centuries, available online at the ARTFL Project of the University of Chicago, were consulted and translated for this purpose.⁴

According to Jean Nicot's dictionary, *Thresor de la langue francaise: Tant ancienne que moderne* (1606), the word *entrepreneur* referred to a *susceptor* or *redemptor*, with *susceptor* referring to a person who undertakes some role, especially the guardianship of another, while *redemptor* referred to someone who works as a contractor. This early seventeenth-century dictionary entry therefore provides the very general notion of any undertaking, including caretaking and contracting that benefits others.

At the end of the seventeenth century, the *Dictionnaire de L'Académie française* (first edition, 1694) indicates that the entrepreneur is someone who undertakes large construction projects for a specified price. Later, in the fourth edition (1762), the *Dictionnaire* defined the entrepreneur as a contractor who undertakes substantial projects, such as building fortifications, bridges, or paving city streets. The fifth edition (1798) and sixth edition (1832–35) describe the same thing, although the sixth gives an example of an entrepreneur in the production of textiles. Jean-Baptiste Say (1767–1832), who was long credited with introducing the term in this period, owned a textile factory. The eighth edition (1932–35) also broadened the definition to include contractors of all sorts. The *Dictionnaire* notes that when the term is used in the feminine it explicitly refers to a textile manufacturer. Hence, the term *entrepreneur* evolved from indicating someone who is very active to a government contractor or political entrepreneur, and then into the prototypical modern market entrepreneur over this period.

In Jean-François Féraud's *Dictionnaire critique de la langue française* (Marseille, 1787–88), the entrepreneur was not mentioned, but *entrepreneurant* (the adjective “enterprising” or the verb “undertaking”)

⁴ ARTFL Project, <https://artfl-project.uchicago.edu/content/dictionnaires-dautrefois>.

was defined as bold business behavior. Émile Littré's *Dictionnaire de la langue française* (1872–77) also indicated that the term was used to denote a contractor or someone who undertakes a business project. Littré's *Dictionnaire* in particular referenced Étienne Bonnot de Condillac and Jean-Baptiste Say, whose work generalized and broadened the definition of the entrepreneur to include manufacturing, banking, farming, and trade, and even designated *entrepreneur* as a term from political economy.

This is important because, as Thornton (2009a) shows, Condillac (1997, 134n) was heavily influenced by Cantillon. In a rare footnote, Condillac heaps high praise on Cantillon:

I have drawn the basis of this chapter from this work [*Essai sur la nature du Commerce*, Cantillon, 1755] and several observations of which I have made use in other chapters. It is one of the best works I know on this subject, but I am far from knowing them all.

Condillac follows Cantillon on many economic concepts and phenomena, but rarely excels beyond him. For example, on interest and usury he follows him quite closely only to admit, contra Cantillon, that some very high rate of interest, unspecified, might qualify as usury. The entrepreneur for Condillac is restricted to the commercial entrepreneur, farmers, and large undertakers of every kind, but he fails to extend the term to Cantillon's ubiquitous uncertainty bearer.

Thus, the definition of the entrepreneur changed from the imprecise meaning of a risky person in the sixteenth and seventeenth centuries to become a government contractor, or political entrepreneur, in the seventeenth and eighteenth centuries, before coming to represent any person engaged in some form of business activity after the late eighteenth and early nineteenth centuries. The actual evolution of the word is much more complicated and inexact. Hélène Vérin (1982) describes this complex historical evolution; however, when Vérin (2014) distills it into a comprehensible synopsis, a very similar story emerges.

The concept evolved alongside the progression from precapitalistic times toward the heyday of European colonialism and war, and toward the emergence of capitalism and the Industrial Revolution. The most basic change that occurred over this evolution is

that the subject changed from a political entrepreneur to anyone who engages in a private business, including farming, manufacturing, and trade, in which there is uncertainty about future market prices. Landström (2010, 9–10) chronicles a comparable transformation of the English term *undertaker* along a similar timetable.

IV. HOW CANTILLON'S CONCEPTION SPREAD

The evidence tracing the changing meaning of the entrepreneur does find Cantillon at the historical pivot prior to the new meaning gaining widespread acceptance and usage. The most knowledgeable scholar on the subject, Murphy (1986, 246) believes that Cantillon completed the *Essai* in manuscript form around 1730, although it was not published until 1755. So, how would the redefinition by an obscure anonymous writer spread to eventually become accepted usage?

The acceptance of Cantillon's concept of the entrepreneur was due to his influence on subsequent writers. Most notably, the popular writer Mirabeau the elder had a manuscript copy of the *Essai* for fourteen years prior to its publication in 1755. Likewise, the famous dictionary publisher Malachy Postlethwayt drew on the *Essai* both prior to and after it was published. Also, Murphy (1986, 308) shows that Vincent de Gournay, a leader of the Physiocrats, must have read it before it was published.

One of the first noteworthy uses of Cantillon's concept of the entrepreneur as the leader of a private business appears in the famous reference work of the period Diderot and d'Alembert's *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*, published from 1751 to 1772. In an article written by a leader of the Physiocrats, François Quesnay (Gendzier, ed. 1967, 814), on the topic of "grains" Cantillon's entrepreneur is interwoven with the social vision of the Physiocrats:

We do not now look upon the rich farmer as a worker who personally tills his land. He is an entrepreneur who administers and increases the value of his enterprise by his intelligence and wealth. Agriculture managed by rich cultivators is a very honest and lucrative profession, reserved for free men who are in a position to advance a considerable outlay of money required for the cultivation of the land that provides

work for the peasants and always procures for them satisfactory and assured earnings. These are, in the opinion of M. de Sully, the true farmers or the true financiers whom we must create and support in a kingdom possessing enormous territory, because it is from their wealth that must arise the sustenance of the nation, public affluence, the revenues of the sovereign, those of landowners, of the clergy, great expenditures distributed to all the professions, a large population, and the power and prosperity of the state.

Quesnay was the leader of the Physiocrats and the school's chief theoretician. He described the farmer not as a field hand or supervisor, but rather as an "entrepreneur who governs and manages his enterprise by his intelligence and his wealth" (Gendzier ed. 1967, 814). Higgs (1897, 30–31) reminds us that Quesnay explicitly references Cantillon's "fundamental truths" in this article. Cantillon biographer Antoin Murphy (1986, 307–08) concludes that the group associated with Vincent de Gournay and Quesnay was responsible for the publication and promotion of Cantillon's *Essai* in 1755.

Condillac, whom Émile Littré's *Dictionnaire de la langue française* (1872–77) references on this topic, also viewed the farmer as an entrepreneur who oversaw cultivation and supervised those who carried out the work. Whereas previously farmers had not been thought of as entrepreneurs in any sense, now the entrepreneur was seen as being in "each profession," including farming and manufacturing. Condillac ([1997] 1776, 147) points out that all types of entrepreneurs conduct their business at risk of failure:

Indeed, an entrepreneur can only maintain his trade in so far as the money, with which he makes advances, comes back continuously to him with a return in which he finds his subsistence and that of the workers he employs, that is to say, a wage for them and a wage for him.

Condillac also examined factors that increase and decrease the number of entrepreneurs. His discussion occurred in a chapter on interest and usury, a placement that according to Redlich (1949, 6–7) was not common before or after this time. This placement also suggests the influence of Cantillon, who had a similar but longer treatment of this issue in his famous chapter on interest and usury in the *Essai*. As shown above, in a footnote in his own chapter Condillac (1776 [1997], 134) acknowledged that he was heavily influenced by Cantillon.

Another significant economist with connections to Cantillon was Anne-Robert-Jacques Turgot. According to Hébert and Link (1988), Turgot referenced Cantillon and followed him on a large number of issues, but the strongest influence is indirect, from Quesnay, Gournay, and other Physiocrats. For example, in agriculture, manufacturing, and any other field of production Turgot, like Cantillon, said that there are two basic classes of producers in society: the entrepreneurs and the hired wage workers. Turgot's theory of entrepreneurship is often thought to be more advanced than, or at least different from, that of Cantillon (Rothbard 1995, 395) because the former's focus was on the more Schumpeterian leading capitalist-entrepreneurs while Cantillon's entrepreneur was ubiquitous in the marketplace.

The capitalist-entrepreneur must first accumulate saved capital in order to advance payments to laborers while the goods are being produced. Turgot pointed out that advances of capital are vital in all enterprises. It makes no difference whether such savings are supplied by someone else or by the entrepreneurs themselves. For example, in agriculture, capitalist-entrepreneurs must save funds to pay workers, buy cattle, and pay for buildings and equipment until their crops are harvested. Only after the harvest can they sell the crops and recoup their advances and possibly make a profit. The same process occurs in manufacturing and in every field of production. Entrepreneurs seek to gain profits and to avoid losses.

However, Brown and Thornton (2013) show that Cantillon did not ignore the capitalist-entrepreneur in the least. Indeed, the capitalist is completely integrated into Cantillon's theory of entrepreneurship. Either the entrepreneur provides his own resources or he borrows them, in which case the lender, not the banker, also becomes a kind of entrepreneur in Cantillon's approach because of the risks, not uncertainty, of return. The lender manages these risks by either requiring collateral, only dealing with known dependable borrowers, or in the case of high-risk borrowers by charging high rates of interest to a large number of such customers, so that by playing the percentages the lender is neither fully enriched or bankrupted by defaults. This fits perfectly well with the approach of Frank Knight and Ludwig von Mises. In the final analysis,

Cantillon's entrepreneur includes the capitalist-entrepreneur.⁵ Turgot and Cantillon also share the insight that entrepreneurs will only invest in risky enterprises if they expect greater profits than the loan rate of interest. They both emphasized uncertainty as an important aspect of entrepreneurship. Therefore, Turgot, like Quesnay and Condillac, had many views in common with Cantillon, accepted many of his views on entrepreneurship, and subsequently helped disseminate Cantillon's basic definition of entrepreneurship, both through his own writings, textbooks, and through popular reference works.

Scholars, at least up through Cole (1942, 120), had long mistakenly thought that Jean-Baptiste Say introduced the term *entrepreneur* into economics. It was Schumpeter (1954, 222), writing that "nobody before Cantillon had formulated it so fully," who corrected the historical record when he found that Cantillon was the first to have a clear conception of the entrepreneur as one who makes purchases at current prices but sells in the future at uncertain prices, and who therefore risks losses in pursuit of profits.

According to Say (1971, 83), entrepreneurs use their "industry" to organize and direct the factors of production to achieve the "satisfaction of human wants." Instead of being merely managers, entrepreneurs are forecasters, project appraisers, and risk takers as well. Like Turgot, Say saw that entrepreneurs use their own financial capital or borrow it from others to advance funds toward labor, raw materials, and capital goods. Entrepreneurs only recoup these payments if they succeed in selling their products to buyers at prices that exceed costs.

For Say, entrepreneurial behavior embraces several kinds of economic activities, such as planning, organization, supervision, innovation, and the supply of capital. He therefore added various aspects of entrepreneurship to Cantillon's general theory. Say's approach is very modern in the sense that modern entrepreneurship scholars rely on both a general definition of the entrepreneur as an uncertainty bearer but are also very interested in the additional features, roles, and characteristics of entrepreneurs that contribute to their success or failure.

⁵ Cantillon does hold that a penniless beggar is an entrepreneur, but this is not the resourceless Kirznerian entrepreneur, because the beggar must contribute his time to beg money and food.

For example, Salerno (2018, 193) shows that Rothbard developed the concept of a “decision-making rent” as a return on a kind of labor performed by the entrepreneur as owner and ultimate decision-maker that could otherwise not be hired by the firm. This rent to the owner is separate from profit and loss. It is a function that is concerned with the “productive organization and technique, which is distinct from the function of forecasting uncertain future market conditions.” Decision-making, however, is a necessary aspect of entrepreneurship, while many of the features of entrepreneurship studied by modern scholars are not necessary ones but are merely highly correlated with successful entrepreneurs.

Comparing the two approaches to entrepreneurship, Say provides a more elaborate description of what an entrepreneur does, similar to the modern understanding. However, this approach also deflects our attention from uncertainty bearing, and Hébert (1985) finds no evidence that Cantillon regarded any of these additional features as fundamental to the entrepreneur. Say also narrows the scope of entrepreneurship to manufacturing which was a common theme of the time due to the emergence of the Industrial Revolution.

Hoselitz (1951) finds that Say’s theory of the entrepreneur cannot be tangibly connected with Cantillon’s and concludes that Say’s theory represented a retrogression from Cantillon and the Physiocrats. However, Schumpeter (1954, 222) draws our attention to a connection between Cantillon and Say: “Though there is nothing to show that he actually influenced J. B. Say, it is none the less true that ‘objectively’ his performance on this point...is the link between the two.” Of course, we do know that Say was influenced by the Physiocrats and that the Physiocrats were heavily influenced by Cantillon. Additionally, as Salerno (1985) finds, Say was possibly influenced by Cantillon, particularly on methodology, and both Cantillon and Say modeled the economy as a mechanism regulated by entrepreneurship.

IV. CONCLUSION

This historical theme of connections and influences is complex, but the main points seem clear: 1. The original meaning of the word was different from modern usage and referred to government

contractors or political entrepreneurs as late as 1729. 2. Cantillon used the term circa 1730 to refer to a market entrepreneur acting under uncertainty. 3. French dictionaries chronicle the replacement of the original definition with Cantillon's over time. 4. Influential French economists spread Cantillon's new meaning and brought it into common usage. Most significant for our purposes here is that although Say had a more elaborate view of the entrepreneur than did Cantillon, the *Dictionnaire* quotes Say only on Cantillon's narrower view of the entrepreneur.

Cantillon redefined the entrepreneur, transforming him from a government contractor or political entrepreneur who works for a contract price and has uncertain future costs into a pervasive one who purchases inputs at market prices only to make sales in the future at uncertain market prices. The element of uncertainty creates the potential for profits and losses, great riches and bankruptcy. Cantillon used this conception of the role of the entrepreneur as uncertainty bearer to great effect in creating an economic theory of the market economy (Thornton 2007, 2009b, Brown and Thornton 2013). Economists such as Mirabeau, Quesnay, Condillac, Turgot, and others adopted Cantillon's concept to great effect, and by the time of Jean Baptiste Say, it was considered common usage and was employed without further attribution throughout the next century.

Establishing the core meaning of entrepreneurship as uncertainty bearing in the pursuit of profit as the commonly understood one does not mean that the theory of entrepreneurship has remained static. Indeed, Hébert and Link (1988) remind us that there were many twists and turns, redirections, dry holes, and elaborations during the interlude between Say and modern theories. When more modern economists examined the concept of entrepreneurship, they gravitated back toward Cantillon without knowing of his existence. Beginning with Hawley (1907) and Davenport (1913) and ending with Knight (1921) and Mises (1949), the core theory of the entrepreneur returned to its origins in Cantillon. In turn, the latter two economists became founders of the Chicago school and the modern Austrian school of economics, respectively.

Of course, since that time there have also been some big new ideas in entrepreneurship theory, including the grand Schumpeterian entrepreneur and the ever elusive Kirznerian entrepreneur,

as well as what is analogous to a big bang in empirical entrepreneurship research and the establishment of entrepreneurship as a separate academic discipline. The core, however, remains in Cantillon's entrepreneur.

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CARL MENDER'S *GRUNDSÄTZE* AS A FOUNDATION FOR CONTEMPORARY ENTREPRENEURSHIP RESEARCH

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JEL CLASSIFICATION: B53, L26

ABSTRACT: This paper takes the subjective value theory, conception of economic goods, and the hierarchy of needs from Carl Menger's *Grundsätze der Volkswirtschaftslehre* (1871) to elaborate a model of strategic entrepreneurship. Menger's account of subjective valuation by buyers of goods in market exchange fills a gap in most conceptual approaches to entrepreneurship, which are based on a highly impermeable boundary around the entrepreneurial firm. We examine how this account "closes" an economic model of entry for an entrepreneurial firm in an existing rivalry network by making the assessment of value explicit with respect to buyer needs relative to goods sold by incumbent firms. A formal representation of Menger's needs hierarchy in the face of qualitatively different market goods is the centerpiece of the strategic entrepreneurship model. This conceptual model is tied to methods of eliciting subjective valuations of product attributes and buyer needs fulfilment from the literatures of consumer behavior, marketing, and organizational psychology. This serves as a methodological basis for scholarship in entrepreneurship.

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INTRODUCTION

Scholars in the field of entrepreneurship flail about, seeking a theory that serves as a foundation for erecting boundaries to keep the field distinct from other territories in management and economics and to exploit as a basis for empirical analysis. In 2003, Scott Shane introduced a hubristic *General Theory of Entrepreneurship*, which attempted a link between the individualistic/personality-based accounts of David C. McClelland (1965, 1987) and a recently minted construct: the entrepreneurial opportunity. Since the publication of this tome, the field has maintained a vigorous discourse over the nature of the opportunity. It is beyond the scope of this paper to recount this history (readers interested in replotting the field can consult Short, Ketchen, Shook, and Ireland [2010]); however, for scholars of Austrian economics, it is interesting to note that one of the fault lines in the literature is the dichotomy between Kirznerian and Schumpeterian opportunities (Shane 2003, 21). Shane takes the *idealtypus* of Schumpeter's innovative, disequilibrating entrepreneur and Kirzner's metaphoric alert, equilibrating entrepreneur, reifies them into *realtypus* entrepreneurs, then rereifies them as social objects: opportunities. Thus, two Austrian accounts of market processes are bent into psychological types, thence into the creation opportunity and the discovery opportunity (Alvarez and Barney 2007, 2010). Schumpeter and Kirzner have lost their place on the marquee, but their accounts of market processes remain as misapplied social objects to which entrepreneurial action is directed.

Fortunately, some scholars in the entrepreneurship field have sought to apply the theories and constructs from Austrian economics in a more apropos manner. It must be understood that these current contributions to the field may overlap with the theory of the firm (Bylund 2015; Foss and Klein 2012), strategic management (Foss and Lyngsie 2014), and market processes (Bylund 2011). The boundary walls for entrepreneurship are not as important in the Austrian tradition as they are to the evolving field of entrepreneurship. These contributions draw from all the generations of the Austrian economics tradition (Salerno 2002) and take advantage of subjectivism, dynamics of market processes, and capital theory. Two recent reviews offer useful insights into both the breadth and depth of contributions to entrepreneurship from the Austrian tradition (Klein

and Bylund 2014; Foss, Klein, and McCaffrey 2019). This paper takes these contributions as given and also seeks to add some specific insights by Carl Menger to theory-based entrepreneurship research.

This paper takes the subjective value theory, the conception of economic goods, and the hierarchy of needs from Carl Menger's *Grundsätze der Volkswirtschaftslehre* (1871)¹ to elaborate a model of strategic entrepreneurship. Menger's account of value and exchange in the economic system is much more complete than his explicit presentation of the entrepreneur. His careful model of the genetic-causal process that links the transformation of commodities and other economic goods (services of labor and capital, as well as transport and storage) from higher order goods to consumer goods with attendant time delays and uncertainty is as valid today to describe entrepreneurial value creation as it was in the middle of the nineteenth century. More importantly, Menger's explicit insistence on subjective valuation by buyers of the final consumption goods as the basis for exchange fills a gap in most accounts of entrepreneurship, which are based on a highly impermeable boundary around the entrepreneurial firm. Pricing of the entrepreneur's product is *not* generated within the opportunity or the firm, but is the result of a causal process of subjective assessment of the product's capacity to satisfy one or more of the buyer's wants.

The objective of this paper is to make this causal process explicit at the boundary of the entrepreneurial firm and the market (Bylund 2011). Following a brief review of Menger's conception of entrepreneurial action, we examine the substantive elements of Menger's ontology of economics that support valuation of entrepreneurial activity at the market divide between firms and buyers. To show the merits of Menger's theory to strategic entrepreneurship, a recent formal model of entrepreneurial entry is reviewed. The singular deficiency of that model is that buyer needs are elided. The deficiency is rectified by a combination of Menger's verbal

¹ I have endeavored to link the authoritative English translation by Dingwall and Hoselitz (Menger [1871] 2007) to the original German edition (Menger 1871). I use an electronic version of *Grundsätze der Volkswirtschaftslehre* that identifies the original pagination. For the translation, I use the 2007 version produced by the Ludwig von Mises Institute. Dingwall and Hoselitz moved some of Menger's original footnotes to the translated text; these discrepancies are noted where important, as are translated passages that appear to misinterpret Menger.

representation of hierarchical needs and a formal model developed a century after his treatise was published. Together, these two representations of the genetic-causal process between entrepreneurial action and the market's subjective assessment of the product and competing goods complete the account of new entry into a market. In the spirit of economic ecumenicalism, the appropriateness of verbal and mathematical representations of this causal process is addressed to support Menger's contributions to entrepreneurial action 150 years on.

MENGER'S ENTREPRENEUR AND ECONOMIC ONTOLOGY

In the *Grundsätze*, Menger spends only about four paragraphs describing the entrepreneur (*Unternehmer*) and, more importantly, entrepreneurial activity (*Unternehmerthätigkeit*). Given that Menger's project is about human action, the functions performed by the entrepreneur are essential.

Entrepreneurial activity includes: (a) obtaining information about the economic situation; (b) economic calculation—all the various computations that must be made if a production process is to be efficient (provided that it is economic in other respects); (c) the act of will by which goods of higher order (or goods in general—under conditions of developed commerce, where any economic good can be exchanged for any other) are assigned to a particular production process; and finally (d) supervision of the execution of the production plan so that it may be carried through as economically as possible. (Menger [1871] 2007, 160)

Hébert and Link (2009) place Menger's entrepreneurial role in their historical categories of manager/superintendent (with Say, Mill, and Marshall) and decision-maker (with Cantillon, Marshall, Wieser, Walker, Keynes, Mises, Shackle, Cole, and Schultz). Correctly, Hébert and Link do not include Menger's entrepreneur in the roles of innovator, enterprise owner, capitalist, industrial leader, contractor, or arbitrageur. I quibble with the exclusion of "organizer and coordinator of economic resources" and of "employer of factors of production" for Menger's entrepreneur. It is clear from chapter 3 of the *Grundsätze*, that Menger traces value creation from higher order goods, including labor services and other services

(e.g. shipping, warehousing). This appears to be more about value creation through the (economizing) use of factors of production and purchased inputs than simply managing and making decisions.

One of Hébert and Link's roles is highly problematic, both in general and in the specific case of Menger: "the person who assumes the risk associated with uncertainty (Cantillon, Thünen, Mangoldt, Mill, Hawley, Knight, Mises, Cole, Shackle)" (2009, 100). Muddying risk and uncertainty is a problem in general, especially when Knight takes such care to separate them. But in the case of Menger, it is more substantive. First consider this quote:

it will be evident that I cannot agree with Mangoldt, who designates "risk bearing" as the essential function of entrepreneurship in a production process, since this "risk" is only incidental and the chance of loss is counterbalanced by the chance of profit. (Menger [1871] 2007, 161).

Menger footnotes this disagreement based upon Mangoldt (1855). In the original, one finds "die 'Gefahr' doch nur etwas accidentielles ist" (Menger 1871, 138n). The risk is *accidental*, not *incidental*. Thus, it appears that Menger denies risk bearing, *in the sense of aleatory probabilities* of economic outcomes, as an entrepreneurial function. However, in section 4 of chapter 1, "Zeit—Irrthum" ("Time and Error"), Menger asserts that

The greater or less degree of certainty in predicting the quality and quantity of a product that men will have at their disposal due to their possession of the goods of higher order required for its production, depends upon the greater or less degree of completeness of their knowledge of the elements of the causal process of production, and upon the greater or less degree of control they can exercise over these elements. The degree of uncertainty in predicting both the quantity and quality of a product is determined by opposite relationships. Human uncertainty about the quantity and quality of the product (corresponding goods of first order) of the whole causal process is greater the larger the number of elements involved in any way in the production of consumption goods which we either do not understand or over which, even understanding them, we have no control—that is, the larger the number of elements that do not have goods-character.

This uncertainty is one of the most important factors in the economic uncertainty of men, and, as we shall see in what follows, is of the greatest practical significance in human economy. (Menger [1871] 2007, 71)

This characterization of uncertainty looks close to that of Knight (1921).

At the bottom of the uncertainty problem in economics is the forward-looking character of the economic process itself. Goods are produced to satisfy wants; the production of goods requires time, and two elements of uncertainty are introduced, corresponding to two different kinds of foresight which must be exercised. First, the end of productive operations must be estimated from the beginning. It is notoriously impossible to tell accurately when entering upon productive activity what will be its results in physical terms, what (a) quantities and (b) qualities of goods will result from the expenditure of given resources. Second, the wants which the goods are to satisfy are also, of course, in the future to the same extent, and their prediction involves uncertainty in the same way. The producer, then, must estimate (1) the future demand which he is striving to satisfy and (2) the future results of his operations in attempting to satisfy that demand. (Knight 1921, 237–39)

The foundation of Menger's account is the time delay in transforming goods of higher order into goods "directed finally to the satisfaction of human needs" (Menger [1871] 2007, 67). This is his genetic-causal process, a series of time-stepped transformations of commodities (*Waaren*) into consumer goods (*Gebrauchsgüter*), in which the consumer values the economic character of the goods in the final exchange. Inside that valuation, there must be a payment for capital and for entrepreneurship.

The aggregate present value of all the complementary quantities of goods of higher order (that is, all the raw materials, labor services, services of land, machines, tools, etc.) necessary for the production of a good of lower or first order is equal to the prospective value of the product. But it is necessary to include in the sum not only the goods of higher order technically required for its production but also the services of capital and the activity of the entrepreneur. For these are as unavoidably necessary in every economic production of goods as the technical requisites already mentioned. Hence the present value of the technical factors of production by themselves is not equal to the full prospective value of the product, but always behaves in such a way that a margin for the value of the services of capital and entrepreneurial activity remains. (Menger [1871] 2007, 161)

Evidently, Menger dismisses aleatory risk as an element of entrepreneurship, as all economic agents face these accidental errors across

time and space. But, if (a) the causal process that transforms higher order commodities into first order consumption goods is the essence of entrepreneurial activities and (b) those activities are fraught with epistemic uncertainty (a knowledge problem) and (c) valuation of consumption goods should include returns to entrepreneurial activity, then those returns must reflect returns to judgment in the face of uncertainty (Foss and Klein 2012). Thus, we can relate Menger's conception of entrepreneurial activity to contemporary accounts of entrepreneurship, particularly where decision-making and exercising judgment under uncertainty are central. However, it is paramount to understand that the *Unternehmerthätigkeit* that brings the consumer good to the market affords no guarantee that the returns to entrepreneurial activity will be positive; the essence of entrepreneurship is the economizing behavior in the face of uncertainty.

But there are other pieces of Menger's economic ontology that can contribute to the advancement of the economics of entrepreneurship. It seems that every economist that reads the *Grundsätze* finds something particularly insightful, but often lost from discourse in neoclassical economics (Hayek 1934; Stiglitz 1937; Georgescu-Roegen 1954; Schumpeter 1954). Both Hayek (1934) and Stiglitz (1937) point to a combination of the subjective valuation of consumer goods by buyers and the imputation of value backward through the higher orders of goods, including commodities and the services of human action—including labor and entrepreneurship, the critical departure from classical economics and conceptually superior to the contemporary accounts of Jevons and Walras. Menger is profoundly clear that he is concerned with all economic goods, including labor services and intangibles (*Verhältnisse*), as well as entrepreneurial action. These goods have goods-character (*Güterqualität*)² that is determined by no intrinsic valuation (e.g. labor value or physical costs of production), but by how the buyer values the good in exchange. Stiglitz is unique in proposing that this chain of valuation from consumer goods through all higher order goods follows the same pattern of uncertainty bearing in the economizing process of production that the final market valuation

² Dingwall and Hoselitz (Menger [1871] 2007, 52n3) explain that Menger uses both quality (*Qualität*) and character (*Charakter*) to describe the attributes of goods that respond to buyer needs. We return to this in a later section of the current paper.

does. That is, the goods-character at any point in the chain has economic value derived from the subsequent goods-character of the later goods in the transformation process. We return to this important feature when we disaggregate goods-character explicitly into attributes in the next two sections of the paper.

The second innovation of Menger's ontology that affects the economics of entrepreneurship was masked by the characterization of utility in neoclassical economics. Georgescu-Roegen (1954) points to Menger's insistence that buyer valuation is tied to a multiplicity of wants or needs that are held in the consumer's mind in a hierarchy. Buyers seek to fulfill these wants by purchasing consumer goods such that higher-valued wants are met first and the marginal wants have been met at the same comparable degree when the budget for the period in question is exhausted by the marginal *Gebrauchsgüter*. Georgescu-Roegen makes the compelling case that neoclassical theory reduces the complex nature of individual wants, with varying intensities and inherent incommensurabilities, to a common want: utility. He argues that wants are *irreducible*. At the very least, "bread cannot save someone from dying of thirst,... living in a luxurious palace does not constitute a substitute for food, etc." (Georgescu-Roegen 1954, 514). As one of the foremost mathematical economists of the twentieth century, Georgescu-Roegen does not stop with this verbal assault on the false reduction of wants to utility; he shows that a hierarchical set of wants permits preference relations to exist between goods for rational choice, but that indifference between market baskets cannot be supported. Choices cannot be ordinally measurable. We return to the implications of this in a later section of the paper. First, we consider a recent economic model of entrepreneurship that will serve as a foil for incorporating Menger's insights.

THE (NEARLY) NEOCLASSICAL ECONOMICS OF ENTREPRENEURSHIP

In a recent article, Randall Westgren and Robert Wuebker (2019) present a formalized economic model of entrepreneurial entry into an existing industry/market. Their intent is to identify the portion of rent streams above contractible and noncontractible costs that can be attributed to entrepreneurial activity. Their model and consequent

analysis turns on value creation—to encompass payments to capital, labor, purchased inputs, and the agent or agents that fulfill Menger's entrepreneurial role and other roles such as innovation and uncertainty-bearing—preceded by the creation of value for buyers in the marketplace. That is, Westgren and Wuebker follow Menger's ontology (without knowing) for imputation of value from the market between entrepreneurs and potential buyers. That is, the entrepreneur designs the new entry product to be qualitatively different from incumbent products or to have a cost structure that is superior for a qualitatively similar product, a microlevel expression of Michael E. Porter's (1980) differentiation and cost advantage strategies.

The Westgren and Wuebker (2019; hereafter WW) model makes differentiation and cost advantage explicit in the characteristics or attributes of the product, following Kelvin Lancaster's (1966, 1971) model of his "new approach" to consumer demand. Following Lancaster (1966), each product is characterized by a vector of attributes of interest to buyers, which create value. This is, effectively, a model of goods-character (*Güterqualität*) for consumer goods (*Gebrauchsgüter*).

$$(1) X_t^i = G_t^i(z_1^i, z_2^i, \dots, z_j^i, \dots), \text{ or, in vector shorthand, } X_t^i = G_t^i(\vec{Z}_t^i),$$

where G_t^i is the quality function—the production outcome—that relates the individual attributes z_j to product i . We expect the products i and j to be qualitatively distinct:

$$(2) G_t^i(\vec{Z}_t^i) \neq G_t^j(\vec{Z}_t^j), \text{ where } z_i \in R^n.$$

The quality bundles may differ by both which attributes z_i appear in the product and how they are combined by the quality function. WW follow Lancaster's convention that a product consists of a linear combination of the attributes. The attributes and products that exist in the industry at time t will be:

$$(3) [Z] = [G][X],$$

where the vector of product attributes $[Z]$ is related to the vector of r goods $[X]$ by a rectangular matrix of what are effectively input-output coefficients that "count up" the product attributes in each unit of each good produced by the r members of the industry. At the limit, $[G]$ is of dimension $r \times n$.

WW and Lancaster continue with the presumption that buyers assess attributes in characteristics space but express their preferences in goods space:

$$(4) [G] = \begin{bmatrix} z_1^1 & z_2^1 & \dots & z_n^1 \\ z_1^2 & z_2^2 & \dots & z_n^2 \\ \vdots & \ddots & \ddots & \vdots \\ z_1^r & z_2^r & \dots & z_n^r \end{bmatrix} \quad [X] = \begin{bmatrix} X^1 \\ X^2 \\ \vdots \\ X^r \end{bmatrix},$$

where the subscripts denote the attributes $\{1, 2, 3, \dots, n\}$ and the superscripts denote the products $\{1, 2, 3, \dots, r\}$. The time period is suppressed for clarity, though it is imperative to remember that time figures greatly in analysis of innovation and new entry—which follows directly from the foregoing analysis of Menger's production system.

The (time-suppressed) choice problem for each buyer is:

$$(5) \text{Max } U(z_1, z_2, \dots, z_m)$$

s.t.

$$(6) P_1 X_1 + P_2 X_2 + \dots + P_r X_r \leq B$$

$$(7) [Z] = [G][X]$$

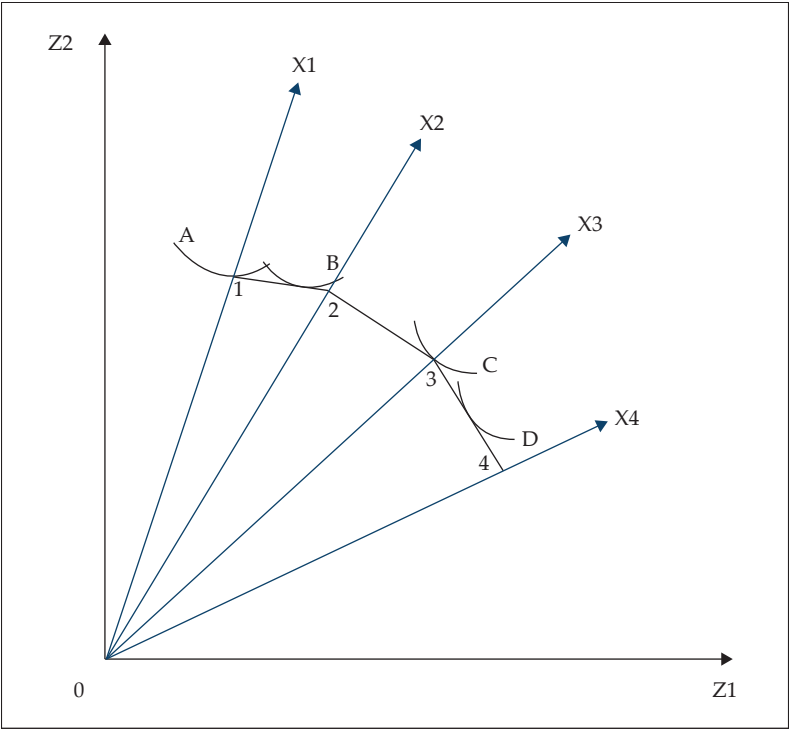
$$\text{all } z_i, X_j \geq 0.$$

In this general form, the utility obtained from characteristic j may arise from it being solely available in a given good X^i or it may come from several goods that express that characteristic in varying amounts. And any good may have several characteristics from the n characteristics that appear in the utility function. This supports the analysis that WW present, whereby the combination of the relative amounts of each characteristic available from the r goods is evaluated with the prices of the goods to obtain their shadow prices. This may be easier to evaluate in a two-dimensional characteristics space with four alternative goods. Figure 1 is based on both WW (2019) and Lancaster (1971, 39).

In figure 1, each of the four goods comprises a unique ratio of z_2 to z_1 in each unit purchased. Good X^1 has the highest z_2 / z_1 ratio per unit and good X^4 has the lowest. The points labeled 1, 2, 3, 4 are the points on the goods rays that exhaust the given budget allocation. The quantities of each good purchased may vary, but these points are analogous to the standard consumption frontier in neoclassical representations of the budget line in goods space. WW note that there are four stylized consumption points on this efficient

frontier—labeled *A*, *B*, *C*, *D*—associated with four consumers (or consumer segments) who are “in the market for” z_1 and z_2 . In Lancaster’s terminology, consumer *A* and consumer *C* are vertex buyers: they exclusively buy, respectively, good 1 and good 3. Because the z_2 / z_1 ratios for the four goods do not maximize their respective utility functions, consumer *B* buys some X^1 and some X^2 and consumer *D* splits purchases of X^3 and X^4 . Lancaster calls these edge buyers. In three or more dimensions, there will be buyers who optimize as facet buyers, consuming multiple goods in higher dimensions of z space.

Figure 1. Four-Good, Two-Characteristic Choice Model



What happens when $[G]$ is large? WW state that in the context of product innovation and entry, the number of strategically important characteristics will be small, following the logic of the

resource-based strategy for the limited strategically important set of resources or factors of production (Barney 1986, 1991). Lancaster (1972) admits that the usefulness of his model is limited to instances where the number of operationally relevant characteristics is less than the number of goods. He proposes two ways to limit the dimensionality of $[G]$. The first way is technical. In any class of goods there will be a number of redundant characteristics or, perhaps, invariant characteristics across the class of goods. The nonredundant and highly variant characteristics will be a (small) subset of the n possible arguments in U . Second, there will be human (goods-people) relations (Lancaster 1972). These include satiation (for one or more characteristics) and dominance, linked to the context of the purchase decision (e.g. hunger, low income). The technical algorithm is all about the structure of the $[G]$ matrix. Nearly all classes of potential buyers will eliminate irrelevant or common characteristics from consideration. Consider this representation of five (competing) products in a class of goods with seven measurable characteristics.

$$[G] = \begin{bmatrix} z_1^1 & z_2^1 & z_3^1 & z_4^1 & z_5^1 & 0 & z_7^1 \\ z_1^2 & z_2^2 & z_3^2 & z_4^2 & 0 & 0 & 0 \\ z_1^3 & z_2^3 & z_3^3 & z_4^3 & 0 & z_6^3 & z_7^3 \\ z_1^4 & z_2^4 & z_3^4 & z_4^4 & z_5^4 & z_6^4 & 0 \\ z_1^5 & z_2^5 & z_3^5 & z_4^5 & 0 & 0 & z_7^5 \end{bmatrix}$$

Given the redundancy of characteristics z_1 – z_4 (although the individual amounts of the characteristics may vary), a buyer will sort on characteristics z_5 – z_7 . And if a buyer finds no utility in characteristic 5, the subset of goods that will enter the consideration set (Mehta, Rajiv, and Srinivasan 2003; Shocker, Ben-Akiva, Boccara, and Nedungandi 1991) will be X^2 , X^3 , and X^5 . Depending on the utility weights for the six relevant characteristics, it is possible that X^2 will be dominated by X^3 or X^5 —depending on the buyer's relative utility for z_6 and z_7 and the quantities of each of the five valued characteristics in the two goods.

Westgren and Wuebker (2019) complete their argument for using the Lancaster model as the core of the search process that

an entrepreneur follows to find a profitable entry point into the strategy space inhabited by incumbent firms. The search process and the subsequent innovation in product space create one form of Schumpeterian competitive move: product innovation, where a new attribute bundle will disrupt the value assessment by buyers. If the new entry is tied to process innovation, then a Schumpeterian "new combinations" entry will be profitable if there is significant cost advantage in producing the relevant (even if redundant) product attributes. WW go so far as to illustrate that at the limit, the product or process innovation may lead to Schumpeter's creative destruction.

IMPROVING ON THE LANCASTER MODEL WITH MENDER

In the previous section of the paper, we proposed that the WW model elaborates Menger's goods-character by using Lancaster's characteristics space to make clear the source of utility in the buyer decision. We examine this in detail and tie this to Georges-cu-Rogen's (1954) argument against the reducibility of wants to utility—a fault of neoclassical consumer theory that Lancaster maintains in characteristics space.

To be sure, Menger considers the quality of goods in section C of part 2 of his third chapter, "Einfluss der verschiedenen Qualität der Güter auf ihren Werth," ("Influence of the Different Quality of Goods on Their Value.") But the salient point of this discussion is that we cannot assess the value of qualitatively or quantitatively different goods—i.e., goods of differing quality—objectively. Individual buyers satisfy different needs and wants by consuming goods of different quality and the decision of choosing one particular good of a given quality rests in part on the "importance of needs that would remain unsatisfied" by the choice (Menger [1871] 2007, 143). Moreover, this is a matter of

the particular satisfaction that depends on a particular concrete good when a whole group of needs stands opposite goods whose various units are capable of satisfying these needs in qualitatively different ways.... If goods of one quality can be replaced by goods of another quality, though not with the same effectiveness, the value of a unit of the goods of superior quality is equal to the importance of the least important satisfaction that is provided for by the goods of superior quality minus

a value measure that is greater (1) the smaller value of the goods of inferior quality by which the particular need can also be satisfied, and (2) the smaller difference to men between the importance of satisfying the particular need with the superior good and the importance of satisfying it with the inferior one. (Menger [1871] 2007, 144–45)

Thus, Menger anticipates the essence of Lancaster's characteristics approach as the basis for qualitatively different goods, but requires that the choice function include the two central features of his approach to the valuation of goods: (1) the subjective evaluation of the quality of goods must be based on how they fulfill a hierarchy of needs/wants, and (2) the analysis requires identification of the marginal need *not satisfied* by the choice set. Lancaster's human relations algorithm is a shallow simulacrum of Menger's valuation system. Lancaster allows for satiation and dominance to limit the size of the choice set but does not incorporate either of these constructs formally into his maximand or as additional constraints beyond the budget set (Lancaster 1972). In fact, he describes Menger's approach to hierarchy in the 1972 paper but dismisses it because "[h]ierarchy in goods does not necessarily represent an underlying hierarchy of wants" (Lancaster 1972). Effectively, he gets Menger's logic backwards. Any hierarchy of goods choice is, in fact, driven by the hierarchy of wants. Moreover, Lancaster highlights the importance of satiation to Menger.

Closely associated with the idea of a hierarchy of wants is some kind of satiation effect. In the original arguments of Menger and other writers in the same vein, the hierarchy was relevant because the consumer satisfied his wants in order of importance. Obviously, unless the most important want was satiable, the next most important would be irrelevant. (Lancaster, 1972, 59)

Clearly, Menger would agree with the last sentence if the circumstances of the buyer were limited and she could not command the necessary resources to fulfill the highest need. But this is trivial. All accounts of consumer choice theory require sufficiency of the budget constraint to purchase a minimal market basket to sustain life.

Lancaster hints at the salience of wants but does not include them in his utility function. All characteristics are evaluated on some common measure of utility and the compensatory nature of this

utility function permits direct tradeoffs between all characteristics and, hence, the goods that comprise them. Lancaster requires that the utility function $U(z_1, z_2, \dots, z_m)$ have the same properties of the neoclassical economics maximand for choice in goods space. It must be differentiable and the purchase of any good with low levels of any z_i must be able to be compensated by the choice of any other good that contributes more z_i so as to maximize utility. That is, there are indifference curves in attribute space that behave the same way as indifference curves in goods space. As Georgescu-Roegen (1954) points out, if these qualities are incompatible with a hierarchy of wants and, moreover, reduces wants to a single-valued utility measure that effectively homogenizes them.

Can we improve on this by capturing more of Menger's account of hierarchical wants? That is, can we improve the formal model of Lancasterian choice to make the entrepreneurial action of WW more explicit? Yes. There is a significant piece of conceptual modeling that closes the gap between Menger and Lancaster. In 1972, Duncan Ironmonger published a book entitled *New Commodities and Consumer Behaviour* based on his 1961 PhD dissertation completed at Cambridge University. Ironmonger was particularly interested in developing an approach to support empirical analysis of demand for new and qualitatively different goods.

Choice under Priorities among Wants

The Ironmonger model's formal symbols are very close to those of Lancaster (1966), save for the fact that z_i is no longer the level of characteristic i , but the *quantity of satisfaction of want i* (per unit of time). Furthermore, the system has the following variables (time suppressed):

- X^j is the number of units of good j consumed per unit of time,
- z_i is the quantity of satisfaction of want i per unit of time,
- w^j_i is the quantity of satisfaction of want i per unit of good j consumed,
- P^j is the price per unit of good j , and
- Y is the income per unit of time.

There are three objectively measurable variables: X^j , P^j , and Y . There are two subjectively valued variables: z_i and w^j_i . In matrix form, $[W]$

is the matrix showing how m wants are satisfied by n goods, p is a vector of length n for prices, and $[X]$ is a vector of n goods.

If one were to define a compensatory utility function in the manner of neoclassical theory or in Lancaster's model, it would appear as

$$(9) U = U(z_1, z_2, \dots, z_n).$$

Ironmonger wishes to represent want satisfaction as a hierarchical (lexicographic) utility function. For two specific wants, z_1 and z_2 , where z_1 has priority over z_2 , there is no longer a continuous single utility function.

$$(10) U = U_1(z_1), \text{ where } 0 \leq z_1 < z_1^* \text{ and } z_2 \geq 0, \text{ with } \delta U_1 / \delta z_1 > 0 \text{ and } U = U_1(z_1^*) + U_2(z_2) \text{ where } z_1 \geq z_1^* \text{ and } z_2 \geq 0, \delta U_2 / \delta z_2 > 0.$$

This is a two-step utility function, where below a satiation point z_1^* for the higher priority want, utility is measured entirely by the satisfaction level for z_1 even if the consumption set (not yet defined) yields some positive satisfaction of the second want. After satiation of the priority want, utility is only increasing for the satisfaction of the second want even if more z_1 occurs. In a world of three or more wants, the level of utility increases only with the marginal increase in the utility of the lowest want that is not yet satisfied by satiation. This is perfectly coherent with chapter 3 of Menger (1871).

Ironmonger presents a mathematical treatment of a system with m wants and n goods. He also allows any good to satisfy more than one want and there can be more than one good that satisfies any particular want. This echoes Menger in his section on the original measure of value.

But in ordinary life the relationship between available goods and our needs is generally much more complicated. Usually not a single good but a quantity of goods stands opposite not a single concrete need but a complex of such needs. Sometimes a larger and sometimes a smaller number of satisfactions, of very different degrees of importance, depends on our command of a given quantity of goods, and each one of the goods has the ability to produce these satisfactions differing so greatly in importance. (Menger [1871] 2007, 129)

Both Menger and Ironmonger agree on what they call the economizing and maximizing behavior, respectively. The consumer chooses goods such that the largest number of wants can be satisfied, given that all the wants that are more important than the

least important satisfied want are likewise satisfied (at the level of satiation). The hierarchy of wants matters. The failure to satiate any higher-level want cannot be compensated by satiation of any number of lower-level wants. Menger illustrates this with a verbal account of finding the marginal want (that is not satiated). Ironmonger formalizes this as a linear programming model where the i th want is not satiated; it is the marginal want.

As the consumer has priorities among his wants, he ranks the boundary planes³ in order of his priorities, and then he satiates the i th want if he can satiate at the same time all wants prior to the i th. The consumer *will* [original emphasis] satiate his i th want if there exists a point \bar{X} in the commodity space that satisfies the set of $i+1$ inequalities $p' \bar{X} \leq y$ and $W_i \bar{X} \geq z_i^*$ where W_i is the submatrix formed from the first i rows of W and z_i^* is the subvector formed from the first i elements of z^* . If an \bar{X} exists for the $(i-1)$ th want but not for the i th, then the i th want is the marginal want. The optimum budget is that budget which maximizes the satisfaction of the i th want. (Ironmonger 1972, 33)

We can effectively rewrite the WW model to commit to Menger's theory by combining elements of Ironmonger's model. Remember that z_k is now the level of satisfaction of the k th want and WW's $[G]$ matrix of the yield of characteristic k by the consumption of one unit of good j is replaced by the Ironmonger $[W]$ matrix, which depicts the satisfaction of want k by the consumption of one unit of good j . And the maximand (utility function) has to identify the marginal want that is satisfied and the marginal want that remains unsatisfied. We will use Ironmonger's notation for the marginal unsatisfied want " i " and the last satisfied want " $i-1$." Since Menger requires a strict hierarchical or lexicographic ordering between the highest level want z_1 and the lowest level expressed want z_n , there must exist a boundary between satiated wants and the highest (of remaining wants) that is not satisfied.

(5') $U = U(z_1, z_2, \dots, z_k, \dots, z_{i-1}, z_i, \dots, z_n)$, where

$U = \sum U_k(z_k)$, where $0 \leq z_k < z_k^*$ with $\delta U_k / \delta z_k > 0$ and

for all $z_k < z_i$,

³ Boundary planes separate the set of wants into two regions: those wants that are satiated and those that are not. The linear programming model seeks to maximize the number of fully satiated wants at this boundary in want space.

$$U = \sum U(z_{i-1}^*) + U_i(z_i), \text{ where } z_k \geq z_k^* \text{ and } 0 \leq z_i < z_i^*, \\ \delta U_k / \delta z_k = 0 \text{ and } \delta U_i / \delta z_i > 0.$$

s.t.

$$(6) P_1 X_1 + P_2 X_2 + \dots + P_r X_r \leq B$$

$$(7') [Z] = [W][X]$$

$$\text{all } z_i, X_j \geq 0.$$

The equations (5'), (6), and (7') represent Menger's causal model for one consumer, given r known goods $[X]$ and their market prices $\{P_1, P_2, \dots, P_r\}$. The $[W]$ matrix is the subjective evaluations by that consumer for the satisfaction obtained for each unit of the known goods consumed. The vector $[Z]$ is also subjectively known by that consumer—the rank order of her wants—as are the satiation levels z_k^* . It is helpful to think of the linked want-by-want utility function as a series of constraints on overall utility maximization that hold the wants as distinct, noncompensatory, and ranked—the essence of Menger's account.

Implications for Entrepreneurship Theory

How, then, can this model be used prior to entry by an entrepreneurial firm? From the perspective of the incipient entrepreneur, the model explains how purchase decisions are made based on buyers' assessments of how goods in the market will fulfill their needs hierarchies. And though the model is individualistic—and not as Lancaster intended his model—it allows the behavior of the representative buyer to be repeated across a number of individuals, if the number of goods in the market of interest is relatively small and the relevant wants are also few, to identify target markets for the new entry. The fact that individuals faced with this choice problem must identify a needs hierarchy implies much for the entrepreneur. The rankings and how they are distributed among buyers in the target market provide a great deal of product design information, even if the subjective valuations in the $[W]$ matrix are not known. To the extent that data on purchases of incumbent goods imply how buyers perceive the mix of product attributes that satisfy needs, the entrepreneur can use his judgment to identify underserved needs and his ability to design a product to serve those needs at a cost

that matches buyers' willingness to pay (Rossi, McCollough, and Allenby 1996; Allenby, Arora, and Gunter 1998).

There is another connection between Menger and contemporary scholarship. There is a body of theoretical and empirical work on cognitive models of the interactions between firms and consumers across "the market divide" (Porac and Rosa 1996). Joseph Porac and José Antonio Rosa describe imperfect information exchange between sellers and buyers given that these are subjectively assessed, especially if the product category is new. The markets are "inherently equivocal" and the standard tools of analysis such as cross elasticities of demand do not exist (Porac and Rosa 1996, 367). Rosa, Porac, Jelena Runser-Spanjol, and Michael Saxon (1999) elaborate the not-quite-shared process at the point of entrepreneurial action—new product entry—and note that

attributes do not exist on their own either. They are derived inductively through observation and interaction with products. The use and observation of products are idiosyncratic and dependent on a person's vantage point and observational goals....Consumers and producers bring their product conceptual systems to bear on market interactions. They use their conceptual systems to enact meaning for the physical artifacts they encounter and link the products to usage conditions and production or profit concerns. (Rosa et al. 1999, 67)

Eventually, the individuated product assessments become the basis for shared comprehension of the product attributes and how they satisfy buyer needs. This would correspond to the target market or market segments discussed above. But this market process is clearly consistent with Menger's subjectivism and his insistence that the array of individual valuations is not translatable into a single, stable market price.

Noncompensatory Decision Theory and Marketing Research

We are at a juncture that permits the application of market research methods to assess subjective variables inherent in the model shown above. These techniques of eliciting and analyzing data will lead to useful judgments about needs hierarchies, patterns of subjective beliefs held by active and latent buyers, and buyers' willingness to pay for attribute bundles that satisfy their needs, even for products

that are still not on the market. Moreover, significant work was done from the 1980s through the 2000s on modeling consumer choice across product attributes using noncompensatory models (Johnson and Meyer 1984; Gilbride and Allenby 2004; Hauser 2009; Shin and Ferguson 2017). This research developed significant empirical evidence that consumers do not follow a decision process that implies a compensatory utility function. Many different noncompensatory choice models are supported by experimental results, including the hierarchical/lexicographic model embodied in equation (5') above. Others include a conjunctive decision rule, where some minimal level of all relevant attributes (i.e., need-satisfying product characteristics) must be present for the product to remain in the consideration set, and the disjunctive rule, where only the attribute(s) that satisfies the highest need causes the product to be considered.

It is possible now to take pairwise discrete choice data from controlled experiments and impute the choice model used by the subject. Repeating the experiment permits the researcher (or entrepreneur!) to build a simulation of perceived need fulfilment that can be used to simulate new product entry under alternative attribute designs (Train 2009). The complexity implied by the utility function in (5') is easily handled by these methods, which were unavailable to Ironmonger in his subsequent empirical analyses of new product introductions in English (Ironmonger 1972) and Australian (Ironmonger, Lloyd-Smith, and Soupourmas 2000) households.

It is also possible through surveys of purchase intentions and controlled choice experiments to “extract” the subjective assessments from active and latent buyers’ minds. These assessments include hierarchical preferences (or needs) and the strength of those preferences, willingness to pay for new product attribute bundles, and confidence in subjective assessments of alternative products. These are the data that permit the expression of Menger’s model of buyer choice in a manner that completes the analysis of entrepreneurial action in the face of subjective valuation in the market. Such data will provide an improvement in the assessment of entrepreneurial entry over the model of Westgren and Wuebker, since their model seeks data on product attributes, not on how these attributes fulfill buyer needs. This Mengerian insight solves part of the epistemic uncertainty facing the Knightian entrepreneur as she develops her conjectures about expected market outcomes after entry.

FORMAL MODELS AND ENTREPRENEURIAL ACTION: A DISCUSSION

In an oft-cited article, William Baumol (1968) argues that entrepreneurial action has been necessarily left out of formal neoclassical economics models. "The theoretical firm is entrepreneurless—the Prince of Denmark has been expunged from the discussion of Hamlet." (p. 66) This quote will elicit wry smiles from entrepreneurship scholars and economists that abjure formal models. Baumol, at least at this point in his writing, believes the neoclassical model cannot be augmented or altered in any meaningful way and that advances in modeling entrepreneurship lie in heterodox economics and psychology. He ignores prior economic analyses, notably from the Austrian school, that keep the Prince on stage save for two footnotes. One is a sop to Schumpeter (p. 70) and the other, surprisingly, to Veblen (Baumol 1968, 67).⁴

Veblen's 1898 polemic deserves some attention in two respects. First, in the article he acknowledges positively Menger and the Austrians' approach in developing subjectivism, but he is disappointed that they did not create an evolutionary account with cumulative causation. "[T]he later Austrian group struck out on a theory of process, but presently came to a full stop because the process about which they busied themselves was not, in their apprehension of it, a cumulative or unfolding sequence" (Veblen 1898, 386). This is clearly a failure by Veblen to understand Menger, Böhm-Bawerk, and Wieser. Perhaps he would have seen more clearly the genetic-causal tradition at the core of Austrian economics had he lived to see the term codified by Hans Mayer in the 1930s (Cowan and Rizzo 1996). In any case, Veblen's appreciation of Menger's subjective value theory and hierarchical needs is clear from his *The Theory of the Leisure Class* (1899).

⁴ Baumol quotes Veblen's 1898 "Why Is Economics Not an Evolutionary Science?" The quote also appears in later books and anthologies. Veblen's polemic on (classical and neoclassical) economic man begins, "The hedonistic conception of man is that of a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact. He has neither antecedent nor consequent. He is an isolated, definitive human datum, in stable equilibrium except for the buffets of the impinging forces that displace him in one direction or another" (Veblen 1898, 389).

The second point is that Veblen was speaking of the consumer *and not the producing agent*—entrepreneur or manager. Veblen’s quotation repudiates the mechanistic utility maximization of the Lausanne school and its implied capacity for calculating across large sets of market goods. Veblen’s socially stratified, socially embedded consumer behaves more akin to Menger’s need satisfier. Veblen’s cynicism aside, this is consistent with the model presented above that forms the basis for target markets (i.e., buyer segments) for the entrepreneur. But it is not about the missing Prince.

In this paper, we rely on formal models written with mathematical notation, rather than on verbal reasoning alone. In part, this serves to link the formal models of Westgren and Wuebker (2019), Lancaster (1966, 1971), and Ironmonger (1972) to the reasoning of Menger. I rely on the erudition of Salerno (2010) and his presentation of the praxeological method that links Menger to Rothbard (2009). Salerno notes the effective use of fictive or abstract constructs “that permit the economist to strip away all but the conditions of action that are essential to his analysis of cause and effect” (Salerno 2010, 8). The formal models exploited above do the same thing. Both the verbal account and the formal model are *representations* of economic phenomena (Hacking 1983). All representations of target (real) phenomena are false with respect to the target, regardless of whether they are verbal, graphical, or mathematical representations. Stripping away inessential elements of an economic phenomenon to core causal relationships gives us Menger’s (1871, ch. 3) farmer with more grain than his household consumption needs require, Böhm-Bawerk’s (1959) horse-wheat market, Lancaster’s utility function for product attributes, and the demand curve we depict for university freshmen.

The value of representations is the stuff of philosophy of science. Cowan and Rizzo (1996) bring this to the fore in discussing the genetic-causal tradition in Austrian economics. They cite Nancy Cartwright (1983) and Uskali Mäki (1990, 1993) as defenders of this tradition as realism, despite the use of representations rather than full-blown accounts of the target (real) phenomenon. Cartwright (1999, 2007) carries this idea forward by suggesting that a representation is useful if it allows inferences about the target phenomenon. Mäki (2009, 2011) makes the case for models as representations of target systems if the isolations produce credible surrogates for the

causal structure(s) of interest. He goes so far as to support “false” models: “I accept the weaker idea that a model may be true *despite* false assumptions. I also accept—and argue for in this paper—the stronger idea that a model may help capture truths *thanks to* false assumptions” (Mäki 2011, 48, *italics original*). It is informative for economists that Mäki chooses a piece by Menger’s (near) contemporary, Johann Heinrich von Thünen, as a way to highlight the value of an isolated representation—the well-known *Der isolierte Staat* (The isolated state). Thünen double dips in isolation; he presumes that an isolated region exists in space and he isolates the economic functions of interest by assuming a flat, perfect, cultivatable plain and by assuming away topographic features that would confound transport costs. Mäki notes that this representation of economic geography has no resemblance to the target world but that the idealized model makes use of the fictions of which it is built to posit truths about economic behavior and its causal nature in the target world.

There is one additional distinction about models as representations that merits discussion. One can isolate the causal structure of interest by abstraction or by idealization. These two terms are not synonymous, but the boundaries between them may be fuzzy in practice. Levy (2018) drives a wedge between the terms by defining abstraction as omission of (true) elements of the target phenomenon in creating the representation—omission without misrepresentation—and idealization as deliberate misrepresentation of the target—an “anti-factive” or “fictive” model. One would certainly characterize the axioms of rationality that undergird neoclassical models of consumer choice as idealization without even a whiff of abstraction. So, too, is Menger’s analysis of consumption decisions based upon satisfying a known hierarchy of needs given a subjective evaluation of value of the goods-quality (*Güterqualität*). The causal nature of the representation derives from careful logical construction of the system of exchange across all manner of economic goods (Salerno, 1999). The “realist” half of the causal-realist approach of Menger is not based on abstraction, but on development of idealizations that hold across all of the transactions traced from higher-order goods to consumer goods. One may contrast this with an obvious abstraction process such as case studies or the German historical school, in which detail is omitted from the target world (context) to highlight some observed phenomenon.

There are two important implications of training the lens of philosophy of science on both the Mengerian verbal causal-realist method and the models of Lancaster and Ironmonger. First, it is not true that an abstract model is more generalizable to the target world than an idealized model just because the former has some observable (factive) elements (Mäki 2009, 2011; Levy 2018). How closely a model *resembles* a target at some point in time does not imply its value as a *representation* of the target. Mäki emphasizes that the truth of the model lies not in *resemblance*, i.e., the truth *of* models, but in the truth *in* models whose construction (however fictive) yields inferences about causal mechanisms in the world (Cartwright 2007). This is Menger's design in the *Grundsätze*. The second implication is that there is no reason to prefer one representation over another unless it yields superior inferences about the phenomenon being modeled for a particular purpose for a specific audience (Mäki, 2011). That is, a mathematical representation may not be inferior to a verbal representation (e.g. Ironmonger vs. Menger) depending on the pragmatics of the purpose (e.g. building a computer model for empirical analyses vs. explication of the principles of economic behaviors) for two distinct audiences. To the extent that *both* Ironmonger and Menger capture the cause-effect relationships between need hierarchy and consumption choices among available goods, they are equivalent representations. To the extent that Ironmonger's model incorporates the logic of Menger's hierarchy of needs in a representation of consumption choice that is superior to Lancaster's model for the purpose of analyzing new entrants into product categories for entrepreneurship scholars, it is superior for that purpose.

CONCLUSIONS

The intent of this paper has been to illustrate that Menger's need hierarchy can be incorporated into a formal model of strategic entrepreneurship, such as that of Westgren and Wuebker (2019) so as to improve the representation of the choice behavior of buyers in target markets. This improved representation implies that an idealized model of entrepreneurial entry into a market whose customers are served (however well) by existing products can be more explicit. Moreover, by maintaining the distinctiveness (irreducibility) of

wants that is the centerpiece of Menger's consumer theory, we have a clear theoretic foundation for *value creation for the buyer* that is missing from current conceptions of the economics of entrepreneurship. What then follows is a superior basis for imputing value to entrepreneurial action by new firms to take new products and/or processes to the market. That is, we have a theoretical structure whereby the subjective valuation of the attributes of new products by buyers, according to their subjectively held wants, can be imputed to the combination of resources and inputs used by the entrepreneur.

Menger's ontology provides further insights, as his foundational consideration of the economic value of goods must include "a margin for the value of the services of capital and entrepreneurial activity" (Menger [1871] 2007, 161). Thus, the value of Schumpeterian innovation and Knightian (and Mengerian!) uncertainty bearing as entrepreneurial functions can be calculated over and above the production and transaction costs incurred by the firm (cf. Westgren and Wuebker 2019). Moreover, Menger requires that the economic value of intangible goods of higher order, such as intellectual property (patents, copyrights, brand names, etc.)—his *Verhältnisse*—be included in the imputation. This means that the "teardown" cost estimates for consumer electronics are nonsense. They exclude the economic value of past entrepreneurial action in the creation of intangible resources that may create value in the buyers' of these products. Finally, the entrepreneurial actions that may be included in the third of Westgren and Wuebker's entrepreneurial functions—Coasean organization, which includes cost-saving business model innovations—can clearly be considered within the *Verhältnisse*. To the extent that these innovations create value for the buyer because of lower cost relative to subjective value, they fall under Menger's conception of entrepreneurship, i.e., economizing.

Where does this account of the economics of entrepreneurship fit with regard to the literature on entrepreneurial opportunity? It is superior to the so-called Kirznerian (objective) discovery opportunity (Shane and Venkataraman 2000). A Mengerian model of entrepreneurship cannot be considered as some exploitation of an objective opportunity that exists in the business environment, the metaphorical twenty-dollar bill lying on the sidewalk. The connection between entrepreneurial judgment and individual buyers' subjective evaluation of products is hardly exploitation of

an objective social phenomenon. Ontologically objective opportunity has been debunked by McBride and Wuebker (2020), and the very essence of Austrian economics, which is reflected in this paper, supports subjectivism. Then, does this account add anything to the Schumpeterian creation opportunity (Alvarez and Barney 2007)? If the creative opportunity is conceived as wholly the result of cognitive processes and action interior to the firm, then it fails to link buyer valuation to value creation, at least explicitly. The creation opportunity, typically conceived as a social construction process by the entrepreneurial team, has nothing to support imputation of value in a meaningful way. This will lead inevitably to the problem of whether there are observable outcomes (i.e., profits) from this mind-dependent phenomenon (McBride and Wuebker 2020). The Austrian economic tradition requires human action in the sense of investments, market entry, and purchases by buyers which are, at best, only implied by a social constructionist account.

The economic model presented in this paper can be tested empirically by observing these human actions. Pragmatically, this will follow the marketing and organizational theory designs discussed above. Given the differences among need hierarchies in submarkets, how will putative target markets assess at the group level the subjective valuations of the attribute bundles? In one target market, a particular attribute will fulfill the highest-ranked need and in another target market, that need will be lower ranked. The market process allocates different attribute portfolios (i.e., goods) among buyers in the market. A necessarily concise list of needs and a necessarily limited set of product attributes will cause the emergence of submarkets with different, but commonly held need hierarchies which translate into market shares for the competing goods. These appear as the vertices and edges of the consumption space in Figure 1, as depicted in Westgren and Wuebker (2019). The hierarchy of needs is a missing element in the model that WW build from the Lancaster (1966, 1971) approach that permits compensatory utility assessments for buyers. When a noncompensatory utility function, such as a needs hierarchy, is imposed, the vertices (i.e., product loyalty) become more logical and better defined. This makes the entrepreneurial action of product design clear. It should improve WW's analysis of (product) innovation rents; product design responds to the entrepreneur's subjective assessment of the

unmet needs in some target markets. Moreover, this is clearly the exercise of entrepreneurial judgment (Foss and Klein 2012) that is central to the value-generating activities of both Menger's and Knight's entrepreneur.

The connection between Menger and the work by Porac and Rosa on cognitive models of product and product category emergence admits the value of methodological individualism in a manner that is not widely echoed in the literatures of management, markets, and organizations. Methodological individualism has been a central tenet of Austrian economics from Menger onward. For clarity, one should devolve the term into two claims: ontological individualism and explanatory individualism (Epstein 2015). Ontological individualism is the claim that social facts are *exhaustively determined* by facts about individuals, their actions, and their interactions. Explanatory individualism is the claim that social facts are *best explained* by individuals' facts, actions, and interactions. Epstein cautions that both claims need to be examined on the merits of the theory and methodology being addressed (as opposed to all social science).

All of the explanatory power of this Mengerian approach to entrepreneurship is based upon individual choice. To the extent that some individuals can be aggregated into target markets according to their needs, this requires no additional assumptions of group-level characteristics or shared intentionality. Eventually, there will be social interactions among sellers and among buyers across the market divide, but the resultant social facts are *additive of the individual social facts*. Thus, this approach satisfies both ontological individualism and explanatory individualism.

In sum, we can argue that much of Carl Menger's unique ontology is preserved in our account of its value for entrepreneurship research. Although Menger's successors in the Austrian tradition took his groundbreaking treatise beyond its original scope, there are important lessons for the scholarship of entrepreneurship in the *Grundsätze*. In fact, one can see that much of Fritz Machlup's list of "the most typical requirements for a true adherent of the Austrian school" (Machlup 1981) are visible in our account: (1) methodological individualism, (2) methodological subjectivism, (3) tastes and preferences expressed as subjective evaluations of goods, (4) opportunity costs, and (5) marginalism.

Beyond adherence to the traditions of Austrian economics, one hopes that this approach to the economics of entrepreneurship serves to advance contemporary thinking about the methodology of entrepreneurship research. By bringing buyer wants front and center, the calculation of entrepreneurial rents becomes less ad hoc and the design school approach can then be tied explicitly to imputation of value. And value creation is no longer about firm owners; it is about success in market entry.

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AUSTRIAN ECONOMICS AND ORGANIZATIONAL ENTREPRENEURSHIP: A TYPOLOGY

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ABSTRACT: This article develops a typology for making sense of the numerous strands of Austrian (and Austrian-related) economics and demonstrates how this typology can guide organizational entrepreneurship scholars wishing to ground their research in Austrian thought. In the process, not only are existing insights from the history of Austrian economic thought rediscovered, but clearer light is also shed on important perspectives from that tradition that have received less attention in entrepreneurship

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research. Based on the Austrian concept of entrepreneurial production and its relationship with the core concepts of knowledge and change, the typology yields four perspectives—*equilibration*, *punctuated equilibrium*, *disequilibration*, and *punctuated disequilibrium*. These perspectives' different paradigms as used in organizational research are explored, along with their ontological, epistemological, and methodological assumptions. The typology is illustrated with selected empirical examples from organizational research to spotlight the types of questions that contemporary scholars may appropriately ask and answer from each perspective.

INTRODUCTION

Austrian economics, which will celebrate its sesquicentennial in 2021, has long had a seat at the table of the history of economic ideas (Ekelund and Hébert 2014), and its proponents have played a particularly important role in building the economic foundations of entrepreneurship (Hébert and Link 2006). More recently, it has become a central pillar of organizational entrepreneurship research, featured in theoretical (Cheah 1990; Chiles, Tuggle, et al. 2010; Dew, Velamuri, and Venkataraman 2004; Mathews 2010; McMullen and Shepherd 2006), empirical (Chiles, Meyer, and Hench 2004; Chiles et al. 2013; Dean and Meyer 1996; Dolmans et al. 2014; Keyhani and Lévesque 2016; Shane 1996 2000), and programmatic (Chiles, Bluedorn, and Gupta 2007; Chiles, Vultee, et al. 2010; Foss and Klein 2012; Shane and Venkataraman 2000) work. As a school of economic thought to which many have contributed over a century and a half, Austrian economics is not a monolithic bloc; rather, it comprises a number of distinct strands or perspectives (McMullen and Shepherd 2006)—each with a unique ability to help scholars understand certain phenomena. Many organizational entrepreneurship scholars, however, appear to be unaware of this intellectual heterogeneity, leading some to unwittingly commingle concepts from different perspectives, unknowingly shoehorn ideas from one perspective into another, or simply ignore other perspectives altogether (Chiles, Bluedorn, and Gupta 2007). Consequently, the organizational entrepreneurship literature that draws from the Austrian tradition often contains inconsistencies and gaps.

This article takes a step toward addressing these problems by developing a typology that builds on Chiles, Vultee, et al. (2010) to make sense of the numerous strands of Austrian and Austrian-related economics, with a particular focus not on how the

Austrian literature itself has developed, but on how it has inspired organizational research. Consistent with the wider organization studies literature, this article takes a broad view of Austrian economics to include not only its core thinkers (F. A. Hayek, Israel M. Kirzner, Ludwig M. Lachmann, Carl Menger, Ludwig von Mises, Murray N. Rothbard), but also closely related scholars such as Joseph A. Schumpeter¹ and G.L.S. Shackle.² Based on the Austrian school's emphasis on the entrepreneurial organizing of production in service of the consumer, and the relationship between production and the core Austrian concepts of knowledge and change, the typology elaborated here yields four distinct perspectives: two firmly rooted in states of equilibrium (equilibration and punctuated equilibrium)³ and two that break sharply with the first perspective

¹ Although few (perhaps no) Austrian economists would count Schumpeter among their ranks, most organizational scholars would. Indeed, organizational scholars tend to see Schumpeter as "the preeminent Austrian economist" (see Chiles, Bluedorn, and Gupta 2007, 488). This view of Schumpeter as an Austrian economist probably obtains from his close ties to the Austrian school (e.g., Böhm-Bawerk supervised his dissertation, Wieser had a significant intellectual influence on him and vice versa; see Powell, Rahman, and Starbuck 2010) and his pursuit of Austrian themes (Vaughn 1994). For more on Schumpeter and his relationship to Austrian economics, see Ekelund and Hébert (2014), who cover Schumpeter in their chapter on "Austrian Economics."

² Shackle studied Austrian economics under Hayek and completed his dissertation under his supervision (Harcourt 1981, 139–40), albeit on a Keynesian topic. Consequently, some consider Shackle a post-Keynesian with Austrian school influences. Shackle later explored issues raised by Mises about the fundamentally indeterminate nature of a social science of human action, developed innovative subjectivist theory that engaged Austrian ideas and laid the groundwork for further Austrian research, and served as an ally to Austrian economists interested in radical subjectivism (Vaughn 1994, 75, 104, 118). In a 1978 interview, Lachmann was asked what relationship he saw between Shackle's work and that of the Austrian school. His response: "I can think of no one more distinguished or important to the fundamental Austrian ideas than Shackle ... I regard Shackle as, in fact, an Austrian" (Lachmann 1978). So too have organizational entrepreneurship scholars who draw on Austrian radical subjectivism (Chiles et al. 2013; Chiles, Tuggle, et al., 2010; Chiles, Vultee, et al. 2010; McMullen 2010).

³ The concept(s) of equilibrium in the Austrian tradition differs substantially from what is commonly seen in mainstream economics—and is usually taken for granted by organizational scholars—either in the general or the partial equilibrium tradition. Unless otherwise noted, the word *equilibrium* in this paper refers to the Austrian concept of the Wicksteedian state of rest (WSR), which, along with other Austrian ideas, is explained below in the section entitled "Core Concepts in Austrian Economics."

(disequilibration and punctuated disequilibrium). The goal is to help scholars pursue Austrian-inspired organizational entrepreneurship research in a more mindful and informed manner by providing not only an organizing scheme to make sense of the various strands of Austrian economics, but also a nuanced understanding of how each of those strands maps onto different ontological, epistemological, and methodological assumptions.

This is important because different strands of Austrian economics are undergirded by different philosophical assumptions, which play a powerful role in how we see and study entrepreneurial phenomena (Chiles, Vultee, et al. 2010; McMullen and Shepherd 2006). Indeed, different paradigms are appropriate for understanding particular phenomena and pursuing certain lines of inquiry—and not others (Burrell and Morgan 1979). Thus, the aim is to sensitize organizational entrepreneurship scholars wishing to ground their work in Austrian thought to the importance of the different ontological, epistemological, and methodological assumptions within this school as used in organizational research.

This article goes beyond previous efforts by organizational entrepreneurship scholars to make sense of Austrian ideas. For example, Pittaway (2005) summarized the philosophical assumptions of a wide range of economic approaches to organizational entrepreneurship, including Austrian economics, but treated the Austrian school as a monolith. Jeffery S. McMullen and Dean A. Shepherd (2006) focused on the philosophical assumptions of Frank H. Knight, Kirzner, and Schumpeter but did not develop an overarching typology. Chiles, Vultee, et al. (2010) explored the philosophical and methodological assumptions of neoclassical and Austrian economics approaches to organizational entrepreneurship. Although they distinguished different strands of Austrian thought, they used a single, generic objective-subjective dimension to structure their arguments, an approach criticized by some scholars (Cunliffe 2011). Although drawing inspiration from Chiles, Vultee, et al. (2010), for example, in how the typology's perspectives were titled, this work, by contrast, builds upon the fundamental Austrian idea of production as guided by the entrepreneur (Lachmann 1976; Mises [1949] 1998; Rothbard [1962, 1970] 2009) and its relationship with the core concepts of knowledge (convergent/divergent) and change (continuous/discontinuous). Further, this work explores different Austrian constructs

of equilibrium to understand markets as dynamic, real-world processes, thus providing a more comprehensive view; it does so in order to develop a typology that links each type to the broader philosophical and methodological assumptions of organizational research commonly conducted using that perspective. This typology contributes to the field of organizational entrepreneurship by not only allowing scholars to make sense of a wide range of entrepreneurial phenomena, but also guiding them to the best approach in studying the particular phenomena of interest to them.

In sum, the aim of this work is to provide guidance to organizational entrepreneurship scholars wishing to ground their research in Austrian thought. It does so by first reviewing the core concepts of equilibrium, knowledge, and change within the Austrian school of economics and explaining how these concepts have been used to develop a typology that makes sense of the numerous perspectives within this school. Next, it is shown how the typology's perspectives are all rooted in different sets of philosophical and methodological assumptions, and why this matters to Austrian-inspired organizational entrepreneurship research. In addition, the typology is illustrated using selected empirical examples drawn from the organization studies literature—all comprising an industry level of analysis—in order to spotlight the types of questions that entrepreneurship scholars can appropriately ask and answer from each perspective. The nature of the entrepreneur and of opportunities is also discussed in relation to each perspective, with the aim of helping organizational entrepreneurship scholars locate and choose the most appropriate perspective for their research efforts. Finally, organizational entrepreneurship researchers are provided with potential research questions that are illustrative of the types of phenomena with which each Austrian perspective is concerned.

A TYPOLOGY FOR CLASSIFYING AUSTRIAN IDEAS IN ORGANIZATIONAL ENTREPRENEURSHIP RESEARCH

Typologies allow scholars to order and make sense of phenomena by arranging information into distinct and somewhat homogeneous groups. The categorization of information and patterns is essential to

advance social theory and research, because classifying knowledge into homogeneous categories allows us to find differences between phenomena and to, ultimately, understand existing commonalities (Meyer, Tsui, and Hinings 1993). Each of the four quadrants of the typology presented here is rooted in specific philosophical assumptions that correspond to particular insights and ideas in which one can base future research in entrepreneurship. As such, each quadrant provides a focused way for organizational scholars to use an Austrian economics lens to make sense of entrepreneurship phenomena. These four quadrants correspond to three different paradigms, which denote different views of reality (Morgan 1980). Following Robert K. Merton (2004, 267), the term *paradigm* is used “to refer to exemplars of codified basic and often tacit assumptions, problem sets, key concepts, logic or procedure, and selectively accumulated knowledge that guide inquiry in all scientific fields.” In other words, paradigms are viewed as worldviews rooted in basic sets of beliefs that guide action (Creswell 2007). As Thomas Kuhn (1970) argued, paradigms have both intellectual and social purposes. First, they guide researchers to new definitions and questions about phenomena and, second, they “form structures within which their members can share a sense of purpose and engage in day-to-day practices of collaboration, collegiality, and ‘progress’” (Lindlof and Taylor 2011, 33).

In research, paradigms allow scholars to develop high-quality research designs by providing them with a set of philosophical assumptions regarding “the nature of reality (ontology), how the researcher knows what she or he knows (epistemology), the role of values in the research (axiology), the language of research (rhetoric), and the methods used in the process (methodology)” (Creswell 2007, 16). These philosophical stances shape the phenomena studied, the types of problems and questions posed, the particular approaches to data collection/generation and analysis, as well as the type of language used to describe and disseminate information (Creswell 2007). In this paper, the ontology, epistemology, and methodology of each paradigm are explored as a means to improve clarity regarding—and ultimately provide guidance on—how Austrian economics can be used as a lens to understand entrepreneurship phenomena.

CORE CONCEPTS IN AUSTRIAN ECONOMICS

At the essence of the Austrian school of economics is praxeology, a term developed by Mises ([1949] 1998). Praxeology refers to the science of human action, i.e., the conscious actions taken by individuals toward a chosen goal. As such, it “rests on the fundamental axiom that individual human beings act” (Rothbard 1997, 58), with action consisting of the processes by which one selects a particular alternative over another by using specific means to pursue desired ends (Vaughn 1994). Fundamental to an understanding of human action is the notion that an individual’s actions take place over time (Mises [1949] 1998) and that his/her choices are rooted in knowledge that is only known to that individual (Hayek 1945). In the realm of entrepreneurship, Austrian economics treats the individual (i.e., the entrepreneur) as an organizer of production processes (Bylund 2016; Lachmann 1976; see also Mises [1949] 1998; Rothbard [1962, 1970] 2009). It is in production processes subject to unexpected change—which by their nature require individuals to combine and continually recombine resources—that “we find the real function of the entrepreneur” (Lachmann 1956, 13). Consistent with Austrian precepts, such processes take time to play out and are bounded by the entrepreneur’s limited knowledge (or ignorance).

Because Austrian economics places entrepreneurs at the very core of the market process, it is commonly referred to as the economics of time and ignorance (Vaughn 1994, 134)—a term that derives from John Maynard Keynes’s (1964, 155) “dark forces of time and ignorance,” which point out “the importance of the basic problems with which real time confronts individual actors” (O’Driscoll and Rizzo 1996, xiv). Although Keynes was quite far from being an Austrian, as a neoclassical economist he did use subjectivist elements in his economic analyses. The Austrian school of economics is rooted in dynamic subjectivism, as opposed to the static subjectivism of neoclassical economics. Unlike static subjectivism, dynamic subjectivism recognizes creativity and the uncertain nature of human action that unfolds through processes of change (Vaughn 1994). To study this dynamism, Austrian scholars have developed different ways of thinking about equilibrium.

EQUILIBRIUM

The Austrian school recognizes the market as a dynamic process that is always in disequilibrium. Thus, contrary to mainstream views, it does not use a single theoretical idea of static equilibrium; rather, it uses different dynamic equilibrium-like constructs to understand and deal with market dynamism. Recent work by Per Bylund (2019) recognizes this flawed use of static equilibrium in Austrian theorizing while problematizing Kirzner. Three of these Austrian equilibrium-like constructs are purely theoretical: (1) The evenly rotating economy, or ERE (Rothbard [1962, 1970] 2009), an imaginary construction where changes in preference and satisfaction are held constant while human action persists but merely as repetitive routine (Packard 2019, 6). (2) The final state of rest, or FSR, toward which all action is “pulled” and where there would be no action because all dissatisfaction would disappear; this state, however, “is constantly changing, as preferences, knowledge, technology, and expectations shift over time” and is thus never reached (Mises [1949] 1998; Packard 2019, 5). (3) The “Nirvana state of rest,” or NSR, in which all action becomes unnecessary because “no future knowledge, technology, or resources can attain a higher state of well-being; all possible improvements (forevermore) have been exploited, and we are at a true optimal state” (Packard 2019, 9). These equilibrium constructs, which are hypothetical, are theoretically similar to the mainstream concept of equilibrium (i.e., absence of new production and lack of change in the subjective valuations of market participants), which is, by definition, static. Austrian ideas about equilibrium, which are rooted in very different underlying assumptions, are fundamentally based on a market process that constantly reaches some kind of temporary equilibrium but that is dynamic in nature. Being hypothetical, these constructs serve only for economic reasoning and thus are not helpful to this discussion.

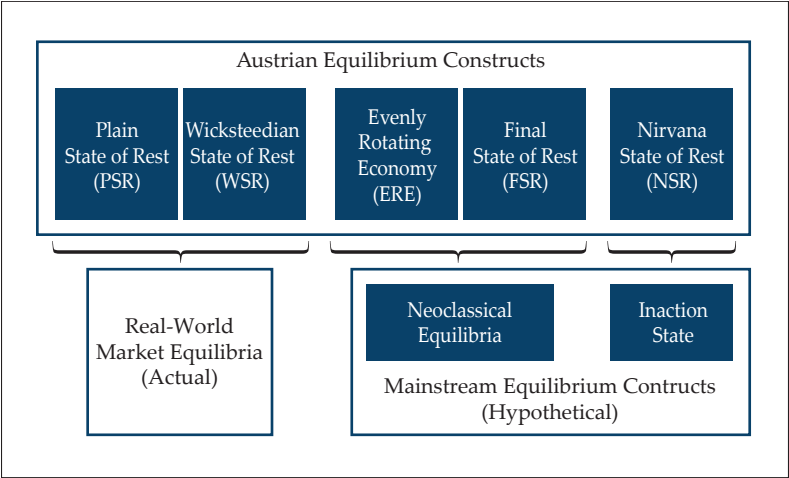
Two additional equilibrium constructs that appear in Austrian theorizing and that are more closely related to this discussion because they are grounded in the real world are: (1) the plain state of rest, or PSR, and (2) the fully arbitrated state of rest, or Wicksteedian state of rest, WSR (Packard 2019; Salerno 1994). The first state, the PSR, is reached every single time an exchange takes place, when all parties in a transaction momentarily exhaust the possible

gains from trade. It is a momentary equilibrium that persists so long as “the prevailing state of valuations of the marginal pairs in each market remain constant” (Salerno 1994, 97–98). It is reached in a given market, at a given time, when all trades have been temporarily satisfied. At that particular time, all buyers and sellers have carried out the transactions that they deemed satisfactory at the current prices, to the point when everyone in the market is satisfied with the current situation and sees no reason to pursue further exchanges (Mises [1949] 1998, 245–251).⁴ The second state, the WSR, is more general; it is based on Wicksteed’s idea of the fruit market, in which the stocks of perishable goods and consumer valuations remain fixed for a given, foreseeable duration. It was reintroduced in Austrian circles by Joseph T. Salerno (1994) as a state between the FSR and the PSR. A WSR is reached “when preferences, supplies, and available parties to trade remain constant over some period of time” (Packard 2019, 6). This state lasts for as long as the prices for all goods in a given market remain stable; “[f]or the rest of the market day, each successive set of transactions takes place at equilibrium prices and thus generates a momentary WSR until the arrival of the next group of buyers on the scene” (Salerno 1994, 100).

Unlike in a PSR, where prices may change moment after moment, in a WSR, the different market criteria are stable enough to keep an equilibrated price and to get rid of arbitrage opportunities for a given period of time in a given place. An example of a situation close to a WSR is supermarket prices, which remain stable even after numerous transactions and end up facilitating exchanges because of price stability. This price stability is the basic idea behind general equilibrium. Figure 1 shows different understandings of equilibrium in terms of Austrian equilibrium constructs, real-world market equilibria, and mainstream equilibrium constructs.

⁴ In some specific empirical cases, there may be a theoretical difference between initial price paid or agreed upon by parties and the actual PSR (two-party market-clearing) price. However, this analysis falls outside the scope of this paper and thus does not affect our argument.

**Figure 1. Different Understandings of Equilibrium:
Comparisons and Rough Equivalences**



Significantly, the equivalences in figure 1 between Austrian and mainstream equilibrium constructs are neither perfect nor possible. The reason for this is that, for example, neoclassical economics does not aim to explain market prices, but rather hypothetical prices (as in full information, Nash equilibrium, perfect competition, etc.). As has been seen, the Austrian approach differs substantially from the neoclassical one in that it seeks to explain real-world prices (Klein 2008; Manish 2014). The aim with figure 1 is simply to facilitate understanding of Austrian ideas by comparing them to real-world market equilibria and mainstream equilibrium constructs.

In short, in discussions of entrepreneurship and production, Austrian economics recognizes two variants of real-world equilibrium—the PSR and WSR. The typology presented here is grounded in the latter, because entrepreneurial action starts at a point close to the WSR, eventually moving markets either closer or farther away from equilibrium. Furthermore, according to proponents of the Austrian school, “economics should be about how humans pursue their projects and plans over time, and with limited knowledge of present conditions and with pervasive uncertainty about the future” (Vaughn 1994, 4; see also Lachmann 1976 and Rothbard [1962, 1970] 2009). Thus, Austrians also recognize

that equilibrium situations occur based on two important concepts: ignorance (or limited knowledge of the parts involved) and time (or the passage of time required for production to yield consumer goods—a process that relates to change). Discussed in the next two subsections are the typology's dimensions—two core concepts that are central to the entrepreneurial organizing of production: knowledge (as convergent or divergent) and change (as continuous or discontinuous).

Knowledge

While neoclassical economists tend to assume perfect and homogeneous knowledge in the processes of decision-making and acting, Austrian economists view knowledge as imperfect, heterogeneous, complex, disaggregated, and dispersed (Vaughn 1994), as well as tacit and local (Hayek 1945). This conception of knowledge lets us understand why for Austrians human action will always result in unintended and uncertain outcomes. Uncertainty is one of the basic tenets of Austrian economics and is also a corollary of ignorance (O'Driscoll and Rizzo 1996). Thus, an understanding of ignorance, or limitation of knowledge, is crucial in Austrian thought.

Hayek, in his seminal paper "The Use of Knowledge in Society," developed an understanding of knowledge not in terms of general laws, but rather "the particular circumstances of time and place" (Hayek 1945, 521). Later he further broadened understanding of knowledge in economic analyses by characterizing knowledge as "private, empirical, often tacit, not all gained through price signals, and often the source of surprise" (O'Driscoll and Rizzo 1996, 102). Hayek's characterization of knowledge as tacit was based on Michael Polanyi's ideas (Gourlay 2006). For Polanyi, knowledge has a fundamental and indispensable tacit component, even so-called *scientific knowledge*. Indeed, he suggests "that into every act of knowing there enters a passionate contribution of the person knowing what is being known, and that this coefficient is no mere imperfection but a vital component of his knowledge" (Polanyi 1958, viii). Despite Hayek's attempts to expand our understanding of knowledge, the definition of this concept remains rather vague. For instance, although Hayek (1945) argued that knowledge is a function of the "man on the spot" and that fragmented and tacit

knowledge is coordinated through the market process (Gloria-Palermo 1999), he did not make explicit what knowledge actually is. This has provided scholars within the Austrian school with the freedom to develop their interpretations of the concept, as can be seen in the knowledge arguments made by Kirzner, Schumpeter, and Lachmann.

More specifically, Kirzner (2005) distinguishes action knowledge from information knowledge. While action knowledge refers to the knowledge that shapes actions, information knowledge is what allows entrepreneurs to grasp opportunities. As Kirzner (2005, 80) notes, “The one who grasped the opportunity was, presumably through his alertness.” For Kirzner (2005), it is alertness that transfers information knowledge into action knowledge and, given the economic role of advertising and learning, information knowledge tends to be convergent. For Schumpeter, unique and idiosyncratic knowledge arises from technological breakthroughs (Sarkar et al. 2006). Innovation entails new knowledge, which is imitated or modified by the swarm of new market entrants who are incentivized by the monopolistic profits generated by innovators. This eventually results in knowledge, manifested as innovation, moving toward convergence (see Packard and Bylund 2018). Finally, Lachmann’s interpretation of knowledge contrasts starkly with Kirzner’s and Schumpeter’s. Lachmann considers knowledge as both interpretations of past experience and expectations of future action (Gloria-Palermo 1999). As such, knowledge is continually changing because of the “continual interpretation and re-interpretation of experience” and the “continual forming and re-forming of expectations,” which “makes accurate prediction of the future not merely difficult but largely impossible” (Chiles, Bluedorn, and Gupta 2007, 483). Thus, for Lachmann, knowledge is divergent given that the idiosyncratic knowledge possessed by individuals is not easily reconciled and that these individuals have the ability to create, in their minds, divergent expectations of the future.

In short, for some Austrians, such as Hayek and Kirzner, the market process allows for the coordination of fragmented and tacit knowledge (Gloria-Palermo 1999). For others, such as Lachmann, when one incorporates past knowledge and future expectations, which are subjective, the result is knowledge divergence that prevents plan coordination (Chiles, Bluedorn, and Gupta 2007).

This shows that within the broad tradition of the Austrian school of economics there are two opposing views of knowledge and how it changes over time. Based on these two opposing views, this article breaks the knowledge dimension down into a convergence-divergence dichotomy, represented horizontally in the typology.

Change

When Austrians acknowledge the temporal dimension of market processes, they implicitly accept the existence of change. Indeed, as shown above, change and knowledge are natural bedfellows in the market process: change can either lead to a convergence or divergence of knowledge. Thus, knowledge is not a static concept, but one that changes over time. Such changes in knowledge are the result of the human experience of time and, ultimately, of learning (Hayek 1945; Vaughn 1994). Change, which is a constant in a world composed of humans acting upon their plans, has been described as either a continuous or discontinuous process. Continuous change, or first-order change, occurs in stable systems that do not suffer abrupt modification. This type of change, as Haridimos Tsoukas and Robert Chia (2002, 567) have argued, is “the reweaving of actors’ webs of beliefs and habits of action to accommodate new experiences obtained through interactions.” Using the metaphor of the acrobat on a high wire, they explain that stability is maintained by continuously correcting one’s imbalance (Tsoukas and Chia 2002). In Austrian economics, this relates to Kirzner’s (1973) view of a world in continuous change directed to a FSR, always coming to different PSRs and moving toward a WSR.

On the other hand, discontinuous change, or second-order change, entails abrupt shifts in the state of the existing system, resulting in the inexistence of equilibrium on the horizon. For instance, Shackle suggests that market processes go through abrupt and unexpected change in what he calls a kaleidic society—one “in which sooner or later unexpected change is bound to upset existing patterns” (Lachmann 1976, 54); this is a society “interspersing its moments or intervals of order, assurance and beauty with sudden disintegration and a cascade into a new pattern” (Shackle 1972, 76). Further, Schumpeter views change as a process of creative destruction in which entrepreneurs create new resource

combinations in a discontinuous manner (Schumpeter 1934) and in response to changes in technical knowledge (Schumpeter 1942; Shane 1996). Thus, for authors such as Schumpeter and Shackle, change takes place in a discontinuous manner rather than in a continuous way, as argued by Mises and Kirzner (see D’Andrea and Mazzoni 2019). Based on these two differing views, the change dimension can be broken down into a continuous-discontinuous dichotomy, represented vertically in the typology.

A TYPOLOGY BASED ON KNOWLEDGE AND CHANGE

The typology presented in this article illustrates four different perspectives within the Austrian school of economics broadly understood. Although four different perspectives are proposed, only three different paradigms—each with its specific ontological, epistemological, and methodological assumptions—underlie these perspectives. As explained above, ontology refers to the nature of reality, epistemology asks how the researcher knows what s/he knows, and methodology describes the methods used in the research process (Creswell 2007). The assumptions stemming from each one of the perspectives presented in this typology are based on a combination of insights relating to alternative paradigms guiding research, as suggested by Guba and Lincoln (2005) and Chiles, Vultee, et al. (2010). The names of the perspectives represented in this typology are based on the forces that propel the market process: *equilibration*, *disequilibration*, *punctuated equilibrium*, and *punctuated disequilibrium*. For example, the convergence of knowledge will tend to generate a convergence of action from both entrepreneurs and consumers and, consequently, a tendency toward equilibrium; conversely, when knowledge is divergent, there will be a tendency toward disequilibrium. Figure 2 depicts the typology, with its two dimensions of knowledge and change and its four perspectives. It includes the major Austrian economists who are associated with—and inspire organizational work within—each perspective, as well as information regarding the type of paradigm, ontology, epistemology, methodology, research exemplar, and entrepreneurship authors specific to each different perspective. Below the typology’s four perspectives are explained in greater depth.

Figure 2. A Typology of Four Austrian Perspectives for Entrepreneurship Research: Key Austrian Economists, Paradigm, Ontology, Epistemology, Methodology, Empirical Examples, and Entrepreneurship Authors

		Knowledge	
		Convergent	Divergent
Change	Continuous	<p>Equilibration</p> <ul style="list-style-type: none"> • Austrian economists: Böhm-Bawerk, Hayek, Kirzner, Menger, Mises, Rothbard, and Wieser • Paradigm: Postpositivist • Ontology: Realist • Epistemology: Modified dualist/objectivist • Methodology: Mostly quantitative/statistical/variance methods; some qualitative/variance methods; falsification of hypotheses • Empirical examples: Asaba and Lieberman (1999); Meyer, Brooks, and Goes (1990) – “The 1960s” • Authors: Shane (2000); Shane and Venkataraman (2000); Dew, Velamuri, and Venkataraman (2004); McMullen and Shepherd (2006); Kor et al. (2007); Loasby (2007); Harper and Endres (2010); Shane (2012); Valliere (2013) 	<p>Disequilibration</p> <ul style="list-style-type: none"> • Austrian economists: Lachmann, (Shackle) • Paradigm: Social constructivist/interpretivist • Ontology: Relativist • Epistemology: Transactional/subjectivist; co-created findings • Methodology: Process methods; hermeneutical/dialectical • Empirical examples: Hambrick et al. (2005); Meyer, Brooks, and Goes (1990) – “The 1970s” • Authors: Dew, Velamuri, and Venkataraman (2004); Greenwood and Suddaby (2006); Chiles, Bluedorn, and Gupta (2007); Loasby (2007); Foss and Ishikawa (2007); Kor et al. (2007); Chiles, Tuggle, et al. (2010); Harper and Endres (2010); Mathews (2010); Dolmans et al. (2014)
	Discontinuous	<p>Punctuated Equilibrium</p> <ul style="list-style-type: none"> • Austrian economists: Schumpeter • Paradigm: Critical realist • Ontology: Realist • Epistemology: Modified dualist/objectivist • Methodology: Mostly quantitative/statistical/variance methods; some qualitative/variance methods; falsification of hypotheses • Empirical examples: Anderson and Tushman (1990); Meyer, Brooks, and Goes (1990) – “The 1980s” • Authors: Guth and Ginsberg (1990); Shane (1996); Shane and Venkataraman (2000); Dew, Velamuri, and Venkataraman (2004); Venkataraman (2004); McMullen and Shepherd (2006); Kor et al. (2007); Loasby (2007); Shane (2012); Valliere (2013) 	<p>Punctuated Disequilibrium</p> <ul style="list-style-type: none"> • Austrian economists: Shackle, (Lachmann) • Paradigm: Social constructivist/interpretivist • Ontology: Relativist • Epistemology: Transactional/subjectivist; co-created findings • Methodology: Process methods; hermeneutical/dialectical • Empirical examples: Chiles, Meyer, and Hench (2004); Chiles, Vultee, et al. (2010) • Authors: Chiles, Tuggle, et al. (2010); Chiles et al. (2013)

Equilibration

In this perspective, the entrepreneur is described as an equilibrator who drives the market process “towards the hypothetical state of equilibrium” (Kirzner 2009, 145), the FSR or the ERE, as explained above. In fact, entrepreneurs and their decisions and actions are viewed as playing a critical role in equilibrating market movements. As such, entrepreneurship is about how entrepreneurs’ decisions disturb the existing market order—a process that emerges from entrepreneurs’ alertness (Kirzner 2009)—and drive the market closer and closer to the ERE. Thus, driving the market process are alert entrepreneurs who continually discover preexisting opportunities according to “their subjective interpretation of past experience” (Chiles, Vultee, et al. 2010, 140)—opportunities that exist “out there” and that are merely “waiting to be noticed” (Kirzner 1973, 74). As a result of the exploitation of these opportunities and the forces of equilibration (Kirzner 1997), markets have a general and natural tendency to gravitate toward a state of equilibrium (Chiles, Bluedorn, and Gupta 2007). However, this state is never reached, as this would entail the unrealistic case of having no opportunities and no competition (Kirzner 1973 1997). Instead, the WSR keeps changing moment after moment for the various economic goods in the different geographical markets. Thus, in the equilibration perspective, entrepreneurs continually discover preexisting opportunities that they then exploit, allowing them to “correct market inefficiencies” and “coordinate dispersed knowledge” (Chiles, Vultee, et al. 2010, 142), driving markets closer and closer to the WSR. This perspective is characterized by continuous change and convergent knowledge. Key Austrian economists taking an equilibration perspective include Böhm-Bawerk, Hayek, Kirzner, Menger, Mises, Rothbard and Wieser.

The equilibration perspective is rooted in a postpositivist paradigm. Significantly, although Austrian economics uses axioms and logical deduction, it does not embrace postpositivism to generate theoretical insights. Yet organizational work that draws from equilibration’s key Austrian thinkers is generally grounded in this paradigm, thus taking a scientific approach to research; as such, it tends to be reductionist, logical, deterministically based on a priori theories, with an emphasis on data collection and

cause-effect oriented (see Creswell 2007). In practice, postpositivist scholars pursue research in a series of logically related steps by using rigorous methods of data collection and analysis while allowing for multiple levels of data analysis and using validation approaches. Additionally, they do not believe in a single reality; rather, they are on the lookout for participants' multiple perspectives (Creswell 2007). Specifically, entrepreneurship research based on a postpositivist paradigm is characterized by a realist ontology, relating to fairly objectivist philosophical assumptions (Chiles, Vultee, et al. 2010); a modified dualist/objectivist epistemology, in which findings are considered to be probably true (Guba and Lincoln 2005); and a mostly quantitative/statistical/variance methodology, although it may include some qualitative methods (Chiles, Vultee, et al. 2010; Guba and Lincoln 2005).

An example of an empirical study taking an *equilibration* perspective is Asaba and Lieberman (1999). In their study of the Japanese soft drink industry, the authors explore the underlying causes and mechanisms relating to increased behavior similarity among competing firms. In the Japanese soft drink industry, new products are quickly followed by imitations from competitors. This mimicking behavior leads to increased behavior similarity and to markets gravitating toward a state of equilibrium. Another example consistent with the equilibration perspective is Meyer, Brooks, and Goes (1990, 98) during the period of "The 1960s: Evolution Via Institutional Isomorphism." In their historical analysis of the San Francisco Bay area hospital industry, the authors found that during the 1960s this industry was characterized by incremental, or continuous, change resulting in the homogenization of the industry. Other works that fall within the equilibration perspective include Shane (Shane 2000, 2012), Shane and Venkataraman (2000), Dew, Velamuri, and Venkataraman (2004), McMullen and Shepherd (2006), Kor, Mahoney, and Michael (2007), Loasby (2007), Harper and Endres (2010), and Valliere (2013).

Punctuated Equilibrium

Schumpeter, with his notion of creative destruction, is the key economist taking a punctuated equilibrium perspective. Creative destruction refers to a dynamic process in which new entrants

introduce superior new technologies to the market, making existing technologies obsolete and forcing incumbents to exit the market (Pe'er and Vertinsky 2008). The monopolistic profits that new entrants may realize serve as an incentive for innovation, attracting more players to the market; in turn, this results in economic rents eventually being competed away and in the market returning to equilibrium until another innovation occurs (Packard and Bylund 2018; Schumpeter 1934). This process comprises two distinctive features. First, innovation results in markets shifting through brief and violent upheavals from one equilibrium state to another (Chiles, Vultee, et al. 2010), suggesting the occurrence of discontinuous change. Second, a new wave of entrepreneurs is able to enter the market and compete rents away, implying that innovative technology and knowledge are ultimately shared and coordinated through the market process (McMullen and Shepherd 2006). For these reasons, the punctuated equilibrium perspective is characterized by discontinuous change and convergent knowledge. Importantly, this is a theoretical construction; in practice, Schumpeterian shocks spread to the market through the production process and could take a relatively long time to do so. Before the shock, the market tends toward equilibrium and is approaching a WSR; when the shock arrives, it profoundly modifies the capital structure (i.e., capital and prices will be reallocated and readjusted as in Lachmann 1976; Rothbard [1962, 1970] 2009) and the formerly existing foreseeable WSR gives way to a completely different WSR. As such, the shock diverts the WSR somewhere very different from where it was thought to be going before. Although not using the terms equilibration and punctuated equilibrium, previous work has demonstrated that in real-world markets both perspectives are necessary to economic development and that they tend to coexist (e.g., D'Andrea and Mazzoni 2019; Packard and Bylund 2018). This helps explain why in this typology some entrepreneurship work appears in both the equilibration and punctuated equilibrium perspectives.

Organizational research conducted within this perspective is often rooted in a critical realist paradigm. Critical realists believe that there is a world that exists independently of human consciousness, with knowledge about this world of events being socially constructed (Denzin and Lincoln 2005). Furthermore, critical realists are interested in not only explaining but also

changing the world. To that end, they seek to identify, reflect on, and change the structures underlying human action (Alvesson and Sköldberg 2009). In regard to entrepreneurship, this means that the entrepreneur can actively respond to and shape the world (Chiles, Vultee, et al. 2010)—a perspective that is characterized by a realist ontology grounded in a “real” reality that one can only apprehend in an imperfect and probabilistic manner (Chiles, Vultee, et al. 2010; Guba and Lincoln 2005). Additionally, this paradigm is typified by a modified dualist/objectivist epistemology in which findings are considered to be probably true (Guba and Lincoln 2005) and by a mostly quantitative/statistical/variance methodology, although it may include some qualitative methods (Chiles, Vultee, et al. 2010; Guba and Lincoln 2005). Although the critical realist paradigm appears to be similar to the postpositivist paradigm, it is important to note that the latter is characterized as more objectivist than the former (Chiles, Vultee, et al. 2010).

Anderson and Tushman’s (1990) longitudinal study of the U.S. cement, glass, and minicomputer industries is consistent with the perspective of punctuated equilibrium. Not only do the authors mention Schumpeter in their opening paragraph, they also frame their study in a way that is consistent with Schumpeter’s view of change. Particularly, the authors “empirically explore when and how dominant designs emerge from technological discontinuities” (Anderson and Tushman 1990, 604) to illustrate that technological discontinuities, or disrupting innovations, trigger periods of upheaval that are followed by a period of order, which in turn is disrupted by a new technological discontinuity. Another empirical example is Meyer, Brooks, and Goes’s (1990, 101) discussion of the period of “The 1980s: Industry Revolution.” In their historical analysis of the San Francisco Bay area hospital industry, the authors found that, during the 1980s, this industry was characterized by discontinuous changes leading to restructuration, reconstitution, and adaptation. Lastly, other entrepreneurship works that fall within the punctuated equilibrium perspective include Guth and Ginsberg (1990), Shane (1996, 2012), Shane and Venkataraman (2000), Dew, Velamuri, and Venkataraman (2004), Venkataraman (2004), McMullen and Shepherd (2006), Kor, Mahoney, and Michael (2007), Loasby (2007), and Valliere (2013).

Disequilibration and Punctuated Disequilibrium

Lachmann and Shackle are the key economists of disequilibration and punctuated disequilibrium, respectively. Their assumptions are similar in that their view of the world is rooted in the same paradigm. For this reason, they are often grouped under the “Lachmann-Shackle position.” As Walter E. Grinder (1977, 20) explains,

The Lachmann-Shackle position that forces of divergence tend to outweigh forces of convergence makes a general market equilibrium unlikely. According to Lachmann, the strength of the forces of convergence depends almost entirely on the activities of entrepreneurs. If entrepreneurs take advantage of the price-cost discrepancies attending changing circumstances, the entrepreneurial function of using resources in search of profit (the process of innovation and imitation) will, as most Austrian economists agree, lead to a convergence of the plans of individuals in markets. However, because change is ever present and unpredictable, individuals have different expectations about the character and extent of change. It is this factor more than any other that precludes anything approaching a macroeconomic general equilibrium in the uncertain world of market activity.

The Lachmann-Shackle position is rooted in radical subjectivism—an approach that recognizes entrepreneurs’ divergent interpretations of complex phenomena and, thus, their divergent knowledge. In this disequilibrium-based approach, divergent knowledge eventually results in increasingly heterogeneous markets as entrepreneurs’ plans and actions collide, forcing them to revise and change their subjective future expectations and knowledge (Chiles, Vultee, et al. 2010). Although Lachmann and Shackle have a similar take on knowledge divergence, they do differ in their approach to change. In disequilibration, change in the market process has a continuous nature. For instance, Lachmann is known for advocating disequilibrium processes in a world of continuous change and reorganization (Harper and Endres 2010; Lachmann 1956).⁵ In punctuated disequilibrium, market

⁵ Lachmann acknowledged the operation of both equilibrating and disequilibrating forces in market processes (see, e.g., Lachmann 1986). His early work in capital theory gave the distinct impression that equilibrating forces dominated (Barbieri 2017; Lewin 1997), while his later work, which was more radically subjective, emphasized or at least logically implied the dominance of disequilibrating forces

processes change in a kaleidic manner; that is, markets shift, or change, abruptly from one disequilibrium phase to another (Chiles, Vultee, et al. 2010; Shackle 1967). Thus, while the disequilibrium perspective involves continuous change and divergent knowledge, the punctuated disequilibrium perspective entails discontinuous change and divergent knowledge. Furthermore, in both disequilibrium and punctuated disequilibrium entrepreneurial actions drive the market away from the WSR; however, in punctuated disequilibrium this process occurs in abrupt punctuations. Reminiscent of Schumpeterian shocks, an action or event, or a set of actions and events, abruptly punctuates the disequilibrium market, kaleidically shifting it from one disequilibrium phase to another.

Organizational research conducted within the disequilibrium and punctuated disequilibrium perspectives is often grounded in a social constructivist/interpretivist view of the world—i.e., they are both rooted in the same paradigm. In this paradigm, researchers search for an understanding of the world surrounding them by gathering subjective and intersubjective meanings of experience (Creswell 2007; Morgan 1980). Such meanings are thus complex, multiple, and varied (Creswell 2007). Indeed, researchers may even find that different individuals will have different perspectives of phenomena, leading to evidence of multiple realities (Creswell 2007; Morgan 1980). The term *social constructivism* refers to the idea that meanings are formed by interacting with others (Creswell 2007). In practice, social constructivist/interpretivist researchers ask general and broad questions that lead participants to build the meaning of phenomena through discussions or interactions with others. This allows researchers to address ongoing and dynamic processes of social interaction while focusing on context to understand the cultural and historical settings of participants and

(Barbieri 2017; Boehm et al. 2000; Chiles, Vultee, et al., 2010; Lewin 2001, 2007). Barbieri (2017) dubs this evolution of Lachmann's thought Lachmann I and Lachmann II, respectively. Our placement of, and emphasis on, Lachmann in the disequilibrium quadrant of the proposed typology accords with Lachmann II. Although organizational entrepreneurship scholars pursuing Austrian radical subjectivism have embraced this Lachmann II interpretation (Chiles, Vultee, et al., 2010), they have also observed in Lachmann's later work "a two-stage process, in which early market equilibration, attributable to close imitation of innovators' products, eventually yields to market disequilibrium, attributable to secondary innovations that differentiate rivals' products" (Chiles, Vultee, et al., 2010, 159).

phenomena (Creswell 2007). Additionally, social constructivists/interpretivists recognize that their own historical, personal, and cultural experiences shape their interpretations. Thus, the goal of these researchers is to make sense of, or interpret, the meanings the world has to different individuals based on their own backgrounds (Creswell 2007; Morgan 1980). This is why social constructivism and interpretivism are often combined (Creswell 2007).

Entrepreneurship research based on a social constructivist/interpretivist paradigm is characterized by a relativist ontology (Chiles, Vultee, et al. 2010), referring to “local and specific co-constructed realities” (Guba and Lincoln 2005, 195); a transactional/subjectivist epistemology, meaning that findings are co-created; and a process/hermeneutical/dialectical methodology (Chiles, Vultee, et al. 2010; Guba and Lincoln 2005). Scholars taking a social constructivist/interpretivist approach attempt to preserve the interpretations of those under study as well as their own, even if they are different or contradictory. This may lead to different perspectives, or multiple realities, which paves the way for a holistic understanding of the phenomenon under study (Stake 1995).

A research example that is consistent with the disequilibrium perspective of Austrian economics is Hambrick et al. (2005). In their empirical study of the U.S. steel industry, the authors challenge the traditional view of institutional theory as argued by DiMaggio and Powell (1983) by suggesting that organizations do not become increasingly similar over time due to isomorphic pressures. Rather, they become less similar due to several macrosocial trends that the original authors did not anticipate (Hambrick et al. 2005). The way these authors frame their study is consistent with a disequilibrium perspective, in which continuous change throughout time results in knowledge divergence and, consequently, a movement away from the WSR. Moreover, diversity is an indicator of disequilibrium (e.g., Kirzner 1973); thus, increasing diversity is an indicator of disequilibrium. Another empirical example taking a disequilibrium perspective is Meyer, Brooks, and Goes’s (1990, 100) discussion of the period of “The 1970s: Organizational Adaptation.” In their historical analysis of the San Francisco Bay area hospital industry, the authors found that during that period this industry was primarily characterized by incremental change and adaptation in different directions, leading to increasing interorganizational

diversity. Lastly, other work in entrepreneurship that falls within the disequilibration perspective of the typology includes Dew, Velamuri, and Venkataraman (2004), Greenwood and Suddaby (2006), Chiles, Bluedorn, and Gupta (2007), Loasby (2007), Foss and Ishikawa (2007), Kor, Mahoney, and Michael (2007), Chiles, Tuggle, et al. (2010), Harper and Endres (2010), Mathews (2010), and Dolmans et al. (2014).

Chiles, Meyer, and Hench (2004) is an example of research that is consistent with the punctuated disequilibrium perspective. Their study of the musical theaters of Branson, Missouri, found that new organizational collectives evolve in a perpetual state of disequilibrium through an extended series of punctuation events, each of which ushers in a new disequilibrium phase qualitatively different from the one before. Such findings, the authors argued, “support a ‘punctuated *disequilibrium*’ view of change” (514, emphasis in original). Another empirical example of the same perspective is Chiles, Vultee, et al. (2010). Analyzing the Japanese beer industry, the authors concluded that this industry is characterized by disequilibrium market processes, continual disruption, and increasing heterogeneity. The authors’ analysis also provides an illustration of one methodological approach (hermeneutics; see Lachmann 1991) that can be used to study entrepreneurial phenomena from a radical subjectivist perspective. Lastly, other work in entrepreneurship that falls within the punctuated disequilibrium perspective of the typology include Chiles, Tuggle, et al. (2010) and Chiles et al. (2013).

FUTURE RESEARCH USING THE TYPOLOGY

Keeping in mind the broad philosophical assumptions relating to each of the typology’s perspectives, let us now take a closer look at the different accounts of the nature of the entrepreneur and the nature of opportunities by the major Austrian economists within each perspective (see figure 3 for a summary). An overview of these is provided next as a basis for developing possible research questions (shown in figure 4) that scholars may find of interest in future research and that are appropriate for each perspective. Because this work is building on the work of Chiles, Vultee, et al. (2010), some of the research questions developed by these authors have been included intentionally, appropriately placed and organized within the typology’s four perspectives.

Figure 3. A Typology of Four Austrian Perspectives for Entrepreneurship Research: The Nature of the Entrepreneur and Opportunities

		Knowledge	
		Convergent	Divergent
Change	Continuous	<p>Equilibration</p> <ul style="list-style-type: none">• Nature of the entrepreneur: The entrepreneur is imaginative, bold, and alert, and drives the market toward equilibrium. The entrepreneur is an arbitrageur/middleman who hopes to make a profit while acting in the interest of the consumer.• Nature of opportunities: Preexistent and waiting to be discovered. Opportunities are discovered by the entrepreneur based on his/her interpretations of past experiences.	<p>Disequilibration</p> <ul style="list-style-type: none">• Nature of the entrepreneur: Through creative intelligence, the entrepreneur reduces chaos to order. In a world of unexpected change, the entrepreneur turns failure into success while benefiting from the discomfiture of others. S/he does so by forming combinations of heterogeneous capital that have a disequilibrating effect on the market.• Nature of opportunities: Created and continually recreated through entrepreneurs' creative imaginations. Opportunities are realized through the combination and continuous recombination of capital resources.
	Discontinuous	<p>Punctuated Equilibrium</p> <ul style="list-style-type: none">• Nature of the entrepreneur: The entrepreneur is an innovator who disrupts business routines and market equilibria through opportunity exploitation. The entrepreneur is a "creator" who breaks with old to create new (creative destruction). This results in markets evolving from a long period of equilibrium through brief upheaval to another such equilibrium.• Nature of opportunities: Preexisting, widely known, and the result of scientists' innovations. Opportunities are exploited through new resource combinations.	<p>Punctuated Disequilibrium</p> <ul style="list-style-type: none">• Nature of the entrepreneur: The entrepreneur is a decision-maker and risk bearer who spots, creates, recreates, and exploits new opportunities. S/he is ignorant of the future but imagines future possibilities. This leads the entrepreneur to act under conditions of uncertainty. Markets experience kaleidic shifts from one disequilibrium phase to another as a natural part of an ongoing disequilibrium process.• Nature of opportunities: Neither preexisting nor waiting to be discovered. Opportunities are created by the forward-looking mental acts of entrepreneurs.

Figure 4. A Typology of Four Austrian Perspectives for Entrepreneurship Research: Potential Research Questions

		Knowledge	
		Convergent	Divergent
Change	Continuous	<p>Equilibration</p> <p>(1) How do entrepreneurs continually discover existing opportunities?</p> <p>(2) How do entrepreneurs continually correct market errors (due to market ignorance and dispersed knowledge)?</p> <p>(3) How do entrepreneurs ultimately drive markets from a disequilibrium state toward the WSR?</p>	<p>Disequilibration</p> <p>(1) How do entrepreneurs continually create new opportunities?</p> <p>(2) How do competitors in a market react to entrepreneurs' disequilibrating actions?</p> <p>(3) How do entrepreneurs' combinations of heterogeneous capital resources and regroupings of resources have a disequilibrating effect on the market?</p>
	Discontinuous	<p>Punctuated Equilibrium</p> <p>(1) How do entrepreneurs disrupt markets, driving them from one equilibrium state to another?</p> <p>(2) How do entrepreneurs combine existing resources in novel ways that allow them to exploit new opportunities resulting from technological change?</p> <p>(3) How do entrepreneurs take advantage of the inexistence of direct competition that follows the introduction of disruptive innovations?</p>	<p>Punctuated Disequilibrium</p> <p>(1) How do entrepreneurs proactively reshuffle resources to introduce new solutions in the market?</p> <p>(2) How do entrepreneurs decide what imagined future(s) to pursue as part of a process that allows them to kaleidically create new opportunities?</p> <p>(3) How do entrepreneurs' actions result in dramatic shifts from one disequilibrium phase to another, driving markets farther from equilibrium?</p>

Equilibration

Scholars taking an equilibration perspective view the entrepreneur as an imaginative and bold individual who is alert to opportunities (Kirzner 1997). By discovering and taking advantage of opportunities, the entrepreneur drives the market toward equilibrium, reducing Hayekian problems of dispersed knowledge through the coordination of diverse plans (Jakee and Spong 2003). In this perspective, as time passes, the WSR nears and nears in the various markets. Scholars using an equilibration perspective view

the entrepreneur as an arbitrageur/middleman who buys or sells hoping to make a profit; thus s/he is someone who need not be a producer or an innovator, or even own capital (Foss and Klein 2010; Rothbard [1962, 1970] 2009). Lastly, the entrepreneur is an agent of change who profits by taking advantage of opportunities while acting in the interest of the consumer (Mises [1949] 1998). Austrian economists within the equilibration perspective view opportunities as preexistent in the market and as waiting to be discovered. Entrepreneurs discover such opportunities based on their own interpretations of past experiences (see Chiles, Vultee, et al. 2010).

Taking into consideration the aforementioned assumptions and information regarding the nature of change, knowledge, opportunities, and the entrepreneur, scholars wishing to pursue research using an equilibration perspective may consider asking questions such as (1) How do entrepreneurs continually discover existing opportunities?, (2) How do entrepreneurs continually correct market errors (due to market ignorance and dispersed knowledge)?, and (3) How do entrepreneurs ultimately drive markets from a disequilibrium state toward the WSR?

Punctuated Equilibrium

Proponents of this perspective view the entrepreneur as an innovator who disrupts business routines and market equilibria through opportunity exploitation (Jakee and Spong 2003). As such, the entrepreneur is not passive—s/he creates a world that is different from the one s/he finds—meaning that the entrepreneur is, in fact, a “creator” (Foss and Klein 2020; Kirzner 2009). However, it is important to note that although the entrepreneur is a creator and an innovator, s/he does not necessarily need to be an inventor or a capitalist (Schumpeter 1934). Additionally, the entrepreneur is different from a manager in that while managers perform routine activities, entrepreneurs rely less on tradition. In fact, entrepreneurs break with the old to create something new—a process known as creative destruction (Schumpeter 1934). Entrepreneurs exploit preexisting opportunities that are widely known and that are a result of scientists’ inventions (Chiles, Vultee, et al. 2010). In order to exploit such opportunities, entrepreneurs periodically carry out new resource combinations through their will and action (Bylund

2016; Foss and Klein 2012; Schumpeter 1934). This results in markets evolving “from one long period of equilibrium through brief upheaval to another such equilibrium” (Chiles, Vultee, et al. 2010, 140). From an Austrian equilibrium perspective, such entrepreneurial actions interrupt the path toward a WSR, thus suggesting a different, much more distant WSR toward which markets will tend once the rearrangement of production processes starts.

Taking into consideration the aforementioned assumptions and information regarding the nature of change, knowledge, opportunities, and the entrepreneur, scholars wishing to pursue research using a punctuated equilibrium perspective may consider asking questions such as (1) How do entrepreneurs disrupt markets, driving them from one equilibrium state to another?, (2) How do entrepreneurs combine existing resources in novel ways that allow them to exploit new opportunities resulting from technological change?, and (3) How do entrepreneurs take advantage of the inexistence of direct competition that follows the introduction of disruptive innovations?

Disequilibration

Scholars taking a disequilibration perspective view entrepreneurs as capable of reducing chaos to order through their creative intelligence (Harper and Endres 2010). In a world of continuous change, entrepreneurs act because they “prefer to anticipate tomorrow’s changes today rather than adjust themselves to those recorded in the latest message received” (Lachmann 1956, 22). They do so by forming combinations of heterogeneous capital resources in their plans and regrouping resources when their plans are revised, a process that ultimately has a disequilibrating effect on the market. Overall, the function of the entrepreneur is to address a world of unexpected change, as well as “to turn failure into success and to benefit from the discomfiture of others” (Lachmann 1956, 18). Opportunities are created and continually recreated through entrepreneurs’ creative imaginations, and they are realized through the combination and continuous recombination of capital resources (Chiles et al. 2013). Entrepreneurs’ actions cause markets to move away from the previously seen WSR step by step, thus reducing market order.

Taking into consideration all of the aforementioned assumptions and information regarding the nature of change, knowledge, opportunities, and the entrepreneur, scholars wishing to pursue research using a disequilibrium perspective may consider asking questions such as (1) How do entrepreneurs continually create new opportunities?, (2) How do competitors in a market react to entrepreneurs' disequilibrating actions?, and (3) How do entrepreneurs' combinations of heterogeneous capital resources and regroupings of resources have a disequilibrating effect on the market?

Punctuated Disequilibrium

Under a punctuated disequilibrium perspective, the entrepreneur spots, creates, and exploits new opportunities. S/he is a decision-maker and a risk bearer under conditions of uncertainty (Batstone and Pheby 1996). And although the entrepreneur is ignorant of the future (Hill 2004), s/he possesses an imaginative capacity to ponder future possibilities (Ripsas 1998). Based on subjective expectations of imagined future possibilities, entrepreneurs make decisions that allow them to continually create and recreate opportunities (Chiles, Vultee, et al. 2010). Thus, opportunities are neither preexisting nor waiting to be discovered—they are created by the forward-looking mental acts of entrepreneurs (Chiles, Vultee, et al. 2010; Shackle 1979). Envisioning different courses of action leads to a divergence of expectations and, thus, to a kaleidic society—a notion that is vastly different from Hayek's self-adjusting spontaneous order (Hill 2004). Ultimately, this results in a punctuated disequilibrium in which markets occasionally experience dramatic shifts from one disequilibrium phase to another as a natural part of an ongoing disequilibrium process (Chiles, Vultee, et al. 2010). In this perspective, such dramatic punctuations drive the market away from the WSR, kaleidically shifting it from one disequilibrium phase to another and allowing the entrepreneur responsible for that shift to collect quasi-monopolistic profits for as long as the situation remains.

Taking into consideration the aforementioned assumptions and information regarding the nature of change, knowledge, opportunities, and the entrepreneur, scholars wishing to pursue research using a punctuated disequilibrium perspective may consider asking

questions such as (1) How do entrepreneurs proactively reshuffle resources to introduce new solutions in the market?, (2) How do entrepreneurs decide what imagined future(s) to pursue as part of a process that allows them to kaleidically create new opportunities?, and (3) How do entrepreneurs' actions result in dramatic shifts from one disequilibrium phase to another, driving markets farther from equilibrium?

CONCLUDING THOUGHTS

Austrian economists bring an important perspective on the history of economic thought, one that views the world as inherently cognitive and fundamentally dynamic; that is, about knowledge and change—knowledge that is both convergent and divergent, and change that is both continuous and discontinuous. By placing these concepts at the core of their enterprise, these economists have shed considerable light on the “dark forces of time and ignorance.” In acknowledging the concept of equilibrium in the Austrian tradition and building a typology based on the aforementioned two concepts, which are intricately connected to the Austrian concept of entrepreneurial production, the hope is to offer organizational entrepreneurship scholars a useful framework for organizing their thinking and guiding their research—not only into the more familiar equilibrium-based entrepreneurial phenomena, but also the less familiar disequilibrium ones.

As has been argued, Austrian economics comprises a number of distinct strands or perspectives, each with a unique ability to shed light on specific entrepreneurial phenomena. This work seeks to sensitize organizational scholars pursuing Austrian-inspired entrepreneurship research to the intellectual heterogeneity within this school of economic thought and to clarify the nuances of different perspectives within it, providing scholars with a solid foundation from which to build their research efforts. To do so, ideas from existing typologies in the organization studies literature were integrated and reworked to develop a new typology yielding four distinct perspectives: (1) equilibration, (2) punctuated equilibrium, (3) disequilibration, and (4) punctuated disequilibrium. The equilibration and punctuated equilibrium perspectives, which have garnered the lion's share of scholarly attention, are firmly anchored in

a perceived tendency for market actions to be directed toward some equilibrium, represented in Austrian theorizing by the WSR and the tendency toward the ERE. These perspectives have been valuable in moving the organizational entrepreneurship field forward for the last several decades. However, scholars have leaned on them heavily, and this overreliance has blocked progress into a range of disequilibrium phenomena, from entrepreneurs' forward-looking imaginative acts to their *ex nihilo* creation and continual recreation of resource combinations to the relatively unstable interactions these acts and actions engender in markets characterized by radical uncertainty, pervasive heterogeneity, and constant disruption. The disequilibrium perspective, in which entrepreneurial action drives the market process away from equilibration, has recently started to receive greater attention, opening inquiry into some of these neglected entrepreneurial phenomena. Its place in this typology further legitimates it as an important perspective in entrepreneurship research. The punctuated disequilibrium perspective is just beginning to appear on scholars' radars and it is hoped that its place in this typology will compel others to explore some of the current "outer reaches" of the entrepreneurship field, helping us understand, for example, how creative entrepreneurial processes kaleidically shift from one disequilibrium phase to another.

More generally, organizational entrepreneurship scholars can use this typology to better understand how different Austrian perspectives are rooted in distinct sets of philosophical and methodological assumptions. Using this typology, scholars can also locate key differences over the nature of the entrepreneur, the nature of opportunities, potential research questions, and selected empirical examples that illustrate the types of phenomena with which each perspective is concerned. Additionally, for each of its four perspectives this typology lists authors whose work can serve as a reference point. This typology is useful and important because it provides organizational entrepreneurship scholars with a foundation to advance inquiry in at least two ways: (1) it helps scholars organize and sharpen their thinking about a particular entrepreneurial phenomenon, and (2) it guides researchers through the research process, allowing them to identify and make sense of the nuances and subtleties of the phenomenon under study, to ask appropriate questions, and to use suitable methodologies.

Scholars pursuing Austrian-based organizational entrepreneurship research might use this typology in the following manner. First, it is recommended that scholars start by reflecting on the nature of the phenomena they wish to study, specifically seeking an understanding of the nature of knowledge, change, opportunities, and of the entrepreneur (see figures 2 and 3). This will allow them to locate the phenomenon at hand within a particular Austrian perspective. As soon as researchers identify the appropriate perspective, they should examine and reflect upon the broader philosophical assumptions relating to the particular perspective (see figure 2). After that, they can develop research questions that are consistent with the perspective and its underlying philosophical assumptions (see figure 4 for examples). Finally, researchers can choose the appropriate methodology, which should also be consistent with the philosophical assumptions of the perspective being used (see figure 2). In the case that the researcher would like to consult previous work using a specific perspective, figure 2 offers lists of works that fall within each perspective.

Although helpful for sharpening our thinking about the numerous strands of Austrian and Austrian-related economics, this typology is not without limitations. First, some scholars criticize typologies for not being a true depiction of reality—that is, for being oversimplistic and for failing to portray the complexity of organizational life (Meyer, Tsui, and Hinings 1993). It is important to keep in mind, however, that the purpose of typologies is not to perfectly replicate reality but rather to provide a foundation from which to advance inquiry. As Gibson Burrell and Gareth Morgan (1979) have argued, typologies are useful in providing us with a heuristic device, rather than with a set of rigid definitions and classifications. In other words, typologies are designed to help sharpen our conceptions and thoughts about the dynamism of reality without getting lost in an absolutism that is not real. Thus, typologies provide scholars with constructs that help organize their thinking, from which they can then identify the nuances and subtleties that differentiate real phenomena from the ideal types. Given the process orientation of the Austrian school, this typology might be of particular interest to those interested in exploring entrepreneurship from a process perspective. It is recommended that future process-oriented scholars use this typology alongside other work exploring distinct

worldviews in entrepreneurship scholarship—see, for example, the work of Chiles, Sara R. S. T. A. Elias, and Qian Li (2017)—to carefully consider the philosophical assumptions that undergird their research efforts.

Second, in developing this typology, and as is typical of this type of work, the two dimensions of knowledge and change were classified dichotomously, even though these are complex and nonbinary concepts. This approach thus prioritized parsimony, glossing over the complexity and nuances of these concepts (Doty and Glick 1994; Weick 1979). As Peer C. Fiss (2007, 1193) has argued, many concepts in the field are complex and multidimensional in nature, “requiring more continuous coding.” Future researchers are thus encouraged to explore alternative approaches, for example, by using qualitative comparative analysis (QCA) to develop an “ideal type” (e.g., Fiss 2011) for each key Austrian economist and their impact on organization and entrepreneurship studies.

Third, the two dimensions of knowledge and change provide *one* way to make sense of the various strands of Austrian and Austrian-related economics. Future scholars might build different typologies by choosing dimensions that may be rooted not only in other Austrian core concepts, but also in key differences between the Austrian school and mainstream economic thought (e.g., methodological individualism, subjectivism, praxeology). Developing new typologies would inherently allow future scholars to shed different light on—and further make sense of—the complexities of Austrian thought more specifically and economic thought more generally, and how the former may inspire organizational research.

Fourth, it is recognized that there are a number of important debates within the Austrian school that were not included in this discussion, such as Mises versus Hayek on the economic problem arising from power centralization (Salerno 1993), Mises versus Schumpeter on the theoretical grounds of economics (Schulak and Unterköfler 2011), and Kirzner versus Rothbard on the nature of the entrepreneur (Rothbard 1974). This typology represents a first step in helping guide the research efforts of organizational entrepreneurship scholars wishing to more firmly ground their research in Austrian thought. As such, it is a basic conceptual tool for holistically making sense of Austrian economics, allowing

organizational entrepreneurship scholars to go beyond mere lists of go-to Austrian figures such as Hayek, Schumpeter, and Kirzner. The aforementioned debates provide theoretical detail and nuance that go beyond the initial efforts in this article. Future scholars are encouraged to flesh out this typology by adding the relevant insights from these debates to the appropriate perspective or, conversely, to explore how this typology might inform these debates.

In closing, the hope is that this typology, along with these concluding suggestions, will help organizational scholars pursue Austrian-based entrepreneurship research in a more mindful and informed manner. Doing so will improve our understanding of entrepreneurship.

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FINDING THE ENTREPRENEUR-PROMOTER: A PRAXEOLOGICAL INQUIRY

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JEL CLASSIFICATION: L11, L26, O12

ABSTRACT: Entrepreneur-promoters, or the pioneers of economic improvement, provide an essential market function which economics cannot do without. Yet Ludwig von Mises maintains that this function lies beyond what can be defined with praxeological rigor. This paper attempts to find a praxeological subcategory of entrepreneurship that conforms with Mises's indeterminate references to the entrepreneur-promoter in *Human Action*. Rather than relying on the evenly rotating economy, which is commonly used for analyzing entrepreneurship, the imaginary construction of a specialization deadlock is employed, adapted from Per Bylund's *Problem of Production*. This construction allows for the derivation of a praxeological subcategory of entrepreneurship, distinct from the general function of uncertainty bearing, which suggests a theoretical explanation for what constitutes the driving force of the market process.

Austrian economics has found a resurgence through the increased attention to entrepreneurship in policy and research

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(Klein and Bylund 2014). This should not be surprising. Although mainstream economic theory has long been uninterested in the topic (Baumol 1968; Hébert and Link 1988), entrepreneurship is core to the Austrian understanding of the market as a process (Kirzner 1992, 1997). Indeed, the school's founder himself discussed entrepreneurship in his groundbreaking magnum opus (see Menger [1871] 2007, 160–61). But it was not until much later that Austrians developed a theory of the entrepreneur, with Israel M. Kirzner's theory (1973, 1979, 2009) being the most widely known. Kirzner (1973, 84–87) builds explicitly on Ludwig von Mises's ([1949] 1998, 254, 255) praxeological definition of the entrepreneurial function (*contra* Menger) as “acting man exclusively seen from the aspect of the uncertainty inherent in every action,” that is, “in regard to the changes occurring in the data of the market.” Mises also famously observed that entrepreneurship, due to its uncertainty-bearing and therefore speculative nature, is the “driving force of the whole market system” (Mises [1949] 1998, 249). It is Mises's definition of entrepreneurship and its limitations that is of interest to us here.

Mises substantiates the conception of the entrepreneur as bearer of uncertainty using the imaginary construction of the evenly rotating economy (ERE), a fictional economy “characterized by the elimination of change in the data and of the time element” (Mises [1949] 1998, 247). The ERE thus encompasses all the elements of the real economy, including production, exchange, market prices, and so on, but without the uncertainty of change. Consequently, Mises ([1949] 1998, 247) notes, “The system [ERE] is in perpetual flux, but it remains always at the same spot. It revolves evenly round a fixed center, it rotates evenly.” In this unchanging world of the ERE, therefore, there is no uncertainty and, consequently, “there is no room left for entrepreneurial activity” (Mises [1949] 1998, 247).

What is curious is that Mises at the same time affords the entrepreneur-promoter,¹ a subcategory of entrepreneurship that “cannot be defined with praxeological rigor” (Mises [1949] 1998, 256), a premier role for understanding the market process. In fact, the promoter embodies, as it were, the incessant change in the market: “One enters the ranks of the promoters by aggressively pushing forward and thus submitting to the trial to which the market subjects

¹ I will henceforth, following Mises, refer to this function simply as “promoter.”

[everybody]" (Mises [1949] 1998, 309). The market process, in other words, progresses primarily through the actions of promoters, who push forward and thereby challenge the status quo. For this reason, "economics cannot do without the promoter concept" (Mises [1949] 1998, 256). However, Mises maintains, the promoter nevertheless lies beyond what economic theory can explain.

This article will show, first, that the importance of the promoter is that Mises saw in this role the *actual* driving force of the market: the cause of the progression of the market process and the economy's development. Rather than entrepreneurship in general, the uncertainty-bearing aspect of any action, it is the promoter's speculative undertaking of novel production processes and new ways of doing business that create the specific future market conditions under which all types of entrepreneurs can earn profits (or suffer losses).

Second, an economic (praxeological) definition of this category that largely conforms with Mises's indeterminate references to the promoter in *Human Action* ([1949] 1998) will be suggested. To distinguish promoters from nonpromoters, the imaginary construction of the specialization deadlock adapted from Per Bylund (2016) will be used. It has previously been used to determine the economic function of the firm as a means for implementing novel production structures beyond the extent of the market (Bylund 2011, 2015a, 2015b, 2016) but can be applied more broadly. The specialization deadlock can be understood generally as an adaptation of Mises's ERE where the assumptions have been significantly relaxed. Thereby, and due to the model's focus on the evolution of the market's production structure, it is a useful means for distinguishing between and explaining the driving force of production. In other words, the specialization deadlock can be applied to distinguish between categories of entrepreneurship, i.e., the types of productive progress taking place side by side in the market process, and it can identify their respective causes. Specifically, it is argued that the role of the promoter as pioneer of economic improvement can be defined praxeologically, by way of Bylund's (2016) model, as *that entrepreneurial function which breaks the specialization deadlock and thus acts in pricelessness*.

In what follows, it will first be substantiated that Mises saw in the promoter specifically, and not entrepreneurship more broadly,

the driving force of the market. The ERE will then be used as a contrast to explain the workings of the specialization deadlock and how their respective assumptions differ. Thereafter, an economic definition of the promoter will be presented and then used to shed light on Mises's varied treatment of the market's driving force in *Human Action*. Finally, the praxeological definition of the promoter will be related to the entrepreneurship theories of Kirzner (1973) and Joseph A. Schumpeter ([1911] 1934).

Throughout this discussion, both Mises's nontheoretical notion and the praxeological category derived here will be referred to as "promoter." All references to apparent actors (entrepreneurs, promoters, etc.) are to their economic functions unless stated otherwise.

THE PROMOTER AS DRIVING FORCE

Mises holds that uncertainty "means acting man in regard to the changes occurring in the data of the market" (Mises [1949] 1998, 255). These data do not comprise only consumers' preferences, which do change unpredictably, but their preferences relative to the totality of the goods offerings by entrepreneurs (the structure of supply). The entrepreneur, therefore, bears uncertainty by speculating about the unknown future market conditions: the entire situation in which the entrepreneur's good will be offered for sale. As the market data for this future situation do not yet exist and behaviors of both producers and consumers are unpredictable, there is (and can be) no reliable knowledge in the present on which to base entrepreneurial decisions.

Uncertainty is different from imperfect knowledge, which is a problem that can be overcome at a cost. For example, a producer's lack of technological know-how can be remedied before or during production and is ultimately a calculated tradeoff between the cost of acquiring information and that of an estimated risk of problems in production. Although economic actors are affected by both imperfect knowledge and uncertainty, and it may often be difficult to distinguish between them in reality, the concepts are theoretically distinct and require separate analyses (Townsend et al. 2018). It is specifically due to the function of uncertainty bearing that "the entrepreneur earns profit or suffers loss" (Mises [1949] 1998, 255):

the specific entrepreneurial profits and losses are not produced by the quantity of physical output. They depend on the adjustment of output to the most urgent wants of the consumers. What produces them is the extent to which the entrepreneur has succeeded or failed in anticipating the future—necessarily uncertain—state of the market. (Mises [1949] 1998, 290)

Entrepreneurs, who as uncertainty bearers are always speculators, are responsible for *all* adjustments of production in the economy. But such adjustments can be of different magnitudes, and Mises distinguishes between the “great adjustments,” for which mainly the promoter is responsible, and the “many small adjustments [that] may seem trifling and of little bearing upon [production],” for which he is not:

Adjustment of production to the best possible supplying of the consumers with the goods they are asking for most urgently does not merely consist in determining the general plan for the utilization of resources. There is, of course, no doubt that this is the main function of the promoter and speculator. But besides the great adjustments, many small adjustments are necessary too. Each of them may seem trifling and of little bearing upon the total result. But the cumulative effect of shortcomings in many of these minor matters can be such as to frustrate entirely the success of a correct solution of the great problems. At any rate, it is certain that every failure to handle the smaller problems results in a squandering of scarce factors of production and consequently in impairing the best possible satisfaction of the consumers. (Mises [1949] 1998, 300)

Having earlier noted that the promoter cannot be defined praxeologically, Mises ([1949] 1998, 300–07) focuses on distinguishing entrepreneurship, which *can* be defined, from nonentrepreneurial functions that also can. The latter, he argues, do not bear the uncertainty of the undertaking, but act on behalf of the entrepreneur. So “[t]he entrepreneur hires the technicians, i.e., people who have the ability and the skill to perform definite kinds and quantities of work” (Mises [1949] 1998, 300). The entrepreneur also typically appoints “[a] *manager* [who] is a junior partner of the entrepreneur, as it were, no matter what the contractual and financial terms of his employment are” (Mises [1949] 1998, 301).

Of interest to us here, however, is the distinction Mises makes between “regular” (nonpromoter) entrepreneurs and promoters.

Mises is uncharacteristically imprecise, but this should be expected: having already asserted that promoters cannot be theoretically distinguished from nonpromoters, there is no basis for precision and no means to address the boundary conditions of the subcategories. We should not expect Mises (or anybody else) to use very precise language with respect to an undefined concept, because to do so is impossible. Mises is nevertheless clear that the “main function” of the promoter, which gets to his specific role, is to bring about “[a]djustment of production to the best possible supplying of the consumers with the goods they are asking for most urgently” and that it “does *not* merely consist in determining the general plan for the utilization of resources” (Mises [1949] 1998, 300; emphasis added). Indeed, as Joseph T. Salerno (2008, 195) summarizes, it is the promoter entrepreneur’s role to have “the will and ability to assume leadership in the social division of labor by pushing or promoting oneself into a position of organizing and directing the factors of production.” What characterizes the *nonpromoter* entrepreneurs, then, is that they are uncertainty bearers who are *not* making those great adjustments and thus *not* assuming such leadership—they instead focus on the “many small adjustments,” which, at least individually, appear to have little effect on the organizing of market production overall. Nonpromoters also, although only in aggregate, “[determine] the general plan for the utilization of resources” in the economy.

This suggests that the nonpromoter entrepreneur has a primarily allocative role with respect to productive factors, the shifting of productive efforts from one line of production to another so that output better meets consumers wants. The promoter, in contrast, adjusts production *beyond* simply “determining the general plan for the utilization of resources” by instead “assum[ing] leadership in the social division of labor.” Consequently, the promoter causes change to the *structure* of production. Following this reasoning, then, it can be posited that nonpromoters typically bear the uncertainty of the common, but not pioneering or disruptive, business enterprise. To use a common dichotomy in the entrepreneurship literature, nonpromoters would be more akin to imitator entrepreneurs, who may start new businesses but ones without structural implications, than they would be to disruptive innovators, who revolutionize production. Although nonpromoters provide a valuable (if not essential) function, their role is predominantly allocative, and they

make adjustments within the existing structure of production rather than change it. They thus earn the profits of running the business, and also suffer the losses, and respond to changes in demand. Their actions cause continuous adjustments to the market's overall allocation of productive resources between lines of production.

Although this is illustrative of the main dividing line, it does little to provide a scientific definition of the role of the nonpromoter entrepreneur—those entrepreneurs who are *not* promoters and thus do *not* go beyond the “many small adjustments” and thereby do *not* determine the “general plan” of production. Nonpromoter entrepreneurs do, however, determine resource utilization, and this suggests that their function is primarily allocative (rather than disruptive). Promoters, in contrast, are “especially eager to profit from adjusting production to the expected changes in conditions, those who have more initiative, more venturesomeness, and a quicker eye than the crowd, the pushing and promoting pioneers of economic improvement” (Mises [1949] 1998, 255). The promoter is different from the nonpromoter in degree but not in kind:

The mentality of the promoters, speculators, and entrepreneurs is not different from that of their fellow men. They are merely superior to the masses in mental power and energy. They are the leaders on the way toward material progress. They are the first to understand that there is a discrepancy between what is done and what could be done. They guess what the consumers would like to have and are intent upon providing them with these things. (Mises [1949] 1998, 333)

As they focus on “guess[ing] what the consumers would like to have” (but are not offered) and adjusting production toward that end, promoters’ impact on the economy is much greater than nonpromoters’. By being responsible for the major shifts in production, as opposed to the allocation and utilization of resources, the promoters exercise greater influence on the direction in which the market’s overall production apparatus progresses (Bylund 2015b, 2016). Consequently, promoters, as the “pushing and promoting pioneers” and “leaders on the way toward material progress,” epitomize the driving force of structural change in the market. Mises agrees:

The driving force of the market, the element tending toward unceasing innovation and improvement, is provided by the restlessness of the

promoter and his eagerness to make profits as large as possible. (Mises [1949] 1998, 256)

And similarly:

The driving force of the market process is provided neither by the consumers nor by the owners of the means of production—land, capital goods, and labor—but by the promoting and speculating entrepreneurs. (Mises [1949] 1998, 325)

The promoter is the real driving force of the economy, the disruptor of the status quo who leads the way toward greater productivity and value creation by “guess[ing] what the consumers would like to have” and “pushing and promoting” the structure of production in this direction.

Considering the importance of this role in the unfolding of the market process, it is important to theoretically be able to distinguish the promoters from those entrepreneurs who do not constitute this “driving force.” Yet as has been seen, Mises finds no basis for a theoretically rigorous distinction. The difference between promoters and nonpromoters, per Mises, exists only in the *relative magnitudes*: promoters’ attempted and achieved adjustments to production are “great” (not “small” or “trifling”) and they are “leaders on the way toward material progress” (as opposed to followers or imitators). Based on this observation, Mises properly concludes that the distinction lies beyond what can be determined with praxeological rigor.

However, as shall be seen, this is an unwarranted conclusion that follows from a misapplication of the imaginary construction used. Mises’s conclusion, I argue, is based on specific limitations of *the ERE*, not of praxeology *per se*. In fact, the ERE’s assumptions are appropriate for distinguishing the function of entrepreneurship from other functions, but it thereby disallows distinguishing different types within this function.

FROM THE EVENLY ROTATING ECONOMY TO THE SPECIALIZATION DEADLOCK

Mises astutely notes that “[t]he use of imaginary constructions to which nothing corresponds in reality is an indispensable tool of

thinking" (Mises [1949] 1998, 202). These constructions, including the ERE, are indispensable because they allow for rational analysis of complex processes, delineation of causal relationships, and examination of interactions that may not exist independently and cannot be observed in complex real-world situations. Their power for developing our understanding of and interpreting the economy is practically irrefutable.

However, as Mises also notes, "one of the most important problems of science is to avoid the fallacies which ill-considered employment of such constructions can entail" (Mises [1949] 1998, 202–03). The misapplication of imaginary constructions can cause "serious blunders."

Using the ERE to distinguish *between* types of entrepreneurship would be such a serious blunder, because the ERE is formulated to eliminate uncertainty, by excluding change, and thereby separate uncertainty bearing from other functions in the market. As Mises ([1949] 1998, 249) summarized it, "In order to grasp the function of entrepreneurship and the meaning of profit and loss, we construct a system from which they are absent." The ERE is indeed appropriate for this particular end, but this also makes it unsuitable for the purpose of distinguishing between *types* of uncertainty bearing. It relies on assumptions that all but exclude those adjustments to the production structure that are the main function of the promoter, and thus it cannot assist in distinguishing promoters from nonpromoters.²

The Evenly Rotating Economy

The ERE creates a fictional economy in which all causes of change in the market data have been theoretically removed. As these data are constants rather than variables there is no uncertainty about the future (it will be just like the present), which means that there are also no opportunities for entrepreneurs: adjustments to the production apparatus or resource allocations could not better satisfy consumers than the status quo. The economy that emerges is thus necessarily *entrepreneurless*. Mises explains:

² Mises cannot be blamed for making such an error (because he did not), but he appears to have overlooked the possibility of creating and employing other imaginary constructions to analyze entrepreneurship subcategories.

In the frame of this imaginary construction no change occurs; there prevails an unvarying course of all affairs. In the evenly rotating economy consequently nothing is altered in the allocation of goods for the satisfaction of wants in nearer and in remoter periods of the future. No one plans any change because—according to our assumptions—the prevailing allocation best serves him and because he does not believe that any possible rearrangement could improve his condition. No one wants to increase his consumption in a nearer period of the future at the expense of his consumption in a more distant period or vice versa because the existing mode of allocation pleases him better than any other thinkable and feasible mode. (Mises [1949] 1998, 482)

Murray N. Rothbard elaborates on the difference between the ERE and the real economy and adds specificity to what the ERE entails and its rationale:

the real world of action is one of continual change. Individual value scales, technological ideas, and the quantities of means available are always changing. These changes continually impel the economy in various directions. Value scales change, and consumer demand shifts from one good to another. Technological ideas change, and factors are used in different ways. Both types of change have differing effects on prices. Time preferences change, with certain effects on interest and capital formation. The crucial point is this: before the effects of any one change are completely worked out, other changes intervene. What we must consider, however, by the use of reasoning, is what would happen if no changes intervened. In other words, what would occur if value scales, technological ideas, and the given resources remained constant? (Rothbard [1962, 1970] 2004, 321)

The ERE, per Rothbard, holds four types of changes constant: consumers' value scales, technological ideas used in production, available supply of resources, and individuals' time preferences. If we were to theoretically fix those four variables in the present economy, an evenly rotating economy would emerge after a period of transition. During this transition stage, actors (as both producers and consumers) find their maximizing behavior through value-seeking trial and error. As the data of the market do not change, the actions that maximize each actor's satisfaction remain constant and are thus attainable. As actors try to find their max, this process eventually brings about a state of affairs in which each individual will no longer choose to adjust their behavior but will repeat those actions that they have learned maximize their satisfaction. This

final stage is not without production, consumption, and so on but is unaffected by the aforementioned types of changes so there is no uncertainty—the economy is “evenly rotating.”

The specific assumptions of this imaginary construction allow the theorist to analyze the impact of individual variables, jumbled and indistinguishable in the constant flux of the empirical world, by introducing specific changes and then reasoning through the implications. For example, by theoretically changing the rate of time preference in the ERE, the theorist can logically reason through how actors’ behaviors change and can therefore analyze the effect on the time structure of production of a change in time preference alone. Similarly, one can change or relax other ERE assumptions and thereby analyze the impact of specific changes in value scales, technological ideas, etc.

The limitation of the ERE’s usefulness is evident from its assumptions: the ERE can be used to analyze specific changes and responses to them, because all other changes have been theoretically eliminated. Although each of the changes assumed constant can be relaxed, the ERE can only be used to analyze uncertainty bearing *per se* with respect to those particular variables (value scales, technology, etc.). But entrepreneurship cannot be decomposed using the ERE, as the former is defined as those speculative undertakings “exclusively seen from the aspect of the uncertainty inherent in every action” and thus “in regard to the changes occurring in the data of the market” (Mises [1949] 1998, 254, 255). Outcome magnitudes, such as Mises’s distinction between great and small adjustments, or types of actions, such as the distinction between directing production and allocating resources, remain out of reach when using the ERE. But this does not mean that all imaginary constructions must fail at this task. This article argues that the specialization deadlock is suitable for determining the function of the promoter.

The Specialization Deadlock

Bylund (2016) formulates a praxeological explanation for the economic function of the business firm. In order to do so, he adopts Mises’s ([1949] 1998, 238–39) imaginary construction of the pure market economy, unhampered by political restrictions but without

any form of organizations or coordinated production structures that can be interpreted as firms. The assumption underlying this model is that coordination can only take place through the price mechanism, which is commonly recognized as the alternative to intrafirm organization (cf. Coase 1937). Then, applying the Misesian fact that “[s]ociety is concerted action, cooperation” that arises due to the fact “that work performed under the division of labor is more productive than isolated work and that man’s reason is capable of recognizing this truth” (Mises [1949] 1998, 143, 144), Bylund analyzes the dynamics of productive adjustments (in other words, *entrepreneurship*) in the price-coordinated market. The aim is to analytically uncover the processes by which an unhampered economy adopts, improves, and implements more intensive specialization under the division of labor. In other words, to answer the question of economic development: how a market progresses through ever more intensive specializing to achieve greater productivity and thereby attains higher standards of living.

Bylund (2016) finds that this decentralized, price-coordinated market hits a development ceiling³ beyond which autonomous actors are unable to adopt more intensive specialization. To progress beyond this limitation, and thus achieve greater specialization intensity, requires advanced splitting of production tasks—typically the introduction of new production processes to replace existing tasks—and thus coordination beyond what the price mechanism can provide (Bylund 2011, 2015a). Any such action would take place in pricelessness, beyond the realm of economic calculation through market prices, because there is no existing market for novelty. This type of entrepreneurial undertaking goes well beyond the simple arbitrage of, e.g., Kirzner’s (1973) entrepreneur, which requires no additional coordination, and it is also beyond the firm as theorized by, e.g., Ronald H. Coase (1937), which is practically a mirror image of market production (Bylund 2015c, forthcoming). To establish a new production process requires imagination, financing, and coordination as well as leadership (Witt 1998), and it can often also include experimentation and development of new capital.

³ This ceiling is contingent on population density, as discussed by Durkheim ([1892] 1933), and is thus a moving target. Yet it constitutes an effective conclusion, or at any rate a dramatic slowdown, of the market’s progression.

Compared to the ERE, Bylund's imaginary construction, called the specialization deadlock⁴ (referring to the ceiling), allows change in all four types of market data that the ERE holds constant. Uncertainty is therefore present in the specialization deadlock construction, and consequently it includes entrepreneurship. However, the focus on specialization introduces a new distinction that decomposes technological ideas (which guide and limit the scope of production undertakings) into those that (1) can be implemented through decentralized means (through price mechanism coordination) and those that (2) require centralized (nonprice) coordination of the implementation process in order to bring about the imagined production structure.

The former type includes specialization by the individual actor or that can be attained through coordination with others using simple exchange or market contracts. These are the types of divisions of labor that Adam Smith famously discusses in *The Wealth of Nations*. To Smith, "the division of labour is limited by the extent of the market" (Smith [1776] 1976, bk. 1, chap. 3). This "extent" can be understood as the degree to which "individuals [are] sufficiently in contact to be able to act and react upon one another...and the active commerce resulting from it" (Durkheim [1892] 1933, 257; cf. Land 1970). This limitation allows for a sphere of dynamic actions, including uncertainty-bearing entrepreneurship in response to changing market data, within the limitation of the specialization deadlock. These specializations that do not require centralized coordination can also build on previous specialization efforts incrementally, thereby pushing the extent of the market outwards.

Importantly, however, this incremental progression would not generate the pin factory that Smith uses to exemplify the productive powers of specialization under the division of labor. The incremental progression of the division of labor would not facilitate specializations far beyond what has already been implemented in the market, since this would require the form of coordination excluded from the specialization deadlock. In other words, while the incremental intensification of specialization could eventually generate a highly specialized process, similar to the one taking place within Smith's pin factory, it would do so without need for the centralized organizing

⁴ For details, see Bylund (2016, 60–65)

of the factory and also without being substantially different from specializations already supported in the market.

This incremental progression within the specialization deadlock can, however, be upset by the implementation of novel technological ideas (including new types of organization) that require centralized coordination to be feasible. In other words, to establish for the first time a highly specialized production process, akin to what Smith observes in the pin factory, is to go beyond and thus break out of the specialization deadlock. This would require centralized coordination and up-front financing: the creation of a factory. From the point of view of the market's existing production structure, then, there is a categorical difference between changes in the form of adjustments that are compatible with the existing division of labor and therefore take place *within* the extent of the market, coordinated through the price mechanism and simple contracting, and those attempted changes that fall *outside* the market's extent, challenge the status quo, and will, if successful, bring about disruptions to it. Rothbard helps illustrate this difference:

While a continuing and advancing division of labor is needed for a developed economy and society, the extent of such development at any given time limits the degree of specialization that any given economy can have....Economic and social development is therefore a mutually reinforcing process: the development of the market permits a wider division of labor, which in turn enables a further extension of the market. (Rothbard 1991, 26)

Per the assumptions of Bylund's imaginary construction, this "mutually reinforcing process" is limited to such division of labor as does not require coordination of factors beyond what can be achieved through the price mechanism and simple contracting. In other words, the opportunities for adopting more intensively specialized production in the decentralized market process are subject to (and thus limited by) the specialization deadlock—the specialization intensity beyond which decentralized economic actors cannot go without effecting incompatibility with the existing production structure. This provides insight into what types of entrepreneurial undertakings are *excluded* from the specialization deadlock model: those implementations that cannot be coordinated through market prices. They would, assuming that they take place, be located beyond the deadlock and therefore break it.

We can conceive of two types of distinct changes that entrepreneurs can effect in the structure of production that go beyond and so break the specialization deadlock and thus require coordinated action. First, the production of a new type of consumers' good that cannot be assembled through simple means from standard components already available in the market. The production process would introduce novelty in both the consumer's good, which has not previously been offered for sale and for which demand is therefore unknown (no value has been realized), and in its production. Second is the introduction of an innovation in the form of novel organizing of existing production stages through the splitting of tasks (Bylund 2011, 2015a), new combinations of factors (Schumpeter [1911] 1934), or creation of new and adapted capital structures (Lachmann [1956] 1978). Both types of changes depend on the utilization of novel technology, broadly conceived, whose implementation institutes a change in the production apparatus in some significant way. In other words, these types of changes constitute "great adjustments" of production by the entrepreneur who, in undertaking their implementation, "assume[s] leadership in the social division of labor by pushing or promoting oneself into a position of organizing and directing the factors of production" (Salerno 2008, 195).

The latter case will be elaborated here to illustrate the specialization deadlock, which is also the focus of Bylund's (2016) discussion. Assuming an existing roundabout production process in which a good is produced through several conceptually separate stages, each with their own specializations, novelty would be introduced in new ways of organizing and therefore replacing (at least) one stage. In other words, an entrepreneur conceives of a new and potentially more productive way of producing such that an existing stage is replaced by several more intensively specialized tasks (a new subprocess). So the new way of producing must be compatible with the remainder of the production process—unless this new process is in the highest- or lowest-order stages, the new process must procure inputs in the open market from producers at prior stages and also sell the produced outputs to producers in subsequent stages. In other words, for an innovation to be successfully implemented, it must achieve three things. First, it must be adapted or positioned to use inputs that are already available for purchase in the market. Second,

it must similarly produce outputs that the subsequent production stage is equipped to use in its production. These are both required in order for the innovative production process to be compatible with the existing production structure. Third and final, the novel production process must be organized and coordinated such that it constitutes a complete chain of productive tasks that produce compatible outputs from existing inputs. Also, for this undertaking to be successful, the new process must be more valuable overall than the mode of production already existing in the market that it (competes with and) attempts to replace.

Bylund (2015a) illustrates this with a theoretical existing production process that consists of only three stages (tasks) from start (only original factors) to finish (consumer's good), $t_1-t_2-t_3$. The entrepreneur envisions a means to improve production by changing the process. Specifically, the entrepreneur's imagined solution consists of replacing the existing stage t_2 with three separate and much more highly specialized (and therefore expected to be more productive) tasks in a subprocess: $t_{21}-t_{22}-t_{23}$. Thus:

The [envisioned] efficient process comprises $t_1-[t_{21}-t_{22}-t_{23}]-t_3$ where the intermediate tasks $t_{21}-t_{22}-t_{23}$ are more highly specialized ($s_j \gg S_m$) and therefore jointly more productive than the market-traded task t_2 . The input for $[t_{21}-t_{22}-t_{23}]$ remains the output of t_1 , and the process's output is the input of t_3 —both are traded (or tradable) in the market, and so the new and more specialized process is compatible with the market and complete in replacing task t_2 . In fact, in order to successfully compete with and supplant t_2 by exploiting the productive capability of $[t_{21}-t_{22}-t_{23}]$, the mutually specialized subprocess must be compatible with the existing productive structure (i.e., t_1 and t_3) or, alternatively, rely on substitute inputs that do not require new production structures (they should already be available in the market). Incompatibility with either t_1 or t_3 suggests failure by disconnecting the encapsulated subprocess from the market. (brackets in original)

This thought experiment provides several important insights, but it is sufficient for our purposes to note that this type of novel production process requires more than the coordination offered by the price mechanism (Bylund 2016, 67–85). Indeed, as the new tasks and structure $[t_{21}-t_{22}-t_{23}]$ are new, there can be no existing market prices for their contributions. These tasks are also not marketable, since they have not previously been observed. This suggests not

only that the entrepreneur will need to provide coordination to accomplish the envisioned structure but also that up-front financing will be needed in order to attract factors from their current market positions. Factors will command prices higher than the prevailing market wage to become part of the new and untried (and thus more vulnerable) position (Bylund 2016, 107–20; cf. Bylund and Bylund, forthcoming). This undertaking is speculative, uncertainty-bearing entrepreneurship, but it is significantly different from the types of uncertainty bearing through arbitrage and production that can take place within the extent of the market. It is of a specific kind because it (per our assumption) utilizes specialization beyond the intensity that the economy is currently able to support—beyond what can be coordinated through existing market prices. In other words, this entrepreneurship must have an internal coordinative component in addition to the coordinative implications of resource allocation for the market. It is also blind to the relative economic efficiency of the parts of the (sub)process that it implements because there are (and can be) no market prices. In other words, when this new structure is implemented, it becomes an “island of specialization,” or what Bylund (2016) argues is properly (and praxeologically) a firm. We do not need to take that full step to the firm here, however, but need only recognize the specialization deadlock and that although it is an obstacle, it is not insurmountable. Indeed, as has been shown, markets can and do overcome the deadlock, specifically through innovative coordinated entrepreneurial undertakings that establish new and more intensive divisions of labor.

DETERMINING THE ROLE OF THE PROMOTER

The discussion in the previous section suggests a framework for analyzing the economic nature of what Mises ([1949] 1998, 300) refers to as “great adjustments” of production as compared to “small adjustments.” It is also clearly relevant to Salerno’s (2008, 195) view of the promoter as having “the will and ability to assume leadership in the social division of labor by pushing or promoting oneself into a position of organizing and directing the factors of production.” Seen through the lens of the specialization deadlock, rather than the ERE, we can distinguish between entrepreneurship as uncertainty bearing *within the limits of the market’s existing specialization intensity*

(that is, within the present extent of the market and without challenge to the specialization deadlock) and uncertainty bearing (through coordinated production undertakings) *beyond the market's existing specialization intensity* (that is, outside the extent of the existing market and thus taking place despite and in direct conflict with the specialization deadlock).

These are not arbitrary classifications but are distinct by being either compliant with or directly challenging the specialization deadlock, which is an implication of the interdependence of factors that arises under the division of labor. Importantly, they are also not adjacent from a specialization point of view. There are two reasons for this. First, as Bylund (2011, 2015a, 2016) emphasizes, the “splitting” of a task into many, thereby replacing a standard task with a process, is not an incremental but a discrete change—there are no feasible solutions in between. Also, even if in-between solutions were possible, new production that utilizes specialization intensity just beyond what is compatible with the existing production structure would be unlikely to provide sufficient efficiency gains to cover the costs of implementing and bearing the uncertainty of such production. Thus, these are discrete types of entrepreneurial undertakings, because between the innovative, deadlock-defying “great adjustments” and the market-compatible “small adjustments” exists an “infeasibility zone” where no production undertakings will or can take place:

This ‘zone’ arises due to the fact that all productive innovations that are impossible to realise through market means suffer from unknowability and that their internal strict interdependence suggests incompleteness even from failure in one of their parts. (Bylund 2016, 100)

In other words, the costs of implementing novel production beyond the specialization deadlock are significantly higher than production within the extent of the market. For such an undertaking to make economic sense, the entrepreneur must rely on significant gains from specialization to cover those costs. Unless the new division of labor takes a significant leap forward as compared to the within-market intensity of specialization, the costs exceed the gains and the undertaking would thus generate a loss to the entrepreneur.

In sum, there are two distinct categories of entrepreneurial action. Entrepreneurial action in the first category consists of implementing innovative production structures through advanced task splitting (division of labor) and specializing beyond the specialization deadlock by some magnitude. The other category consists of the efficiency-improving adjustments that take place within the specialization deadlock.

Nonpromoter Entrepreneurs

The entrepreneurial actions taking place within the specialization deadlock, and thus within the existing extent of the market, are, relatively speaking, small and, in Mises's words, "may seem trifling and of little bearing upon the total result." They include the allocations of resources between production processes for arbitrage gain as well as so-called imitative entrepreneurship, including where the entrepreneur introduces to an industry ideas and technologies already implemented elsewhere. But these actions, which individually are of little magnitude from the perspective of the economic system, are still highly important for the market process as "the cumulative effect of shortcomings in many of these minor matters can be such as to frustrate entirely the success of a correct solution of the great problems" (Mises [1949] 1998, 300). Although the individual nonpromoter entrepreneur does not exercise much influence, the aggregate effect of such actions, including the weeding out of less productive entrepreneurs, is essential.

Entrepreneurs of this type respond to and attempt to second-guess changes in market conditions so as to position their ventures in the best possible way. They allocate factors between and organize production within the structure of production. They also competitively bid for resources in the open market, which effectuate changes to market prices that facilitate improved economic calculation. As a result, their efforts bring about continuous minor changes to the production structure through shifting allocations of resources in response to expected or foreseeable changes in the market data and through incrementally adopting more intensive specializations. But these adjustments are limited in economic scope, as they do not attempt to innovatively disrupt the existing

structure of production—these adjustments happen *within* the extent of the market and are compatible with production in the status quo. Nevertheless, they serve a very important function in the market economy though their constant adjustments and attempted responses to changes (Hayek 1945).

This entrepreneur, acting within the confines of the specialization deadlock, is primarily a responsive agent who is alert to and thus discovers opportunities revealed within the present extent of the market (cf., Kirzner 1973). Whether these opportunities are due to changes in the market data, such as changing consumer preferences or shocks to production, nonpromoter entrepreneurs profit from swiftly adjusting their efforts to the change or exploiting a previously undiscovered misallocation of resources. It is thus, from the point of view of the new market data and whether the data are themselves new or simply new to the actor (or perhaps all actors), accurate to refer to such actions as corrections of errors made by previous entrepreneurs (Kirzner 1978). They could also be characterized as *discoveries*, since they are in fact already existing, as it were, within the fabric of the market but have, for whatever reason, remained unnoticed and unexploited (Shane and Venkataraman, 2000; Shane, 2003). These adjustments would consequently always, when successful, be equilibrating, since the discovery and correction of an error (or inefficiency) cannot be anything else (Kirzner 1973, 1978).

Yet given the discussion above, the limited impact of this type of entrepreneur on the market process and the structure of production is obvious. Corrections of errors, continuous adjustments of existing production processes, and the (re)allocation toward more valuable production in response to new (or expected new) data are just that: responsive. This is not to say the nonpromoter entrepreneur is passive, only that the opportunity for profit, existing in the form of a discovered disequilibrium (an “error”), emerges before the action to exploit it. The impact of the alertness on which this type of entrepreneur acts is limited by what opportunities he discovers, but the opportunities themselves are not actively created (cf. Alvarez and Barney 2007). From the perspective of this entrepreneur, disruptions are of exogenous origin (Shane 2003); nonpromoter entrepreneurs only respond to them as they discover them.

Promoters

The promoter's role as producer of "great adjustments" to the market's production, as a leader in the social division of labor, is distinct from that of the nonpromoter—and significant. Promoters are the entrepreneurs who, through attempting to coordinate and organize disruptive production processes, establish production significantly beyond the limit of the market's existing specialization intensity and thus are positioned (and intended) to break free from the specialization deadlock. Rather than responding to the discovered opportunities within the market's extent, already existing in its fabric, they *imagine* new ways of structuring and organizing production. This may take the form of a new type of consumer's good or a new type of production, as noted above, but common to their efforts is an active pursuit of what does not yet exist. Their imagined production also cannot be obvious or limitedly innovative, since such novelty would either be reachable through within-system specializing, and therefore would be in the realm of the nonpromoter, or would fall within the unfeasibility zone and so would be economically unfeasible. Typically, producing a new good or replacing an existing production stage with a new, more roundabout process would entail task splitting and, consequently, would not be an incremental change. As a result, entrepreneurs attempting this must break new ground and, where successful, bring about changes in the data on which other entrepreneurs (primarily nonpromoters) base their decisions. Their actions, and the economic impact thereof, thus go well beyond what nonpromoter entrepreneurs undertake. The promoter's entrepreneurial undertaking is different and constitutes much more than being "more adept than others at anticipating and adjusting to change" (Salerno 1993, 123).

Although their actions may indirectly affect consumers' value scales (by offering new goods), their time preferences (by, for example, improving the standard of living), and the supply of resources (through refined production techniques), they comprise the development and implementation of novel technology—recipes for production (Rothbard [1962, 1970] 2004, 11). To be positioned beyond the specialization deadlock, and thus outside the extent of the market, these ideas must be novel and original and thus, to

again refer to Bylund (2016), utilize more intensive specialization. But note that the “entrepreneur’s technological *ability does not affect* the specific entrepreneurial profit or loss” (Mises [1949] 1998, 288; emphasis added). It is not the technological production recipe that makes the promoter, but that the implemented ideas are novel from an *economic* perspective (they must better satisfy consumers), which means that the entrepreneur cannot rely on the price mechanism for coordination. He can only to a limited extent apply existing knowledge of what is economically feasible—there is only imagination and judgment to guide his uncertainty bearing.

To use Schumpeter’s (1947) well-known phrase, these entrepreneurs cause “creative destruction” to market production by challenging and, where successful, undermining and undoing the status quo.⁵ From a Misesian perspective, promoters disrupt the existing market’s production structure by envisioning and implementing novel production beyond the extent of the market, thereby undermining and ultimately dissolving the specialization deadlock. Our analysis categorizes as promoter entrepreneurship specifically such novelty as is not incrementally pushing the boundary of but defies the specialization deadlock and thus must be implemented in the realm of pricelessness. This type of undertaking cannot be accomplished, as Bylund (2016) argues, without up-front financing of the endeavor—the successful implementation of new production depends on productive completeness through coordination, compatibility with the surrounding production structure, and sufficient use of intensive specialization to produce gains in excess of cost. In this sense, to borrow a phrase from Rothbard (1974, 903), “the entrepreneur and the capitalist are one and the same”—there can be no promoter without a capitalist investment in novel production.

The unique role of the promoter, then, is not to perfect existing production, which is rather the role of nonpromoter entrepreneurs. Instead, promoters challenge the status quo by replacing production processes, stages, or tasks with novel production structures that are imagined more in line with the wants that consumers are

⁵ Interestingly, Schumpeter (1961, 107) also noted that that “[t]he promoter may indeed be...the purest type of the entrepreneur genus. He is then the entrepreneur who confines himself most strictly to the characteristic entrepreneurial function, the carrying out of new combinations.”

eager to satisfy. Specifically, promoters imagine and implement production processes that are more intensively specialized than is realizable through the price mechanism and market contracting. The application of the specialization deadlock here makes clear that this promoter role can be defined praxeologically as that which revolutionizes the structure of production by bringing about more roundabout production processes.

As the new process implemented by the promoter is untried, its economic efficiency relies solely on the entrepreneur's judgment. Therefore, it is likely to be quite ineffective, both technologically and economically speaking. As is the case with first-generation devices, any success is a proof of concept and reason to further refine the ideas and their implementation. Consequently, the first attempt can be largely misaligned with the imagined consumer wants but still profitable. The bar that the promoter needs to initially meet is not impeccable implementation, but *better satisfaction of consumers than existing production*. The promoter's undertaking is successful if more value is facilitated through his endeavor than previously in the market, through either producing a better (more highly valued) good or reducing the cost of production (or both). "The only source from which an entrepreneur's profits stem is his ability to anticipate better than other people the future demand of the consumers" (Mises [1949] 1998, 288). It does not matter if the production technology can still be (greatly) improved, the offering better positioned, or the business model tweaked. It is possible, if not likely, that the promoter's novel contribution is not initially maximized or efficient, and thus encompasses many and potentially significant "errors" (inefficiencies, both technological and economic) that can be corrected over time by the original promoter or competing entrant entrepreneurs.

This depiction of the promoter is fully compatible with Mises's view:

The driving force of the market, the element tending toward unceasing innovation and improvement, is provided by the restlessness of the promoter and his eagerness to make profits as large as possible. (Mises [1949] 1998, 256)

The promoter is responsible for this "unceasing innovation" that, in Mises's words, "[adjusts] production to the best possible

supplying of the consumers with the goods they are asking for most urgently” that “does *not* merely consist in determining the general plan for the utilization of resources” (Mises [1949] 1998, 300; emphasis added). Rather than resource allocative, the role is innovative and disruptive to the structure of production. Thus, rather than improving the effectiveness of the economic system by correcting existing errors, the promoter brings about improvements by revolutionizing the overall structure of production and changing the market data for nonpromoter entrepreneurs, who to earn a profit must respond to this change.

It has been shown, then, that by using the specialization deadlock, an imaginary construction complementary to the ERE, it is not only possible to praxeologically offer a definition for the promoter, but also to distinguish this actor from nonpromoter entrepreneurs.

CONCLUDING DISCUSSION

The discussion above offers a theoretically sound definition of the promoter as producer of great adjustments of production that distinguishes promoters from nonpromoter entrepreneurs. Although Mises asserted that this is not possible, that the promoter “cannot be defined with praxeological rigor” (Mises [1949] 1998, 256), his conclusion rests on an analysis of entrepreneurship *using the ERE*. This imaginary construction, however, is inappropriate for distinguishing between types of entrepreneurs, because it excludes *all* change and, consequently, does not allow for distinction between types (or magnitudes) of change. To alleviate this shortcoming, the specialization deadlock and the theory of how decentralized market production can(not) adopt innovative divisions of labor were instead applied to show that there is a real and theoretically determinable difference between promoters and nonpromoters: the former introduce novel production beyond the current extent of the market and thereby provide direction for the overall structure of production.

What remains is to briefly address what the praxeological determination of the promoter role means in terms of the “driving force of the whole market system.” First, the market process following the promoter’s realized profits will be addressed, and then the way

in which Mises's varying uses of the "driving force" come together in the promoter as he is here defined will be shown.

Subsuming the Promoter

The viability of the promoter's project is temporary. Where successful and earning above regular returns, it will set market processes in motion that undermine and eventually will dissipate the economic profits by attracting other entrepreneurs. These entrepreneurs are eager to share in the profits and thus attempt similar production structures by emulating the promoter's new solution. While emulating the promoter,⁶ they also make adjustments to and so aim to improve on the promoter's original recipe and contribution to consumer welfare by incorporating their own knowledge and expertise. This is partly due to not being able to fully reproduce the promoter's production structure, which, because its parts are not subject to market exchange, could to some extent be hidden. Part of the reason is also that the followers may have different conceptions of what constitutes the actual economic value of the novel production and use their idiosyncratic expertise to further improve on the original attempt. These emulators would therefore need to rely on *their own* judgment rather than reproduce the original exactly. Although the promoter has provided direction and proof of concept, the emulators are still not acting within a fully formed market but must imitate the promoter's complete project. And to capture the promoter's profits, they must overtake the pioneer in terms of value creation and produce a better offer for customers.

Through these followers' investments in similar structures of production, they augment the impact of the promoter's own actions by further shifting resources in the promoter's indicated direction. As they compete for the same (types of) resources, the follower entrepreneurs, "eager to earn profits, appear as bidders at an

⁶ The exact role of the follower entrepreneurs is beyond the scope of this paper's discussion. However, it appears their actions constitute a type of arbitrage that goes beyond and is different from regular within-market resource allocation between production processes. Their actions constitute arbitrage between two alternative production structures rather than different production processes: the promoter's newly created structure of production and the existent market. This role should be further analyzed in future research.

auction, as it were, in which the owners of the factors of production put up for sale land, capital goods, and labor” (Mises [1949] 1998, 332). Because of the promoter’s realized profits, the followers can bid higher than within-market actors for the needed resources and thereby bid up their market prices. They may also attempt to bid for the promoter’s, and each other’s, resources and thereby generate market prices for the novel factor specializations. As market prices are determined, the promoter’s “island of specialization” eventually disintegrates and the entrepreneurs can replace previously unique “internal” functions with market services (cf. Rothbard [1962, 1970] 2004, 609–16). As a result, the extent of the market is expanded, and the specialization deadlock shifts outward so that the promoter’s original contribution is subsumed within what is now the market. By means of the promoter’s imagined and implemented production structure, and through the actions of those entrepreneurs eager to capture the his new profits, the market has overcome the previous specialization deadlock.

As we can see, then, the promoter is the instigator of increased specialization intensity in the market, and thus what brings about ever-deeper divisions of labor through leaps forward—not incremental improvements. Promoters are in this sense leaders “in the social division of labor by...directing the factors of production” (Salerno 2008, 195). They do this by establishing “islands of specialization” (Bylund 2016), or intensively specialized production structures that *must* be implemented beyond the extent of the existing market. These pioneers are thus necessary for and constitute the vanguard of progress in the market process, and promoters are therefore core to understanding the driving force of the market.

Mises on the “Driving Force”

Mises is often quoted as saying that entrepreneurship is the “driving force” of the market, by which he specifically meant the *promoter*, as has been shown here. Using the theoretical definition of this role as developed here, further support for this conclusion is found.

Reading *Human Action*, however, it becomes clear that Mises uses that same phrase in several different ways. It is not immediately obvious that he was referring to one and the same driving force.

In light of the foregoing discussion and the definition developed above, his references to the “driving force” come together and thus Mises, rather than being inconsistent, appears to really have been referring to important nuances of the very same thing.

In this section three specific uses of the “driving force” are examined and reinterpreted using the definition elaborated in this article.

1. “Profit-seeking speculation is the driving force of the market as it is the driving force of production” (Mises [1949] 1998, 325–26).

Mises here notes not simply that profit seeking is the driving force or that speculation is, but that profit-seeking speculation is. Both profit seeking, in the sense of *economic* and not merely accounting profits, and speculation in the market process are virtually synonymous with uncertainty bearing. Thus, there is reason to believe that Mises may have been making a deeper point, a suspicion that is further augmented by the reference to production. The distinction made in this article between entrepreneurship within the extent of the market (nonpromoter) and entrepreneurship that breaks free from it (promoter) reveals that there is a significant difference in their speculative undertakings. The former speculates, as does any actor, about future market conditions but only attempts to respond to what is expected. The profit sought is that attainable through discovering opportunities that already exist as “errors” because the economy is not fully equilibrated. Nonpromoters’ role is primarily to effect allocation of resources toward those production processes that are expected to become most profitable, not to change production processes.

In contrast, the latter speculates about bringing about a *new future* by creating new production structures beyond the specialization deadlock and, as a result, disrupting the status quo. Profits are for the promoter not due to corrections or arbitrage opportunities within the normal progression of the market that are attainable through exchange, but are *new profits* that do not derive from, and may not even be related to, the status quo. In contrast, the followers of the promoter do not speculate about the economic feasibility of the undertaking in the sense that promoters do, because the promoter has already broken the new ground and shown that it is profitable.

The nonpromoters’ profits should be relatively temporary, since competitors can rather easily acquire similar (or identical) means

to copy the what the profiting entrepreneur did. But for the latter, the promoter's profitable undertaking is not easily, and perhaps not even entirely, reproducible, which suggests the original profits may last comparatively longer. Also, improvements to the original innovation can potentially extend profitability by keeping ahead of competitors and/or lowering production cost. It is also possible that follower entrepreneurs can sufficiently improve on the original innovation to outcompete the promoter and create renewed (and extended) profitability.

It is possible that Mises had a similar distinction in mind and therefore pointed out profit's role as driving force of the market *through* its being a driving force of production. This is indeed the implication of our analysis here. Although allocating resources between existing production processes (those that can be established within the extent of the market and, thus, the limitations of the production structure) will shift relative quantities of output, these are adjustments of production in degree, not kind. This is also the case for those entrepreneurs following and attempting to emulate the successful promoter, although their actions adjust the *structure* of production from the status quo to the novelty created by the promoter. These are all different from the promoters, who break new ground by establishing novel production processes and, as a result, extend the division of labor.

2. "[The free enterprise system's] driving force is the profit-motive the instrumentality of which forces the businessman constantly to provide the consumers with more, better, and cheaper amenities" (Mises [1949] 1998, 611)

This is similar to the quotation above but, in contrast, appears to downplay the distinction between promoters and nonpromoters somewhat and instead elevates the businessman as an important actor in the market process. However, this may be a contextual interpretation.

In a market without promoters, the market is purely "driven" by entrepreneurs' responses to discovered price discrepancies and expected changes. There is little novelty in production and the market lacks the means to disrupt the structure of production—it lacks the means to move beyond the specialization deadlock (i.e., the extent of the market) other than through minor, incremental changes. Although improvements are possible building on previous

incremental improvements, this is a slow and steady process unable to take the leaps forward provided by promoters (cf. Bylund 2015b). Advanced task splitting and the establishment of new processes that are more than a recombination of already existing tasks are beyond the market's reach without promoters.

But added promoters, who are potentially always present in the free enterprise system, the adjustments carried out by nonpromoting entrepreneurs must always take into account also imagined disruptions by promoters. Empirically, therefore, in markets where there are promoters, *all* entrepreneurs must adjust their production to the imagined future market conditions that must include also potential disruptions by promoters. In other words, in a market that does not preclude promoters the task for nonpromoters will be much more difficult, because market data can undergo dramatic, promotor-caused change. It may not be sufficient to discover the arbitrage opportunity of a price discrepancy if that discrepancy can be made an irrelevant error (and thus unprofitable) by a promoter's disruptive innovation.

This suggests that in the empirical market, which is always subject to potential disruption, there may be less difference between within-market nonpromoters and those entrepreneurs who emulate promoters. Both would need to position themselves and their businesses with respect to existent "errors," whether those errors exist as price discrepancies between market-priced actions or between market-based and promoter-innovated production. As the former are dissipated by the emergence of the latter, there may be no time-extensive simple arbitrage entrepreneurship in the empirical market.

Also, in this situation, where the market can potentially be disrupted, an entrepreneur who is not herself seeking to disrupt the market may still do so. Consider an entrepreneur who aims to adjust his production to what he imagines will be the true future market conditions using resources already available in the market. He assumes or must at least account for potential disruptions in his calculations. As a result, his nonincremental positioning, in effect an attempt to exploit an expected price discrepancy emerging from expected (but not yet occurred) disruption, could *itself* cause a disruption (if the expected disruption does not happen but the

positioning turns out profitable) to which other entrepreneurs will then have to adapt.

This suggests that there may be less difference empirically between the actions of promoters and nonpromoters than the distinction determined theoretically suggests. In fact, the potential for disruption should increase the difficulty of “regular,” nonpromoter entrepreneurship, thereby potentially increasing the burden of uncertainty that they bear.

3. “Profits are the driving force of the market economy” (Mises [1949] 1998, 805)

Similar to the second quote above, it is *new* economic profits that bring about the change in direction for the market economy. Although resource allocation is undertaken for profit, and changes in consumer preferences can shift profitability across production processes, such profit seeking will only redistribute productive effort. Nonpromoters equilibrate the production structure by earning profits from correction of errors, thus responding to what is.

In contrast, promoters break new ground and attempt to create new profits by disrupting production of existing goods or creating new ones. As discussed above, those new profits created by the promoter then attract follower entrepreneurs who attempt to capture part of the profits by emulating the promoter. The island of specialization that is established beyond the specialization deadlock thereby expands to eventually become subsumed under the general market as entrepreneurial bidding determines market prices for the new factors and processes. While the promoter is the entrepreneur instigating the process by earning above regular profits, the follower entrepreneurs also earn such profits but act to undermine them by bidding up the prices of factors. The followers’ profits, however, do not constitute the driving force but are the result of successfully following the promoter. They are also indicative of the end of such profits, since the followers through their actions undermine the promoter’s profitability and allow for the remainder of the market to “catch up” with the innovation and subsume the new specialization intensity. The new profits are then extinguished such that there is no remaining economic surplus available from the original innovation. What remains at that point are profits available through correcting the errors made by entrepreneurs in the market-based production

processes, which should be attainable primarily through arbitrage. Such arbitrage profits do not, however, “drive” the market in any direction other than making comparatively incremental progress toward less costly production (i.e., with fewer/lesser errors).

Finally, it should be noted that it is only the successful promoter that revolutionizes the market. A promoter’s failed undertaking does not cause substantial or lasting change to the market. Thus, as Mises notes, it is the *profits* earned by the promoter that, through profit-seeking follower entrepreneurs, take the market in that particular direction. Promoters suffering losses do not change the course of the market, but can only indicate to potential follower entrepreneurs that the route they chose was not, at least in the way they attempted it, feasible.

The Promoter and Austrian Entrepreneurship Theory

Finally, it behooves us to briefly comment on the nature of the promoter as the driving force of the market economy from the perspective of contemporary entrepreneurship theory. Austrian entrepreneurship theory has over the past decades been dominated by Israel Kirzner’s entrepreneurship as alertness (Kirzner 1973, 1979, 1997). Kirzner borrows from and elaborates on Mises’s conception of “pure entrepreneurship” (Mises [1949] 1998, 254); his entrepreneur is primarily an agent responding to and discovering opportunities in the form of errors (inefficiencies) remaining after previous entrepreneurship (Kirzner 1978). This entrepreneur neither owns capital nor can suffer losses but is defined by alertness—the ability to discover opportunities for arbitrage gains. Thus, entrepreneurship is purely equilibrating.

Although Kirzner’s alert entrepreneur has been subject to criticism, both in the past (Rothbard 1974; High 1982) and more recently (Foss and Klein 2010; Bylund, forthcoming), there are important similarities between his entrepreneur and Mises’s nonpromoter. For example, both are nondisruptive and responsive to change; they strive for improved adaptation through adjustments and reallocations, and they deal primarily with discovering and correcting already existing errors (opportunities) within the market. This is different from the promoter’s attempted disruptions. As Salerno (1993, 123) notes, “For Mises, the promoter concept goes beyond

the category of the pure entrepreneur derived from the action axiom.” In contrast, “Kirzner’s analysis of the market process has no use for the concept of the dynamic promoter-entrepreneur who is perpetually forecasting and appraising the future in quest of anticipated profit opportunities” (Salerno 1993, 127).

The promoter’s placing of new production beyond the extent of the market, and thus outside of the specialization deadlock, is the market’s “driving force.” Entrepreneurial discovery of arbitrage opportunities can only bring the market closer to realizing what is already possible given the present structure of the economy. In other words, these opportunities are profitable corrections to the allocation of resources, a result of previous entrepreneurs’ inefficient solutions.

In contrast, the actions of promoters should undermine the alert entrepreneur’s attempted equilibratory actions by actively causing change to the market data by disrupting production, introducing new goods, etc. They create, when successful, new profits through novel production that is impossible to undertake within the present market’s production structure. In this sense, it seems that Mises’s promoter, as compared to the “pure entrepreneur” and the nonpromoter, may have more in common with both Schumpeter’s ([1911] 1934) innovator as instigator of “creative destruction” and Lachmann’s ([1956] 1978) reformer of the capital structure (see e.g., Horwitz 2019) than with Kirzner’s alert entrepreneur.

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AUTARKIC ENTREPRENEURSHIP

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JEL CLASSIFICATION: B53, L26, D10, D13

ABSTRACT: The so-called autistic economy (here autarkic)—the economy of one—has been employed by Austrian theorists as a useful analytic baseline on which to build catallactic (market process) theory, which has included a theory of entrepreneurship. But so far, the autarkic economy has been examined almost exclusively in this way. In this article it is argued that the autarkic economy must be brought forward in our theorizing to be understood not as a mere analytic tool, but as a real and significant aspect of praxeology. It is proposed that catallaxy and autarky be understood as substitutes, complements, and even competitors. Extending Austrian theorizing of the autarkic economy, the entrepreneurial function within autarkic economies is examined and elaborated. It is shown that, far from only a catallactic role, the entrepreneurial function is prominent within the autarkic economy also, in which the entrepreneur plays a significant role in augmenting individual lifestyles and, thus, total economic development.

INTRODUCTION

In the 2000 film *Cast Away*, character Chuck Noland (Tom Hanks) found himself stranded alone on an uninhabited island with an extremely limited number of resources and tools for his survival. A systems engineer for a shipping corporation, Noland also possessed

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limited knowledge and experience relevant to his newfound circumstances. With the familiar knowledge that rubbing sticks together could produce fire, he set himself to the task to little avail. In near desperation, Noland accidentally split one of the pieces of wood. Giving the split piece of wood another try, the kindling began to smoke. Realizing that the split piece of wood afforded the kindling additional access to air, he innovatively increased that access by sweeping an air canal in the sand beneath the kindling and by inserting a small object into the split wood to keep it open. Putting himself again to the task, he finally ignited the kindling and produced a fire. Elated, he exclaimed, "Look what I have created!"

The question this article seeks to answer is this: Was Noland an *entrepreneur*?

Austrian school economists, beginning with Carl Menger, have started their economic theorizing from the perspective of the "autistic" or "autarkic"¹ economy (Mises 1998, 244), the single-person "isolated household economy" (Menger 2007, 75),² the "Crusoe economy" (Rothbard 2009, 319), the economy of one. It seems strange to the modern economist to suppose a single person to be an "economy"; but it is, in fact, the mainstream economist's difficulty in grasping this fundamental reality that has impeded a much deeper analysis and understanding of economic processes. After all, a single actor produces and consumes, demands and supplies, values, innovates, and economizes. If economics cannot explain a single actor's economizing of their own scarce resources within the bounded scope of their own life and property, it cannot succeed in explaining human action more broadly.

¹ Mises (1998) uses both terms—*autistic* and *autarkic*—in similar fashion but formally adopts *autistic* to reference the economy of one and *autarky* to reference political self-governance. However, modern idiom has laden the term *autistic* with the burden of a human development disorder. To avoid potential confusion (see, e.g., Devine 2006), I have elected to employ *autarkic* in the place of *autistic*.

² I should here clarify that whether an "isolated household economy" (Menger 2007, 75) is autarkic or catallactic hinges on whether there is interpersonal exchange of produced goods. Thus, if there is a single producer in the household, there is no market and the household is "at the disposal of a single economizing individual," i.e., autarkic. If there are multiple producers in the household, however, interpersonal exchange and a division of labor between producers can emerge, whether prices of some form are used or not, in which case it is catallactic.

Of course, microeconomies, such as households, are not an insignificant aspect of current economic theorizing. Family and household economics have been developed by, e.g., Gary S. Becker (1965, 1991), Robert A. Pollak (1985), Theodore W. Schultz (1975), Kelvin Lancaster (1975), and many others since. But at this microscopic level, although the supply side is admitted as an input into the market's circular flow, attention has been arrested almost wholly on the demand side, exploring the economics of how individuals and households determine what to demand (e.g., Michael and Becker 1973), which can then be aggregated into utility functions for macroeconomists. Thus, microeconomics has come to be dominated by behavioral economics and its consumer behavior theories, while "Crusoe economics" has come to be largely dismissed and ridiculed.

Even within the Austrian school autarkic praxeology has remained vastly underdeveloped, so far employed primarily as a building block toward understanding catallactic processes. Thus, even Austrian theory has neglected (but not altogether ignored) a vast and vital aspect of the overall economy—the extensive autarkic or do-it-yourself (DIY) economies that we each embody.

This research has two main functions. First, it advances an argument that autarkic economies are not at all inconsequential, but ought to be brought to the fore of Austrian theorizing. This piece of the praxeological puzzle places the autarkic economy as a real and direct competitor, or sometimes complementor, of the catallactic economy. In short, DIY is a real and common substitute for satisfactions purchased in catallactic markets. By focusing myopically on catallactic exchange, we overlook a critical option within a vast majority of consumer choice sets.

Its second function is to advance Austrian theorizing on autarkic economics by introducing and elaborating the concept of autarkic entrepreneurship. Although Austrian theorists have, again, focused almost exclusively on the *catallactic* function of the entrepreneur (e.g. Kirzner 1973; Lachmann 1986; Mises 1998), there is nothing about the entrepreneurial function *per se* that concribes it to catallaxy alone. Instead, it is shown that the entrepreneurial function is very much alive and well within the autarkic economy also. To make a compelling case, it is necessary to first carefully examine and elaborate

the essence of entrepreneurship, as this essence has been the source of some disagreement among Austrian theorists (and others).

AUTARKIC ECONOMICS

So-called Crusoe economics—“that much maligned but highly useful analysis that sets individual man starkly against Nature and analyzes his resulting actions” (Rothbard 2009, lvi)—is the backbone of Austrian theorizing. As Ludwig von Mises (1998, 244) put it, “economics cannot do without it.” Both Mises and Murray N. Rothbard in their seminal treatises precede their analysis of interpersonal or catallactic exchange with a baseline theory of the “autistic economy,” a foundational foil in which interpersonal or catallactic exchange is absent, without which we could not see what catallactics would add, specifically, to the analysis. That is, to see *why* we voluntarily form and interact in a market, it is first necessary to understand how one economizes without one. However, this largely neglected aspect of economic theory is far more interesting and important than we have so far admitted.

Autarkic Exchange

Economic action is comprised of *two* types of exchanges: *catallactic* and *autarkic*. Catallactic exchange references the traditional market exchange, which is the centerpiece of modern economic theory. However, it is not the only type of economic exchange. “Autistic [or autarkic] exchange consists of any exchange that does not involve some form of interpersonal exchange of services” (Rothbard 2009, 84). But how can one *exchange* except with another?

A satisfactory answer to this is found in the deeper analysis of economic action that Mises evokes: “Action always is essentially the exchange of one state of affairs for another state of affairs. If the action is performed by an individual without any reference to cooperation with other individuals, we may call it autistic [or autarkic] exchange” (Mises 1998, 195). In other words, life, even in social isolation, is comprised of endless tradeoffs, which, in a strict economic sense, can and, perhaps, should be theoretically described as an *exchange*. By cooking one’s dinner, one exchanges time, labor, and raw foodstuffs

for a warm meal—one no longer has those resources available, which could have plausibly been used for other productive ends. However, the hot, homecooked meal is valued over whatever alternative uses one might find for that time, labor, and those foodstuffs and, thus, one chooses to make the exchange.

But with whom is one trading in such an exchange? There is no clear answer to this. We might say that one is trading with oneself, or with no one, or perhaps “with nature” (Kirzner 1973, 37). Nothing is being given *to* anyone—yet there is an exchange made, scarce resources for consumable goods and services. Thus, the principle of “opportunity cost” extends to the autarkic economy, for there is an opportunity cost that is sold in exchange for any chosen action.

The implication of this is that much of the economy is autarkic, individuals acting *for themselves*. If you were to break down your day into autarkic and catallactic actions (exchanges), it should be little surprise that a significant part of each day is comprised of autarkic exchanges, which can include rest and sleep, personal hygiene, eating, certain entertainment options, and so forth. The autarkic economy is not just a useful analytical foil but is a real and significant part of the human experience.

The Autarkic Economy

When you are ready for a meal, does your mind instantly wander to those restaurants available to you that might provide you with a prepared meal? When your teeth feel dirty, do you call your hygienist? Do you employ a housecleaning service to pick up after you and make your bed each day?

A significant amount of economic value *we facilitate for ourselves* rather than satisfying those unmet needs and the sense of “uneasiness” through catallactic market exchange. It is true that *sometimes* we like to dine out, to get our teeth professionally cleaned, or to have our homes tidied up by hired hands. But far more often we perform these tasks for ourselves.

This raises a question: If we do such tasks ourselves, what happens to the economic value that the professionals did not capture from us? Is such value lost because we were unwilling to pony up our savings in support of the local economy? The answer is, of course, that we

capture such economic value ourselves—the benefit of the service, i.e., the economic value, is obtained while the cost of obtaining it is retained, largely, by the do-it-yourselfer, leaving those costs available for the pursuit of other ends. In other words, the do-it-yourselfer participates not in *catallactic* exchange, but in *autarkic* exchange. In terms of a simple utility function, the expected utility, all costs and benefits accounted for, is in many cases greater in the autarkic economy than in the catallactic economy. It is often better overall (e.g., cheaper, more rewarding) to do it yourself than to pay another to do it.

Contrast such cases with, for example, the value provided by a medical surgeon. While it is true that self-diagnosis has become easier than ever with the vast amount of medical information that we now have access to online, few of us would perform anything more than a minor toenail surgery on ourselves. Many market needs are too complex, involved, or require significant expert training that do-it-yourself amateurs do not have and, thus, cannot do for themselves, at least not without some additional capital goods. One cannot massage one's own back without the use of some additional capital goods that would allow me to reach those tight muscles. Leonard Read's (1958) famous essay "I Pencil" illustrates the limitations of autarkic production well. The autarkic economy alone simply cannot provide economic goods even as simple as a pencil due to their complexity and the total knowledge, skill, and capital required.

Thus, at one end of the spectrum, we have certain services that, in fact, *cannot* be performed by catallactic markets. For example, the spiritual needs and values that many economic actors pursue through, e.g., churchgoing *cannot* be contracted out, the benefits pursued accruing only to those who go and do for themselves. Similarly, while we have, in recent decades, found new ways to socially connect people, such connections, including love, must always be made by those persons themselves, and cannot be purchased from or contracted out to others.

At the other end of the spectrum, we have some services that absolutely *cannot* be performed autarkically. At this extreme end we are talking about literal impossibilities. One cannot, for example, both perform a play and enjoy it live from the gallery at the same time. Close to that end of the spectrum would be those goods and services that, although not *literally* impossible to perform for one's

self, are far too complex for a single actor, such that it is *effectively* impossible (e.g., computer manufacturing).

Many economic goods and, especially, services, however, lie somewhere between these extremes, where the economic actor has a real choice whether to do it (or make it for) themselves or else pay someone else to do it. In these circumstances, the value of doing it yourself (e.g., cost savings) is counterbalanced by other considerations, such as the quality of work. Although it seems silly to even think of a catallactic market for some services, such as showering or getting dressed in the morning, these services *could* be contracted out (if, for example, physical ailments made such activities impossible to do one's self). However, these services we prefer to do ourselves (if we can), because the cost of doing so is low, whereas the cost of contracting on the market for such services would likely be quite high. You can hire a chauffeur, but such is a luxury for the very wealthy, whereas it is not excessively costly to drive yourself. Conversely, a great many goods and services *could* be done autarkically, but the costs of doing so are prohibitively high, while the cost of hiring them out is quite low—you can buy a pencil for under ten cents.

The most interesting examples, however, are far more moderate. If a homeowner decided to repaint a room, she would be faced with a decision of whether it is worth hiring professional painters, who would save her the time and likely do a higher-quality job, or else save hundreds of dollars doing the job herself. Such decisions, which most of us regularly face, illustrate a key insight: that the autarkic and catallactic economies are often *competitors*. A restaurant is in competition with other restaurants, certainly. But it is *also* competing against your kitchen and recipe book—the uneasiness (i.e., hunger pangs) that we look to satisfy by going to a restaurant can also be satisfied ourselves if we decide that our own efforts in doing so are worth the advantages. There are a great many goods and services that are comparable, in terms of cost and benefit, between the autarkic and the catallactic economies.

Not all autarkic activities are competing with catallactic markets, however. In many cases they are *complements*, together combining to augment total achieved value. For example, while we generally like to wash ourselves, we generally use market products (e.g., shampoo) to do so. In fact, it is interesting to observe that catallactic

markets have arisen as *supports* to the autarkic or DIY economy, such as home improvement stores and DIY instructional platforms.

Economic analysis that fails to account for the very real and productive autarkic economy is incomplete. A business strategist that focuses myopically on industry competition may be severely unprepared when consumers turn away from that industry completely to perform the needed services themselves. For example, the tax accountancy industry has greatly suffered as online tax preparation software has enabled people to prepare and file taxes cheaply and easily themselves. Home kitchen technologies (such as bread makers, sous vide machines, and pressure cookers) have made preparing high-quality homecooked meals much easier and accessible to the culinarily untrained. Entertainment options not only include productions by entertainers but also autarkic options such as social gatherings, afternoon strolls, family game nights, and quiet evenings enjoying the starlight on the porch.

By theoretically elaborating the autarkic economy, we gain a much more complete picture of economic phenomena, including economic growth and change.

Fundamentals of the Autarkic Economy

Before advancing the question of entrepreneurship within the autarkic economy, let us first lay some additional groundwork. How are we to define and understand this DIY economy? The fundamentals here are essentially equivalent to those laid out by Menger (2007), Mises (1998), and Rothbard (2009). But let us be explicit.

The first and most fundamental construct is *subjective value*. “Value is...the importance that individual goods or quantities of goods attain for us because we are conscious of being dependent on command of them for the satisfaction of our needs” (Menger 2007, 115). In other words, subjective value is not something that a thing *has* but is something an individual actor *does*—things do not *have* value, rather we *value* things. Because of this, value is individual and can be very different for different persons. Subjective value is, in fact, a wholly autarkic construct and not a catallactic construct—there is no *interpersonal value*. Although individual values may shift when embedded within social groups, Austrian methodological

individualism demands that we still understand such valuations individually, and not as the brainchild of some “real” collective.

We have already seen that *exchange* is both an autarkic and catalactic construct. Because of this, we can also integrate the concept of *price* in the Mengerian sense—“the quantities of goods actually exchanged” (Menger 2007, 191)—as well as the *opportunity cost* (i.e., “the next best alternative forgone” [Rothbard 2009, 266]) into the autarkic economy. These costs are what is sacrificed in order to attain the valued benefit. Autarkic exchange, however, has no need of a “medium of exchange” or a “money” (Mises 1912), which is confined to catallactic exchange.

Let us also define *economy* for the purpose of this discussion. While it is rarely, if ever, explicitly defined, it becomes clear in the classical Austrian works that ‘economy’ represents the productive pursuit of need satisfactions through purposeful action. Thus, the underlying driver of economy is unmet human needs:

An imperfect satisfaction of needs leads to the stunting of our nature. Failure to satisfy them brings about our destruction. But to satisfy our needs is to live and prosper. Thus the attempt to provide for the satisfaction of our needs is synonymous with the attempt to provide for our lives and well-being. It is the most important of all human endeavors, since it is the prerequisite and foundation of all others. (Menger 2007, 77)

The mechanism of economy, the response to unmet needs, is *purposeful human action* (Mises 1998; Rothbard 2009). In fact, *all* economic action is purposeful (Mises distinguishes action from animalistic instinct and impulse), being universally pointed at the satisfaction of unmet needs. Let us, thus, define *economy* here as the productive actions taken toward the satisfaction of human needs.

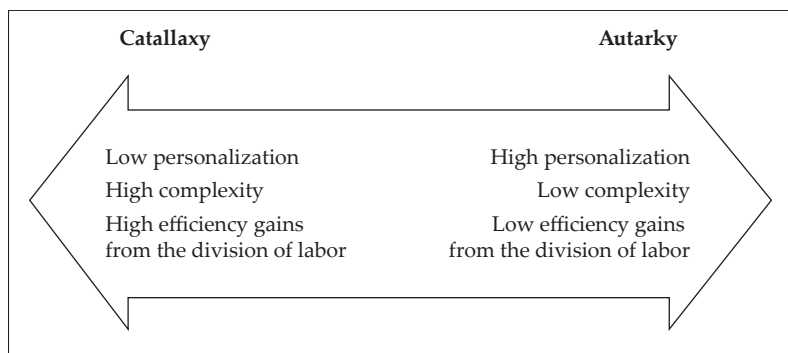
Economic *profit*, then, refers to “the increase in satisfaction (decrease in uneasiness) brought about” through exchange (autarkic or catallactic), “the difference between the higher value attached to the result attained and the lower value attached to the sacrifices made for its attainment” (Mises 1998, 286). An economic *loss* is, then, a “a decrease in satisfaction” (Mises 1998, 287), where that which is sacrificed surpasses that which is gained in return. Thus, both economic profit and loss are always “*psychic phenomena*” (Mises 1998, 287; emphasis added), wholly subjective.

Economic *growth* and *decline*, finally, refer to the overall satisfaction of human needs, in the aggregate, throughout the economy (as conscribed by the delimiters of the described economy, e.g., individual, household, local, national, global), whether it is *increasing* or *decreasing*, respectively, by average economic profits exceeding losses or *vice versa*. An autarkic economy grows, then, when an individual actor's overall wellbeing is increased, when his needs are more fully met by those resources at his disposal.

Delineating the Autarkic and Catallactic Economies

Let us, now, draw clear theoretical boundaries between the autarkic and catallactic economies. The definitional boundary is clear—an economy is autarkic inasmuch as it involves no interpersonal exchange and is catallactic otherwise. But let us expound briefly on the theoretical underpinnings between autarkic versus catallactic action, i.e., when and why one might be preferable to the other. These mechanisms involve, as previously implied, the personal nature of the uneasiness needing satisfaction, the complexity of the satisfaction desired, and the costs of bringing the satisfaction about (see figure 1).

Figure 1. Catallactic versus Autarkic Economizing



First, some human needs are innately personal in nature and, thus, must be satisfied for one's self. These generally comprise the *psychological* and *spiritual* needs—whatever they may be—of human

existence. Per self-determination theory (Deci 1980; Deci and Ryan 2000), basic human psychological needs include autonomy, social relatedness, and competence. Satisfaction of each of these must be achieved for one's self—they cannot be purchased from others, though catallactic services and solutions might help individuals to achieve them. What might be called spiritual needs, such as hope (O'Hara 2011), are similarly personal in nature. In contrast, *physiological* needs, such as food, water, shelter, medicines, etc., are comparatively universal and can easily be obtained via catallactic exchange. Also, some psychological and perhaps even spiritual needs, such as need for excitement (Scitovsky 1981), may be sufficiently generic to allow satisfaction to be purchased through catallactic exchange.

A second factor in determining whether satisfactions are pursued via autarkic or catallactic economy is the *complexity* of the satisfaction. As the pursuit of satisfaction evolves toward more complete and, thus, more complex solutions, the complexity of such satisfaction grows beyond the capacity of a single actor and requires the cooperative productive efforts of multiple actors. For example, most market services, such as housecleaning, car repair, and cooking are doable by knowledgeable consumers because they require only a moderate amount of human capital. In contrast, most manufacturing and production requires far more human capital than a single person can possess, requiring multiple actors to act cooperatively. It is this problem that underpins Bylund's (2016) thesis that firms arise out of a need to overcome a *specialization deadlock*, which arises out of the fact that complex consumer satisfactions require a greater division of labor. Because such specialization is dissuaded by market pressures, entrepreneurs must contractually guarantee salary to market actors to overcome the propensity toward generic human capital and motivate their investment in the needed specialization for complex production. In other words, as solutions become more complex, catallactic markets and, specifically, firms are needed for their efficient production.

Relatedly, the boundary between the autarkic and catallactic economies lies in differences in their efficiencies due to the division of labor. In the evolution of the catallactic economy, some solutions have become so efficiently produced through specialization that it is simply much more economically efficient to purchase those solutions from specialists rather than to produce those satisfactions

for one's self. For example, although it is still possible for one to make one's own clothing, soap, or quilt, the efforts to do so are now far costlier than to simply purchase those goods on the market. Although some still enjoy sewing, soapmaking, and quilting as hobbies, for most the catallactic economy clearly outperforms the autarkic economy for such production. In contrast, other satisfactions, such as meal preparation and various home improvement efforts, are still often cheaper to do for one's self. Thus, inasmuch as a division of labor can decrease total costs, the preference between autarky and catallaxy shifts toward the catallactic side.

THE ENTREPRENEURIAL FUNCTION

Before we can begin our exploration of the entrepreneur function within the autarkic economy, we first need to carefully define what this entrepreneurial function is. This question, of course, has been a source of some debate among economists, including Austrians. In fact, the modern academic discipline of entrepreneurship has been in active debate over the nature and foundations of entrepreneurship for over three decades now, to no imminent conclusion (see, e.g., Gartner 1988; Ramoglou, Gartner, and Tsang 2020).

Prevailing Definitions of Entrepreneurship

The nature of entrepreneurship has been examined from several angles already. Peter G. Klein (2008) classifies these various approaches to entrepreneurship into three distinct categories: *occupational*, *structural*, and *functional*. The first two, occupational and structural, pertain to economic realism or positivism as prevails in the economic mainstream, supposing entrepreneurship to be a thing that *exists* in the economy. The latter category, functional approaches, is characteristic of and to the Austrian school, depicting entrepreneurship as something that economic actors *do* within the economy.

Neoclassical Economics

Early entrepreneurship research in mainstream (primarily neoclassical) economics depicted entrepreneurship as either an occupational or structural phenomenon. "*Occupational* theories

define entrepreneurship as self-employment and treat the individual as the unit of analysis, describing the characteristics of individuals who start their own businesses and explaining the choice between employment and self-employment” (Klein 2008, 176). Classic exemplars of such an approach include Kihlstrom and Laffont’s (1979) classic risk aversion model and Parker’s (2009) composite review of the self-employment research.

Alternatively, “*structural* approaches treat the firm or industry as the unit of analysis, defining the entrepreneurial firm as a new or small firm. The literatures on industry dynamics, firm growth, clusters, and networks have a structural concept of entrepreneurship in mind” (Klein 2008, 176). This approach to the study of entrepreneurship was empirically popular among early entrepreneurship scholars (e.g. Acs and Audretsch 1989, 1990; Oakley, Rothwell, and Cooper 1988).

Notably, both of these approaches are clear in their implication for the autarkic economy—entrepreneurship is a catallactic phenomenon only. This is, perhaps, not surprising given that the positivistic foundations of mainstream economics imply that entrepreneurship exists *in* the market economy (and, so, is not to be found *out* of it).

Austrian Economics

The Austrian school of economics has set itself apart from the economic mainstream, among many other ways, by characterizing entrepreneurship as an economic *function*. Entrepreneurship is not something that exists *in* an economy, but is something that certain economic actors *do*, a function that they perform. Austrian theory has examined the role of the entrepreneur—what his purpose is and what effects he has on the economy—whereas mainstream economics, both neoclassical and Keynesian, has simply assumed away this role, taking the small business as already given (Casson 1982; Hébert and Link 1988, 2009). In other words, positive economics takes the entrepreneurial firm as extant and real, and so offers no theory of its emergence in the first place. In this only the Austrian school has had anything meaningful to say. Here let us consider the different entrepreneurship theories of the Austrians,

namely those of Joseph A. Schumpeter, Mises, Israel M. Kirzner, and Ludwig M. Lachmann (ordered chronologically).

Although some do not include Schumpeter as a member of the Austrian school, in this sense he belongs with the Austrians. Schumpeter (1934, 66) conceived the function of the entrepreneur to be innovation, i.e., “the carrying out of new combinations,” which he defined broadly to include the introduction of economic novelty to the market in five different categories:

- (1) The introduction of a new good—that is one with which consumers are not yet familiar—or of a new quality of a good.
- (2) The introduction of [a] new method of production, that is one not yet tested by experience in the branch of manufacture concerned, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially.
- (3) The opening of a new market, that is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before.
- (4) The conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created.
- (5) The carrying out of new organization of any industry, like the creation of a monopoly position (for example through trustification) or the breaking up of a monopoly position.

Thus, Schumpeter’s entrepreneur is the introducer of novelty into the production system, the disrupter of Walrasian equilibrium. Note that this entrepreneurial function is different from the “inventor” function, which merely devises the novelty. Although the inventor (who creates the novelty) and innovator (who brings it to market) are often the same person, they need not be. Although Schumpeter takes no interest in autarkic economics, one can infer from this that his entrepreneurship theory might include Noland or Crusoe whenever they innovated.

Mises’s work on entrepreneurship is somewhat limited and yet remarkably profound. However, because it is limited, the essential function of the entrepreneur in Mises’s treatment is somewhat unclear. The standard interpretation of the Misesian function of the entrepreneur is as *speculator*, the bearer of uncertainty and of risk³

³ Whereas Knight (1921) describes risk as a situation of known outcome probabilities *in contrast* to uncertainty, Mises depicts risk as what one stands to lose within uncertain endeavors.

in the allocative investment of scarce resources. While the capitalist earns interest and the worker earns wages, the entrepreneur is the one who “earns profit or suffers loss” (Mises 1951; 1998, 255). However, Mises (1998, 288) also, quite explicitly, observed that “The specific entrepreneurial function consists in determining the employment of the factors of production.” Certainly, such resource allocation *is* speculation and necessarily bears uncertainty. But it is not clear whether the true essence of the entrepreneur is, for Mises, in the speculation or in the resource allocation. Rothbard and Kirzner assumed the former, Lachmann the latter. I will come back to this question shortly.

Mises (1998, 252–53) explicitly depicts the entrepreneurial function as a catallactic one. However, he seems to understand this characterization (“catallactic”) more generally as an economic function, for also included among these “catallactic” functions are *consumer*, *landowner*, *capitalist*, and *worker*, all of which are autarkic economic functions also, and not merely confined to interpersonal market activities.⁴ Thus, although Mises formally discusses the entrepreneurial function as a “catallactic concept” only (Mises 1998, 253), it can certainly be extended to the autarkic economy also.

Although Kirzner’s work has centered on the entrepreneurial function, the essence of this function has been rather difficult to pin down. Most understand Kirzner’s entrepreneurial function to be the discovery of yet unexploited “opportunities,” for which he has been much criticized (e.g., Foss and Klein 2010; Rothbard 1985, 1997). Thus, the unique feature that characterizes the entrepreneur is his “alertness” to such opportunities where others have overlooked them. But Kirzner’s conception of an opportunity is rather unclear, especially as pertaining to autarkic versus catallactic processes. The standard definition of *opportunity* is as a “market imperfection” (Alvarez, Barney, and Anderson 2013), a situation in which the entrepreneur “buys where prices are ‘too low’ and sells where prices are ‘too high’” (Kirzner 1997, 70), plausibly obtaining for himself a pure profit with no cost or risk to himself (Kirzner 1973). One footnote of particular relevance, however, illustrates the difficulty in interpreting Kirzner on this point:

⁴ Although land ownership has little apparent meaning in a wholly isolated autarkic economy (à la Crusoe), in another sense property (e.g. land) ownership is what enables autarkic economy within the catallactic economy.

In a world of perfect knowledge the only scope for decision-making relates to opportunities for exchange—either with man or with nature—something one values relatively little for something one values more highly. In a world of imperfect knowledge, there may exist at any given time something selling at more than one price in the market. Once this price difference is noticed, once some *knows* it, a profit opportunity has been discovered. (Kirzner 1973, 37n4–38)

Observe here that Kirzner defines opportunity in two ways. In the first, it is a situation in which valued goods can be exchanged for something of higher value, thereby achieving a pure profit. In the second, he defines it as a situational price difference that can be exploited for a pure profit. Although these seem essentially equivalent, there is a critical difference, especially for the research at hand. Price differences, of course, necessarily imply a catallactic economy. However, according to his first definition of opportunity, such exchange—*either with man or with nature*—need not be catallactic, but apparently includes autarkic exchange “with nature” (such as exchanging valuable time and labor for the goods of nature acquired from those efforts). Thus, we can also ascribe to Kirzner an entrepreneurial function of new value discovery that fits both the autarkic and catallactic economy contexts.

Lachmann (1977, 1978), finally, sees entrepreneurs “as ‘problem-solving’ individuals who ‘change’ and ‘direct capital flows’” (Endres and Harper 2013, 306). In other words, the essential function of Lachmann’s entrepreneur is to reorganize capital more efficiently. In this sense, Lachmann’s entrepreneur overlaps significantly with Schumpeter’s and Mises’s, and only lightly with Kirzner’s. Lachmann expends some effort advancing the notion of *capital*, which is often, in traditional economics, understood to be given by its objective nature. Lachmann, however, rejects this objectivism—capital is only given by *entrepreneurs*, who create from the (objective) properties of things new and better (subjective) purposes or uses for those things, reconceptualizing them into new capital goods. For example, wood material is merely matter of a certain type until some entrepreneur imagines out of it the purpose of comfortably sitting and, thereby, creates out of that matter the capital good of “chair.” Once again, while Lachmann theorized this entrepreneurial function within the context of the catallactic economy, it appears equally valid in an autarkic economy.

Each of these entrepreneurship theories holds merit in depicting important economic functions that serve to explain economic change processes. However, each one seems to focus on a different economic mechanism, which prompts us to ask, again, what is the *real* entrepreneurial function?

The Entrepreneurial Function Reconceptualized

There is, perhaps, no “right” answer to the question of what the entrepreneurial function is. The question is definitional and, thus, analytic and tautological. Each of the functions outlined above is a real economic function, with specific and relevant economic effects. By what criteria might we determine which is the most apropos to economic theory?

It seems that the best and, in fact, only criterion that could direct such a judgment is the economic effect that one seeks to explain by the concept of *entrepreneurship*. To make this argument, let us follow the standard Austrian method of starting with the artificial foil to which we will add the entrepreneur—a society in which there are no entrepreneurs whatsoever. Let us start with Mises’s *evenly rotating economy* (ERE).

The Evenly Rotating Economy

The ERE is “a fictitious system in which the market prices of all goods and services coincide with the final prices. There are, in its frame, no price changes whatever; there is perfect price stability. The same market transactions are repeated again and again” (Mises 1998, 248).

What would occur if value scales, technological ideas, and the given resources remained constant? What would then happen to prices and production and their relations? Given values, technology, and resources, whatever their concrete form, remain constant. In that case, the economy tends toward a state of affairs in which it is *evenly rotating*, i.e., in which the same activities tend to be repeated in the same pattern over and over again. Rates of production of each good remain constant, all prices remain constant, total population remains constant, etc. (Rothbard 2009, 321)

The ERE allows us to “analyze the problems of change in the data and of unevenly and irregularly varying movement” (Mises 1998, 248). There is no uncertainty in the ERE whatever; all actions are perfectly predictable, and all actors are mere automatons, performing perfectly their prescribed duties. Thus, the ERE is a “state of *final equilibrium*” (Rothbard 2009, 321).

Adding the Entrepreneurial Function

Let us now add the entrepreneurial function to the ERE, where we have no economic change whatsoever. To understand what sort of change is introduced by the entrepreneur to the ERE, we have to first examine what the entrepreneur is trying to accomplish—i.e., what is the goal of the entrepreneur? The purpose that drives the entrepreneur is distinct from that of the “manager,” whose role is circumscribed to “a limited and precisely determined sphere of action” (Mises 1998, 301), namely the (re)production of goods according to established plans. The aim of the entrepreneur, and of the entrepreneurial function, is to generate and purvey such “entrepreneurial plans” (Lachmann, 1977, 1986; Mises, 1998, 300). These plans—distinct from the managerial function of carrying out existing plans for economic value facilitation through production—are pursuant of new and better ways to economize existing resources and activities. They seek to facilitate a higher economic state, to achieve economic growth. Such economic change is accomplished in several ways. We focus here on the effected changes, driven by the entrepreneurial function, on “values, technology, and resources” (Rothbard 2009, 321), which can no longer be held constant.

First and perhaps foremost, economic change can be accomplished by changing the technology by which resources are employed toward need satisfaction. By creating new knowledge about what resources can do, by reconfiguring resources into “New Combinations” (Schumpeter 1934) or new forms of capital (Lachmann 1978), new solutions are created whereby total need satisfaction might be augmented, thereby achieving a higher economic state. Or else the new solution might prove ineffective, and the resources taken away from their more productive uses are wasted in ineffective production, generating an economic loss.

Second, this economic change can be accomplished by reallocating resources more effectively. Under the ERE, present resource allocations are merely replicated, oblivious to any possible gains that might be achieved through optimization. The entrepreneurial function, however, may alter presently inefficient resource allocations toward more highly valued ends (Kirzner 1973), facilitating economic growth. Again, there is a chance that such reallocation results in economic loss, the previous resource allocation proving the more valuable or else the cost of reallocation proving too steep to warrant the change.

Third and, perhaps, least discussed, economic change can be accomplished by the shifting of subjective values. If, as some philosophies and religions teach, humankind were to learn greater contentment within their present world of scarcity, total economic value and satisfaction might increase with no changes to the productive structure whatsoever. That is, because satisfaction is a subjective state—a state of mind—such a state can be achieved by altering the mind rather than the exogenous effects on it. However, it is also possible that people instead learn to want more and more, to become increasingly or perpetually *dissatisfied*, as has become common in the modern age of consumerism and instant gratification. Thus, shifting subjective values can also either increase or decrease total aggregate well-being. Strictly, the entrepreneur has no direct access to such subjective values, which are the sole purview of individual consumers, to effect such change. However, it is within the entrepreneur's purview to influence such change by "pushing and promoting" (Mises 1998, 255) their ideas.

In short, by introducing changes to an economy by shifting resource allocations, the entrepreneurial function introduces a profit and loss mechanism (Mises 1951, 1998). But let us be careful here. Although entrepreneurship is a primary source of economic profit and loss, it is not the *only* one in a real economy. Were we to relax the ERE to allow changes not instigated by entrepreneurs, it is possible that such changes, such as shifting demand, depleting supply, etc., would also cause economic shifts, up or down. If, instead of adding the entrepreneurial function to the ERE, we added only the ability for demand to change, such shifts in demand would also cause economic growth or decline. If, all else held constant, consumers suddenly changed their

preferences from blue shirts toward orange shirts, the supply of blue shirts would suddenly become excessive and the supply of orange shirts would then be insufficient, producing an economic decline. Or, if supply were allowed to change, newly discovered supplies might increase total satisfaction outputs, while depleted supplies would cause markets that require the supply to evaporate, leaving consumers less satisfied.

Thus, the entrepreneurial function generates economic profits or losses, causing growth or decline. It is not the only source of such change, but it is the most consequential. And, perhaps more importantly, although other allowed economic changes might result in greater or lower economic value, entrepreneurship is *intentional*, pursuant always of greater individual well-being and, thus, economic value. While entrepreneurial failure is common, entrepreneurs generally accept the risks of such venturing only when economically feasible, the risks worth the rewards. Thus, the tendency of entrepreneurship-driven change is toward economic growth, which is why societies that promote greater entrepreneurial activity tend to see higher rates of economic growth (Bjørnskov and Foss 2013, 2016; Holcombe 1998; Packard and Bylund 2018). However, as Baumol (1990) reminds us, some entrepreneurs' individual pursuit of economic value may come at the expense of others' well-being and so may not be net productive. Furthermore, *intending* to generate new economic value does not imply success, and the efforts of doing so can result in resource maldistribution and loss. Thus, while entrepreneurship is the engine for economic growth, not all entrepreneurship will result in such growth.

But what is the ultimate source of this economic growth? Is it innovation (Schumpeter 1934)? Opportunity discovery and exploitation (Kirzner 1973; Shane 2003)? Perhaps opportunity *creation* (Alvarez and Barney 2007)? Or capital allocation/investment in uncertainty (Foss and Klein 2012; Lachmann 1978)? The answer to all of these seems to be yes. Each of these economic subprocesses contains the profit/loss function that characterizes entrepreneurship. Each of them bears uncertainty, generating profit when successful and

losses when not.⁵ The entrepreneurial function that we are seeking is, thus, broader than any of these specifically.

Let us step back from such specifics and proffer a more general and generalizable definition of entrepreneurship, then. The essential features of the entrepreneurial function, based on this analysis, include intentionality toward economic (psychic) profit and the commitment of resources (broadly defined) to do so. Thus, we can define entrepreneurship as “the intentional pursuit of new economic value” (Packard 2017, 544) through resource investment. By “economic value” we again mean a general increase in individual, subjective well-being. Generally, then, such endeavors are the source of new economic growth, which is again understood as an overall increase in the quality of life. This definition captures the entrepreneurial function as a whole and all types of entrepreneurial activities, while excluding unintentional sources of economic change.

If entrepreneurship entails all intentional pursuits of new economic value, such pursuits would entail pursuits of increases to and betterments of need satisfactions. They would include product and process innovations and improvements. They would include large and small changes. And they would include each and every previously defined entrepreneurial function reviewed above.

A REASSESSMENT OF THE MISESEAN ENTREPRENEUR

Let us return here to the ambiguities in Mises’s defining of the entrepreneurial function. It is proposed that a more careful reading of Mises lands us on an understanding of the entrepreneurial function that is essentially equivalent to the one that we have just arrived at. However, it is rather different from the one widely supposed within modern Austrian academia.

⁵ Kirzner (1973), of course, supposes that the *pure* entrepreneurial function can be employed without any capital investment and, thus, risk of loss whatsoever. But Kirzner errs here in failing to account for the autistic exchange (Mises 1998, 195–96) of the entrepreneurial endeavor. A “pure” entrepreneur still must expend time and effort, which might have been employed in other productive efforts, which can be lost in the case of failure. There can, in fact, be no entrepreneurship without uncertainty or risk of loss.

The modern view of Mises's entrepreneurial function is as *speculator*, the bearing of uncertainty. "Like every acting man, the entrepreneur is always a speculator" (Mises 1998, 288). Accordingly, it is supposed that entrepreneurship is inherent in *all* human action to some extent. Rothbard (2009, 64) explains:

This process of *forecasting* the future conditions that will occur during the course of his action is one that must be engaged in by every actor. This necessity of guessing the course of the relevant conditions and their possible change during the forthcoming action is called the *act of entrepreneurship*. Thus, to some extent at least, every man is an entrepreneur. Every actor makes his estimate of the uncertainty situation with regard to his forthcoming action.

I find this conclusion to be untenable for a few reasons. The first, and a common challenge made by those outside of the Austrian school, is that if *all* action is entrepreneurship, then *none* is. In other words, if we cannot separate "entrepreneurship" from "action" broadly, then the concept of entrepreneurship is redundant and useless. It provides no additional insight beyond our general understanding of human action, which also is always uncertain. Second, the prevailing interpretation implies that because *all* action is entrepreneurial, *none* is managerial. Clearly, Mises did not intend such a conclusion, as will be shown. Finally, the foregoing analysis of the entrepreneurial function—concluding that its essence is in the intentional pursuit of new economic value—implies that uncertainty bearing is a necessary consequence of entrepreneurship and not its essence. Read in that way, Mises's theory comes into better focus, as will also be shown.

Is All Action Entrepreneurial?

Scholars who have adopted a definition of the entrepreneurial function as speculator have, it seems, misread Mises. Here we find the primary source of the confusion:

Like every acting man, the entrepreneur is always a speculator. He deals with the uncertain conditions of the future. His success or failure depends on the correctness of his anticipation of uncertain events. If he fails in his understanding of things to come, he is doomed. The only source from which an entrepreneur's profits stem is his ability to anticipate better than

other people the future demand of the consumers. If everybody is correct in anticipating the future state of the market of a certain commodity its price and the prices of the complementary factors of production concerned would already today be adjusted to this future state. Neither profit nor loss can emerge for those embarking upon this line of business.

The specific entrepreneurial function consists in determining the employment of the factors of production. The entrepreneur is the man who dedicates them to special purposes. In doing so he is driven solely by the selfish interest in making profits and in acquiring wealth. But he cannot evade the law of the market. He can succeed only by best serving the consumers. His profit depends on the approval of his conduct by the consumers. (Mises 1998, 288)

Mises points out here that all entrepreneurship, *like all action*, is speculative. But to read this, as Rothbard does, to imply that speculation or forecasting *is* entrepreneurship is not here justified. Instead, all entrepreneurship is a *type* of human action and, like all human action, is speculative. In fact, it is one of the most speculative types of human action.

However, while all entrepreneurship is action, the reverse is not true—not all action is entrepreneurship. In Rothbard's interpretation, he does not go so far as to claim all action to be entrepreneurship, as such an interpretation intuitively seems false. Instead, he claims all action to be entrepreneurial *to some extent*, the extent being that to which the action bears uncertainty. Yet, of course, this leads to a recognition that all action is entrepreneurship, although some actions are more "entrepreneurial" than others.

One problem with this is that a lot of uncertainty bearing is not entrepreneurial whatsoever, at least not intuitively. Is a student an entrepreneur when guessing on an ungraded pop quiz? Is an art observer an entrepreneur when wondering who painted the lovely seascape? Is a historian an entrepreneur when uncertain as to the true underlying causes of World War I? These types of uncertainty bearing have no obvious economic effects, as they have no effects on the structure of production. At best, one could argue that such uncertainty bearing affects consumption outcomes, but such an argument is tenuous. One can be uncertain about a great many things that do not matter at all to that person.

Perhaps we could augment the speculative entrepreneurial function to include *risk bearing*, requiring some investment, which seems more

plausible. But the essence of this risk is in the *investment* and not only in the *uncertainty*. Action without investment is not entrepreneurial.

The Managerial Function

It is clear in Mises's writing that the "managerial function" (Mises 1998, 302) is a *real* function within the catallactic economy. Mises (1998, 301) describes the manager as "a junior partner of the entrepreneur" who attends "to the entrepreneurial functions which are assigned to him within a limited and precisely determined sphere of action." In short, the entrepreneur delegates the responsibilities of carrying out his plans to the manager. It is not the function of the manager to devise the plans, which are provided by the entrepreneur. Instead, the managerial function "is to adjust—within the limited scope left to his discretion—the operation of his section to the state of the market" (Mises 1998, 302). The manager is, thus, given discretion to operate within a "limited scope" or "section" of market processes. Mises then quickly acknowledges that, often, the entrepreneurial, managerial, technician, and other market functions are performed by the same person.

Again, defining all action as entrepreneurial leaves no room for this managerial function, which must thus be circumscribed to some artificial world, such as the ERE, where action may be certain. Clearly, this was not Mises's intention (see Mises 1998, 300–07), which again forces us to reconsider how he understood entrepreneurship.

The Essence of Entrepreneurship

It is my argument, then, that Lachmann, and not Rothbard, reads Mises most correctly here. The *essence* of entrepreneurship is, for Mises (1998, 288), in "determining the employment of the factors of production." Assuming that, in particular, Mises is referring to the entrepreneur's *changing* the allocation of these factors of production, which seems apparent from his elaboration that entrepreneurs dedicate these resources to "special purposes," speculation and the bearing of uncertainty naturally follow from this function. Thus, "[l]ike every acting man, the entrepreneur is always a speculator" (ibid., 288). But these consequences are not

the essential function itself, and not all speculators are necessarily entrepreneurs. Any speculation without resource (re)commitment is simply idle wondering, and not entrepreneurship. In contrast, “the function of the entrepreneur cannot be separated from the direction of the employment of factors of production for the accomplishment of definite tasks” (ibid., 302). Thus Mises, like Lachmann, sees the entrepreneurial function as the formulation of “entrepreneurial plans” (ibid., 300), the productive task to which invested resources are to be put, which plans are then carried out by managers (and “submanagers”), who implement the plans via the employment of technicians.

If we accept this reconception of Mises’s entrepreneurial function, then to what end are such essential plans directed? Mises makes it clear that entrepreneurs are “driven solely by the selfish interest in making profits and in acquiring wealth” (ibid., 288), which profits he again defines as an “increase in satisfaction (decrease in uneasiness) brought about” (ibid., 286). Entrepreneurship is always *intentional*, directed toward an increase in subjective value, i.e., subjective well-being. Thus, the entrepreneurial function—the formation of new entrepreneurial plans—can be restated in the very same language we arrived at previously: entrepreneurship is the intentional pursuit of new economic value through resource investment.

THE AUTARKIC ENTREPRENEUR

Adopting this general definition of entrepreneurship here, let us circle back to the notion of an *autarkic entrepreneur*. Can Noland or Crusoe or a do-it-yourselfer intentionally pursue new economic value through resource investment? Clearly, the answer is *yes*. Thus, entrepreneurship is not a catallactic function only, but is a key function and aspect of all human existence, conjointly or alone. Autarkic economizers can perform the entrepreneurial function also.

But what does this autarkic entrepreneur look like? Let us take the standard fictitious Robinson Crusoe example as our starting point here before moving on to more practical and real applications of autarkic entrepreneurship.

Isolated Autarky

Let us begin our analysis with the case of *isolated autarky* or the “isolated household economy,” where there is but a single economic producer (whether it is a lone and isolated actor or, else, all other actors in the “household” are wholly unproductive and dependent). In this case, the entire economy is “at the disposal of a single economizing individual” (Menger 2007, 75). Consider Robinson Crusoe (pre-Friday) in the state of nature. What are the intentions that motivate his actions? Following the standard Misesian framework, Crusoe’s aim is universally directed at a higher state of well-being. This includes, firstly, survival—the bare necessities. Thereafter, increasing productivity and savings would allow him to incrementally allocate more of his time and action to the pursuit of *more* and *better* satisfactions of his various needs.

Thus, immediately, the autarkic entrepreneurial function rears its head. To begin, Crusoe must go from no production (other than, perhaps, getting his bearings) upon finding himself on the island—a state of affairs that would not do as a stationary economy—and increase production to a level above the survivability threshold. He must generate sufficient *new* economic value in order to meet the consumption demands of a properly functioning body—he must grow the economy to a level of basic sustainability. Given our definitions of economy and the entrepreneurial function within it, this means that survival, for Crusoe, *requires entrepreneurship*.

The autarkic entrepreneurial function, which Crusoe adopts, generates entrepreneurial plans to discover and allocate resources in a more productive way. One such plan is generated, the entrepreneurial Crusoe gives way to the managerial Crusoe, who then implements the plans purveyed by entrepreneurial Crusoe. At times, the entrepreneurial plan may go awry, and entrepreneurial Crusoe reemerges to reassess and revise the plan (see Packard, Clark, and Klein 2017). Additional revisions and new entrepreneurial plans may also arise as new information becomes available. In short, autarkic Crusoe bounces between distinct producer functions so that, in the end, consumer Crusoe can enjoy the spoils of those productive efforts.

It is the autarkic entrepreneurial function, however, that devises autarkic plans of action. Once those plans are devised, the role of

the autarkic entrepreneur is completed and passes to the managerial function. In fact, once Crusoe's economy has reached a level of sustainability, the entrepreneurial function is no longer strictly required, and Crusoe could plausibly maintain the same production plan for survival, merely replicating time and again the established level of subjective well-being until there is some change in supply or demand. However, it is unlikely that Crusoe would voluntarily stand pat at a minimum level of sustenance. As productivity increases (through, e.g., learning curves), Crusoe may find enough time and savings to invest in capital goods. This investment is another case of autarkic entrepreneurship to further increase future well-being by employing saved resources in developing useful tools that might increase overall productivity. Or, perhaps, the attained level of productivity may be such that he can turn to other productive activities aimed at better satisfying other, nonessential needs (e.g., building more comfortable furnishings) or otherwise improving the satisfaction of the essential needs (e.g., pursuing a wider variety of foods). All such activities are *entrepreneurial*, aimed at creating *new* economic plans for value attainment. While Crusoe may very well go through periods of managerial persistence, we would expect him to be always on the lookout—Kirzner's 'alertness'—for new ways to better address those still imperfectly satisfied needs.

Through repeated entrepreneurial endeavors, Crusoe's one-man economy can plausibly attain a level of productivity that may be quite comfortable to him. In other words, Crusoe could, through entrepreneurial efforts, plausibly grow his economy of one to a quite high level of subjective well-being. However, he alone could never approach the levels of productivity, economic growth, and total satisfaction that could be achieved through catallactic economizing.

Normal Autarky

Although the isolated autarky illustration is apt and useful in illustrating the entrepreneurial function within the autarkic economy, it holds little obvious practical relevance to the typical economic actor. However, autarkic economics, including the entrepreneurial function within it, is in fact *very* relevant and important to economic theory and to the real world, as has already been argued. Thus, let

us now expand our autarkic economy to the typical and everyday situation—the *normal* autarkic economy.

This normal autarkic economy is embedded within and interacts with the catallactic economy. However, “normal autarky” refers to those productive economic activities that are performed outside of the catallactic economy—those which individual actors (or households) perform *for themselves*. This normal autarkic economy includes, as previously indicated, home cooking, homemaking, pursuing hobbies, maintaining personal hygiene, rest and sleep, and other activities that are either not available in the catallactic economy or where the marginal benefits of the market options do not supersede the costs of DIY.

To motivate this theory, consider the following research by von Hippel, de Jong, and Flowers (2012, 1669):

Our study finds consumer innovation to be quite significant in both scale and scope. Via a survey of a representative sample of 1,173 consumers in the United Kingdom, we estimate that 6.1% of UK residents 18 years of age or older have created or modified consumer products they use during the prior three years. This represents nearly 29 million people. In aggregate, we find that UK consumer product users spend 97,800 person-years and an estimated £3.2 billion annually on their development efforts—more than 1.4 times the consumer product R&D expenditures of all firms in the United Kingdom combined. We also find that consumer product innovation spans a wide range of fields, from toys, to tools, to sporting equipment, to personal solutions for medical problems. We further discover that consumer-developed innovations appear to be complements rather than substitutes for producer innovations, and that consumer innovators very seldom protect their innovations via intellectual property; in fact, 17% diffuse to others.

This suggests that there is a vast array of autarkic economies booming under our noses, with frequent entrepreneurial endeavors by which new solutions are innovated and existing (catallactic) solutions are altered and augmented.

Most of these innovations are never taken to market, remaining the purview of autarkic economy and not of catallactic economy, even though many of them appear to solve a real market need. Some have ascribed this tendency for good entrepreneurial solutions to remain confined to the autarkic economy to a market failure (de Jong et al.

2015; de Jong, Gillert, and Stock 2018). However, in fact, catallactic entrepreneurship is quite different from autarkic entrepreneurship—it requires very different skillsets, vastly more time and effort, and the bearing of significantly more uncertainty and risk. That is, there are—or may be—very good reasons to confine entrepreneurial efforts only to autarky, even in the presence of a large and booming catallactic economy and significant market potential.

Thus, autarkic entrepreneurship is very different in scope and function from catallactic entrepreneurship. The former may lead, in some cases, to the latter, as in the case of so-called user entrepreneurship (Shah and Tripas 2007). However, this is, as we have seen, not always the case, as vast amounts of autarkic entrepreneurship stay confined to their respective autarkic economies. Furthermore, there appear to be many cases of catallactic entrepreneurship that do not clearly start within an autarkic economy. In such cases, the entrepreneurial plans characteristic of the entrepreneurial function are, in the first place, devised for the satisfaction of *others'* needs, whereby the catallactic entrepreneur might gain profit for themselves through catallactic exchange.

The Boundary between Autarkic and Catallactic Entrepreneurship

The scope of this paper is not a full elaboration of a theory of autarkic entrepreneurship, which would require a much larger treatment. My aim has been only to make a compelling case that there *is* a real autarkic economy and that the entrepreneurial function operates within it. Furthermore, it is to assert that the autarkic entrepreneur is different from and performs a different function than the catallactic entrepreneur. This is, thus, a call for new theorizing on a prominent type and area of economic activity that has been neglected.

However, to perhaps get this ball rolling, let me lay down some initial legwork with regard to the normal operations of the autarkic economy *in relation to* the catallactic economy, specifically in regard to the entrepreneurial function of each. In other words, why are some entrepreneurial activities pursued in the autarkic economy and others in the catallactic economy? What are the boundary conditions that separate them? One answer is likely to be the

amount of needed capital, including human capital, required for the innovation and production of certain solutions. Thus, Schultz's (1975, 1979, 1980a, 1980b) human capital approach to entrepreneurship may be a good starting place for such explorations.

Another key factor must, of course, be the transaction costs of catallactic versus autarkic exchange. Transaction cost economics, which compares a firm's internal versus external transaction costs to determine its proper scope (Grossman and Hart 1986; Holmstrom and Roberts 1998), might be adapted to compare autarkic and catallactic transaction costs and, thereby, help determine the "scope" of the autarkic economy vis-à-vis the catallactic economy. For example, while catallactic transaction costs involve costs of triangulation, transfer, and trust (Munger 2018), autarkic exchange largely skirts the bulk of these costs, its transaction costs involving primarily uncertainties. Similarly, the cost-benefit calculations themselves may also vary between catallactic and autarkic economies (see Piano and Rouanet 2020).

A third factor is the fact that catallactic markets can benefit from a division of labor, whereas autarkic exchange cannot.

These factors tie into another important area of future research, which would explore how these distinct economies, and their entrepreneurial functions, interact. For example, when are autarkic innovations taken to market or not (de Jong, Gillert, and Stock 2018; de Jong et al. 2015; von Hippel, de Jong, and Flowers 2012)? And how and when are catallactic solutions "internalized" by the autarkic economy—i.e., when do market solutions become DIY solutions?

Relatedly, how and when do these distinct economies support each other? For example, DIY services (e.g., home improvement retailers, medical self-diagnosis websites such as WebMD.com, and legal document creation aids such as LegalZoom.com) are quite large and profitable catallactic industries that serve as suppliers and support services for the autarkic economy. This is exemplified by The Home Depot's marketing slogan: "You can do it. We can help." Or, on the other hand, some retailers leverage consumer human capital (or just "consumer capital"), facilitating greater value for their customers by leveraging autarkic production in so-called (somewhat imprecisely) value co-creation (Ramírez 1999; Ratchford 2001; Vargo and Lusch 2004; Vargo, Maglio, and Akaka

2008). For example, IKEA gained an advantage over its competitors by offering high-quality furniture at a steeply discounted price by leveraging its customers' willingness to assemble the furniture themselves. In other words, IKEA outsourced the last steps of the value chain to the autarkic economy.

In short, there are clear and obvious benefits to autarkic economic activities—including entrepreneurship—that may not obviously translate to the catallactic economy. One reason is the personal nature of the need and its solution, which, perhaps, makes the solution economically infeasible for catallactic production, having too narrow a market. Said differently, some activities may be pursued through autarkic entrepreneurship out of necessity due to a persistent absence of those activities in the catallactic economy. Other reasons include costs, convenience, and the mere enjoyment of producing (e.g., hobby gardening, crafting, or woodworking). These reasons and boundaries are the subject of much needed future research.

CONCLUSION

The aim of this article has been to expand and legitimize the Austrian theory of autarkic (autistic) economy and, especially, the entrepreneurial function within it. Entrepreneurship is not merely a catallactic function but plays a far more prevalent role in economic life than has hitherto been proffered. In fact, we act as entrepreneurs quite regularly—even daily—as we look at our routines and decide to try new things instead: new recipes, new activities, new friendships, new furniture arrangements, etc. In other words, we act as entrepreneurs whenever we take our existing stock of capital and enact plans to *shift* them into new arrangements and combinations to produce, hopefully, better value outcomes (cf. Schultz 1975, 1980a).

Because life is an endless pursuit of ever higher value states (Packard 2019), because we continuously seek ever better satisfactions of our needs (Witt 2001), entrepreneurship plays a key and frequent role in our trying to *grow* our autarkic economy, to increase total well-being out of the resources possessed. This role is different from the oft-supposed function of uncertainty bearing that characterizes all human action. It is true that much of our day is employed in the *management* function, carrying out previously

laid entrepreneurial plans and rotely replicating value states previously established by our entrepreneurial activities. We wake up at our routine time, ready ourselves routinely for the day, eat at routine times, and go through the day doing many of the same things by rote. But it is the entrepreneurial function—the autarkic entrepreneur—that *breaks* this routine, that tries something new.

The autarkic entrepreneur performs this function for the same reasons as the catallactic entrepreneur—in pursuit of new and superior economic value. Certainly, the catallactic entrepreneur is far more consequential, altering the value state of vast swaths of benefited economic actors through large-scale production and market interaction. For this reason, the catallactic entrepreneur has been rightly placed at the forefront of economic theorizing (at least in the Austrian tradition). However, this attention has caused the theoretical neglect of the autarkic entrepreneur, who is in fact a key economic actor also.

If I may be so bold, the neglect of the autarkic entrepreneur has been one of the most significant oversights of all of economics, including the Austrian school (which has, at least, somewhat recognized it). By bringing the autarkic, DIY economy into the theoretical frame, we observe a great number of insights into the boundaries of catallaxy and autarky. Without these, economics, including catallactics, is simply incomplete.

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WHY (A THEORY OF) OPPORTUNITY MATTERS: REFINING THE AUSTRIAN VIEW OF ENTREPRENEURIAL DISCOVERY

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ABSTRACT: The concept of entrepreneurial opportunity has undergone a period of useful critique and refinement since Venkataraman (1997) and Shane and Venkataraman (2000) employed the term as one of the defining features of entrepreneurship studies. This paper presents a novel Austrian reinterpretation of this concept as an intersubjective phenomenon that emerges from the dual entrepreneurial process of discovery and judgment. Just as markets can be described as price discovery procedures for existing goods, services, and resources, entrepreneurship can be usefully described as a price discovery procedure for future goods, services, and resources. This view retains the essential elements of Kirzner's (1973) approach while also refining the opportunity discovery concept within an evolutionary realist framework for understanding entrepreneurial motivation and action.

INTRODUCTION

Since Israel M. Kirzner's (1973, 1979) groundbreaking work on entrepreneurial discovery over forty years ago, the concept of opportunity has been central to the academic literature on venture creation and innovation. Sankaran Venkataraman (1997) and Scott Shane and Venkataraman (2000) made opportunity a primary operational construct in their definition of the field of entrepreneurship

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studies. Though some views, such as those of Frank H. Knight (1921), Joseph A. Schumpeter (1934), and Buchanan and Vanberg (1991) deemphasize the concept in favor of other factors such as uncertainty, innovation, and creativity, the opportunity discovery view has remained a primary construct, often integrated with these other concepts as separate but interrelated aspects of venture creation. Indeed, there is general agreement in the field of entrepreneurship studies that scholars need to “explain the role of opportunities in the entrepreneurial process” and to “clarify the central role that opportunities play in a framework for entrepreneurship” (Eckhardt and Shane 2003, 333).

Recent scholarship, however, has displayed a great deal of ambiguity toward the use of the concept of opportunity, and some have questioned the coherence and usefulness of the term altogether. Distinctions between “Kirznerian” and “Schumpeterian” opportunity are made to distinguish equilibrating from dis-equilibrating entrepreneurial innovations (Shane 2003); “discovery” and “creation” have been proposed as alternate views of how opportunities come into existence (Alvarez and Barney 2007); and both epistemological and methodological objections to the concept itself have been suggested (Klein 2008; Foss and Klein 2012; McCaffrey 2014). The fact that many of these objections come from scholars working in the Austrian scholarly tradition of Kirzner suggests that they represent serious challenges to the viability of the opportunity discovery construct as a research tool in understanding the nature, causes, and consequences of entrepreneurial activity.

This paper seeks to better define the role of opportunity in entrepreneurial discovery. It focuses on entrepreneurship as a collaborative process of *intersubjective* knowledge generation and integration, and reconceptualizes the idea of entrepreneurial opportunity as neither a purely “preexisting” entity nor a creation of the entrepreneur, but the emergent result of the collaborative process of discovery and judgment. Instead of things in the mind of an entrepreneur, to be either recognized or created as independent constructs, opportunities in this view are defined as decision alternatives that emerge from a set of collaborative procedures for uncovering and integrating localized knowledge, widely dispersed among potential stakeholders, into coherent mean-ends frameworks from which interdependent paths of value creation may

be identified and potentially exploited for mutual benefit among stakeholders.¹ In other words, opportunities are endogenous to the process of intersubjective experimentation, selection, and retention that characterizes the market process in general.

This paper places opportunity back in the limelight as a central concept for understanding the causes and effects of entrepreneurship. We argue that this is important for at least three reasons. First, there is the issue of how *context* affects both motivation and decision analysis behind entrepreneurial actions. Koellinger (2008) argues that examining entrepreneurial behavior involves at least two fundamental questions: (1) What motivates entrepreneurs to choose among alternatives, and (2) where do these decision alternatives come from? Profit motives under uncertainty (i.e., judgment) can, at best, offer only a general answer to the first of these questions, because in complex settings involving nonalgorithmic uncertainty, the very possibilities for *ex ante* profit cannot be “prestated” (Koppl, Kauffman, Felin, and Longo 2015); characteristics of latent demand and supply are not operational apart from the process by which they are discovered or enacted, and computability limits the effectiveness of policies that presume otherwise (Koppl 2008). In other words, before an entrepreneur can exercise judgment, he or she must hold beliefs *in the present* about the prospects of profiting from judgment *in the future*, and both the generation and validation of those prospects in the present is a matter, we argue, of entrepreneurial discovery. Ludwig von Mises (1949 [1996]), who served as one of the primary inspirations for Kirzner’s view, suggested that this role of the entrepreneur as both organizer and evaluator is the “driving force” behind the market process; entrepreneurs both “speculate” on uncertain futures and “promote” specific ways of exploiting prospects for advantage from those speculations (250).

Second, there is the issue of differentials among entrepreneurial strategies (see Hitt, Ireland, and Hoskisson 2013). Entrepreneurial strategies are methods by which decision alternatives are evaluated, selected, and pursued. There is a crucial distinction between these

¹ This conceptualization of entrepreneurial opportunity echoes that of Shepherd (2015, 491), who calls for “thinking of a potential opportunity in terms of a process of social interaction (between a community and the entrepreneur) rather than solely as an outcome of thinking (in the mind of the entrepreneur).”

strategies and the conditions that motivate or enable their use, because the strategies' attributes are *contingent* on the uncertain unfolding of the market discovery process over time. Not all strategies are equally effective in all contexts; external conditions have much to say about what strategies are effective and under what circumstances. Beliefs about the effectiveness of strategies can be correct or incorrect, and the context of entrepreneurial action, or the opportunity conditions under which it operates, is what ultimately affirms (or not) the correctness of such beliefs. In other words, the existence of opportunity validates not only entrepreneurial beliefs about consumer preferences (ends), but also their beliefs about the best ways to meet those preferences (means).

Finally, there is the issue of differential welfare impacts of entrepreneurial action. Research since Baumol (1990) has confirmed that the entrepreneurial process will produce variability in social welfare outcomes based on the extent to which policies and institutions incentivize value-creating (productive) versus value-dissipating (unproductive) forms of entrepreneurship. More generally, the results of the entrepreneurial process are not confined to the results experienced by individual entrepreneurs; there is a social dimension to entrepreneurial outcomes determined by the character of the institutional capital structure within which they are generated. This social dimension is defined, in part, by the "nexus" (Shane 2003) between the motivations, beliefs, and skills of individual entrepreneurs and the contexts that incentivize and constrain the expression of those motivations, beliefs, and skills. In other words, negative social outcomes do not always come from incorrect beliefs or faulty strategies on the part of entrepreneurs, but often from the limited array of decision alternatives produced by poor institutional contexts.

Simply put, without a meaningful opportunity discovery construct, it is difficult to properly understand the impacts of context, contingency, and institutional capital on entrepreneurial outcomes. This paper represents an attempt to further develop such a meaningful concept, drawing on the work of Kirzner but also on the rich literature that has developed in response to its ambiguous construction and role. The remainder of the paper is organized as follows. First, the role of opportunity in the study of entrepreneurship is surveyed, beginning with Kirzner's seminal

view and proceeding to recent developments. Both Kirzner's approach and the more recent extensions and modifications of the opportunity construct are critiqued, including those that suggest an outright abandonment of the term. Next, a theory of opportunity development is provided that addresses the major shortcomings of existing versions while retaining their important contextual role, noting similarities to other approaches. Finally, some implications are outlined of this reconceptualization of entrepreneurship as an emergent, collaborative procedure of opportunity discovery *and* judgment for both strategy research and policy.

THE ROLE OF OPPORTUNITY IN ENTREPRENEURSHIP STUDIES

Although the systematic study of the entrepreneur goes at least as far back as Richard Cantillon (1755), Jean-Baptiste Say ([1821] 1880), and John Stuart Mill ([1848] 1871), it was the work of Knight (1921), Schumpeter (1934), and, especially, Kirzner (1973) that did the most to incorporate the theory of the entrepreneur into economic and social analysis. Likewise, although the term *opportunity* has a long history in both academic and popular works on entrepreneurship, the primary theoretical role it plays in entrepreneurship studies derives from the work of the Austrian school, again most directly from Kirzner (1973). One of the best-known expositions of this view is presented in Kirzner (1979, 62), where he outlines the essential aspects of what he calls "entrepreneurial discovery," which he describes as the "driving force behind [the] systematic process" of market equilibration.

Kirzner's entrepreneurial discovery view developed primarily out of the insights of Austrian scholars Mises and F. A. Hayek, who were in turn heavily influenced by the ideas of earlier scholars in the Austrian tradition. From Mises ([1949] 1996) comes the concept of entrepreneurship as a process of action under uncertainty, while Hayek (1945, 1948) contributes the concept of knowledge acquisition as a fundamental aspect of market interactions (Kirzner 1997, 67). As Kirzner explains, Hayek conceived of markets as processes whereby "market participants acquire better mutual information concerning the plans being made by fellow market participants," while Mises contributed the recognition that "this process is driven

by the daring, imaginative, speculative actions of entrepreneurs who see opportunities for pure profit in the conditions of disequilibrium" (Kirzner 1997, 68).

There are two important aspects of the preceding views that come to bear on an examination of the opportunity construct. First, from Hayek, opportunities arise as the result of acquiring "better" information about what market participants intend than was previously possessed, a process that Hayek later described as "discovery" (see, e.g., Hayek 1978). Second, from Mises, it is the entrepreneur that recognizes opportunities and engages in actions designed to exploit them. Kirzner (1997) refers to these aspects as the discovery role and the entrepreneurial role, respectively.² Thus, discovery in the Austrian view does not refer to the recognition of opportunities *per se*, but to the general role of markets as a knowledge acquisition process, from which entrepreneurs learn what opportunities might exist and how to act in order to profit from them. To quote from Hayek (1948, 97), markets and competition exist "to teach us who will serve us well: which grocer or travel agency, which department store or hotel, which doctor or solicitor, we can expect to provide the most satisfactory solution for whatever particular personal problem we may have to face."³

The Kirznerian entrepreneur is one who looks for "opportunities for pure entrepreneurial profit created by temporary absence of full adjustment between input and output markets" (1973, 69), whether that absence of adjustment is in the present or the future. Full adjustment of input and output markets requires the absence of surpluses and shortages, but also the lack of profit above the opportunity cost of all resources employed in the process. So, for a forward-looking entrepreneur, the ability to correctly foresee a profit situation requires that he, in some way, be able to discover something that is not reflected in the current pricing of resources and/or consumer goods and services. The entrepreneurial roles of recognition and risk taking require the discovery role of knowledge acquisition. Hayek (1945, 1948) adds the proposition that this

² Kirzner (1997) also adds a third aspect, the role of rivalry, as a necessary component of equilibrating market processes. Since this paper does not focus on the equilibrating role of the entrepreneur, we do not emphasize this admittedly important concept.

³ The author thanks an anonymous reviewer for highlighting this passage.

knowledge is often of the localized, tacit, and intersubjective type that cannot be uncovered without actions (experiments) that submit various ideas to market tests. The picture of entrepreneurship that emerges is very similar to the creative trial-and-error processes that characterize “constructivist” conceptions of venture development, like those of Buchanan and Vanberg (1991) and Sarasvathy (2001). It also bears resemblance to the role of the financial market speculator in Mises ([1949] 1996).⁴

Unfortunately, Kirzner (1973, 1997) illustrates this process by employing a framework that assumes an actual, existing supply and demand for consumer goods and services, thus reducing the entrepreneurial function to one of discovering current market inefficiencies, essentially as an arbitrageur. An important aspect of this characterization, as pointed out by Peter G. Klein (2008), is the lack of investment and, thus, risk taking on the part of the entrepreneur. By contrast, Knight (1921) suggests that only when characteristics of future supply and demand are uncertain will an entrepreneurial investment in current resources be necessary, so that the entrepreneur acts as innovator, speculator, and resource allocator in markets for future goods and services, not merely an arbitrageur of divergent market expectations.

Though Klein acknowledges Kirzner’s purpose in using the arbitrageur as an illustration, stressing the equilibrating aspect of entrepreneurship in the market process, and that Kirzner himself acknowledged the speculative role of entrepreneurship in other works (see, e.g., Kirzner, 1985, 56), the focus on arbitrage is nonetheless problematic.⁵ Chief among the issues is the idea that entrepreneurs are defined by the characteristic of “alertness” to opportunities, that is, that their primary function is to look for situations where yet unrecognized market inefficiencies already exist. Not only does such a function ignore the important role of uncertainty bearing that creating new goods and services entails, but it is also difficult to operationalize apart from the very actions (investments) that create those goods and services. Essentially, we can only see the *ex post*

⁴ This similarity is examined further in the final section of the paper.

⁵ An anonymous reviewer points out, correctly, Kirzner’s later employment of a multiperiod view emphasizing the psychological component of investment under uncertainty.

results of alertness, and that only when risky investments in assets turn out to have been correct.⁶ By contrast, it is problematic to ascribe unsuccessful investments to “lack of alertness” to an opportunity, as there is no direct evidence that an opportunity existed in the first place; nor can one merely substitute the idea of alertness to a “nonopportunity” to explain unsuccessful investments, because the very idea of alertness implies that something exists to be aware of.

Nonetheless, there is a considerable literature in entrepreneurship that derives its emphasis from this framework. Drawing from Kirzner, Shane and Venkataraman (2000, 200) identify opportunity as a key construct in the definition of what entrepreneurs do and what those who examine entrepreneurship study. They define entrepreneurial opportunities as “situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their costs of production.” Importantly, this definition is noncommittal on the questions of both the nature and sources of entrepreneurial opportunities. The opportunity discovery approach has been employed to fruitfully explore knowledge transfer (Shane 2000), the nature of entrepreneurial searching (Hsieh, Nickerson, and Zenger 2007), venture development in transitional markets (Mainela and Puhakka 2009), the role of transactions costs and property rights (Foss and Foss 2008), the use of intellectual capital (Puhakka 2010), and entrepreneurial networks (Shu, Ren, and Zheng 2018), among numerous other applications.

Management scholars have spent considerable effort trying to better formalize the role of opportunity in the framework of entrepreneurship studies. For example, Sarasvathy, Dew, Velamuri, and Venkataraman (2003) distinguish between three views of entrepreneurial opportunity they identify as allocative, discovery, and creative views. An allocative view of opportunity implies a current misallocation of existing resources; thus, the emphasis is on recognition of discrepancies in current supply and demand, much as illustrated in Kirzner (1997). A discovery view implies that there is one important aspect of a potential market that is undeveloped—i.e., a (latent) demand without a supply or a (latent) supply without a demand. The emphasis in this view of entrepreneurial

⁶ McCaffrey (2014) also questions the suitability of uncertain profit opportunities as a motivating factor for the characteristic of alertness.

opportunity is on “discovering” where latent supply or demand exist, such as a service without a provider (latent demand) or a resource without a use (latent supply), and completing the market by implementing the missing piece. Finally, a creation view implies that there is neither a supply nor a demand for the good or service in question; in this case, the entrepreneur creates the opportunity by providing both a new good or service and a new set of means by which the good or service is created.

Sharon A. Alvarez, Jay B. Barney, and Susan L. Young (2010) employ a similar approach in their article on opportunity formation. They also use a threefold categorization scheme, focusing on three philosophical approaches to opportunity: realist, social constructionist, and evolutionary realist. Despite the different nomenclature, their views essentially correspond to those of Sarasvathy et al. (2003), with their realist view corresponding to the recognition view, the constructionist to the creation view, and the evolutionary realist to the discovery view of the latter. Confusingly, they refer to methods of “discovery” as applicable to the realist framework, although their description of realism corresponds closely to that of the allocative view in Sarasvathy, et al., (2003); likewise, they ascribe methods of “creation” to the evolutionary realist framework, although their description of this framework corresponds closely to that of discovery in the latter.

A rich literature has developed around constructivist views linked to the “creation” approach since Alvarez and Barney (2007) proposed the basic dichotomy between creation and discovery, including Alvarez and Barney (2010, 2013), Wood and McKinley (2010), Alvarez, Barney, and Anderson (2013), and Alvarez, Young, and Woolley (2015).⁷ The emphasis in each of these extensions is on the idea of “enactment,” rather than discovery, of opportunities; as explained by Wood and McKinley (2018), the “causal influence of the entrepreneur on the opportunity is more strongly highlighted” than in the discovery view (8). The opportunity creation literature has expanded considerably to include the examination of niche

⁷ Though Alvarez and Barney (2007) are generally credited with the discovery-creation dichotomy, earlier research had identified important aspects of the distinction. See, e.g., Buchanan and Vanberg (1991), Chandler, DeTienne, and Lyon (2003), and Baker and Nelson (2005).

construction (Luksha 2008), information technology startups (Ojala 2015), entrepreneurial affect (Goss and Smith 2018), the conditions of uncertainty underlying entrepreneurial actions (Mitchell et al. 2012), and social entrepreneurship (Gonzalez, Husted, and Aigner, 2017). Several studies have also attempted to bridge and/or reconcile the opportunity discovery and opportunity creation approaches (see, e.g., Zahra 2008; Edelman and Yli-Renko 2010; Martin and Wilson, 2016; and Chetty, Karami, and Martin, 2018).

Although maintaining the importance of opportunity, however, the essence of the creation view still locates it solely in the mind of the entrepreneur. In doing so, this view fails to address the important problems of where entrepreneurial beliefs come from and why entrepreneurs perceive the decision alternatives that they do, particularly those alternatives that ultimately prove successful. The idea that successful entrepreneurship requires some knowledge of future conditions outside the mind of the entrepreneur seems to also require that there be entrepreneurial methods of “discovering” what those conditions are. Thus, at the heart of the dichotomy between creation and discovery are the questions of what ultimately makes entrepreneurial profit seeking successful, and whether it lies entirely within the entrepreneur’s imagination or at least in part in the recognition of external realities that give it credence.

Other extensions of the opportunity literature have attempted to better integrate it with more traditional views in psychology and evolutionary economics, such as the cognition-based approach of “opportunity recognition” (see, e.g., Baron 2004, 2006; Baron and Ensley 2006; and Ozgen and Baron 2007) and the idea of opportunities as “propensities” (Ramoglou and Tsang, 2016, 2017). Baron (2004, A1) proposes opportunity recognition as a form of pattern recognition, the “process through which individuals perceive emergent patterns among seemingly unrelated stimuli or events.” As such, opportunity recognition is a form of discovery informed by theories of human cognition and perception. Similarly, Ramoglou and Tsang (2016, 2017) propose that opportunities are real propensities for a future, emergent state of the world and that entrepreneurs sometimes recognize these propensities and act to bring them to fruition, much as one who recognizes the future plant within a seed must act to bring the plant into being. This evolutionary-realist view of opportunities as propensities is further examined below.

One way to examine the validity and completeness of alternate views of entrepreneurship is to ask how entrepreneurial behavior would be different under the different approaches. For example, consider the distinctions between discovery and creation as illustrated by Sarasvathy et al. (2003) and Alvarez, Barney, and Young (2010). Under the realist approach of Alvarez, Barney, and Young, analogous to Sarasvathy, Dew, Velamuri, and Venkataraman's allocative view, the entrepreneur acts as the Kirznerian arbitrageur; entrepreneurs seek pure profit by addressing an existing market disequilibrium. Although such a view is plausible in many cases, it does not address the important Knightian roles of risk taking and investment under uncertainty, which characterize ventures to provide *future* goods and services. By contrast, under Alvarez, Barney, and Young's constructionist approach, analogous to Sarasvathy et al.'s creation view, individuals develop both the opportunity and the market for it through their actions. They "do not recognize opportunities first and then act; rather, they act, wait for a response—*usually from the market*—and then they readjust and act again" (Sarasvathy et al. 2003, 30, emphasis mine). The implication is that it is entirely the *actions* of entrepreneurs that produce an opportunity—no latent market characteristics (demand or opportunity cost) exist independently that can be employed as motivation for actions or justification for beliefs.

However, the idea that entrepreneurs act without either *motivation from* or *beliefs about* latent external characteristics does not hold up to logical scrutiny, because it dodges the question of why entrepreneurs act at all. Although it is true that a yet undiscovered objective opportunity cannot serve as its own motivation for discovery, neither can purely subjective perceptions of an opportunity do so. The real question here is one of incentives—why do entrepreneurs believe that there are *ex ante* profit opportunities available? Do they not expect that, in some objective sense, their actions will result in an expected benefit above the opportunity cost of the action? What is the basis for a belief of this kind, and from where does the feedback that potentially affirms or alters the belief come? Hayek suggests that it comes in the form of information (i.e., revealed preferences) about the subjective perceptions of consumers and resource owners regarding the expected benefits and opportunity costs of future goods and services. In other words,

it reflects underlying realities of (latent) supply and demand as revealed by consumers and resource owners. If this were not true, it would be difficult to understand how one could explain *market feedback* as a test of validity of the entrepreneur's actions—and, by extension, the validity of the opportunity—because the concept of feedback requires some revelation about preferences not previously obtained by the learner, who is the entrepreneur.⁸

Taking a different approach, Klein (2008) and Nicolai J. Foss and Klein (2012) introduce the concept of judgment, derived from the work of Knight (1921). Judgment is defined as “decision making when the range of possible future outcomes, let alone the likelihood of individual outcomes, is generally unknown” (Klein 2008, 177). In other words, judgment refers to the choice among alternatives when both the full scope of alternatives and their probabilities are noncomputable. The entrepreneurial function, in this view, is to evaluate decision alternatives for bringing future goods and services into being and, if necessary, make risky investments in assets with the aim of profiting from those evaluations. This approach, although in a younger stage of development, has produced a significant literature of analysis and critique in both management and economics (see, e.g., Sarasvathy and Dew 2013; McCaffrey 2014, 2015; McMullen 2015; Foss and Klein 2015; Godley and Casson 2015; Hallberg 2015; and Foss, Klein, and Bjørnskov 2019).

However, while adequately addressing the evaluation and exploitation of potential opportunities for profit, judgment does not address the motivation for such judgments or the generation of decision alternatives any better than alertness (of objective circumstances) or creation (around purely subjective beliefs) do. The problem centers on an important flaw that is common among constructivist critiques of the opportunity concept: the idea that, since the actual existence of opportunity can never be revealed except where (successful) entrepreneurial action confirms its existence, opportunity itself must be entirely subjective, i.e., it exists only in the mind of the entrepreneur. Klein (2008) states this succinctly when he writes:

⁸ This emphasis on the role of the entrepreneur in “discovering” the preferences of the consumer is also explicit in Mises ([1949] 1996).

Expectations about the future are inherently subjective and, under conditions of uncertainty rather than risk, constitute judgments that are not themselves modelable....[o]pportunities for entrepreneurial gain [and] are, thus, inherently subjective—they *do not exist until profits are realized*. (180–81, emphasis mine)

Consistent with this line of reasoning, Foss and Klein (2012) propose the alternative judgment-based approach (JBA) focusing on beliefs, actions, and results. Employing this approach, they suggest that the notion of opportunity can *only* be understood as an ex post construct and that the ex ante correlate is entrepreneurial beliefs, which are translated into actions stemming

from 1) more or less articulated business plans *ultimately based on knowledge and beliefs about current conditions* and 2) estimates of future profits and losses that result from realizing the business plans. (Foss, Klein, and Bjørnskov 2019, 1204, emphasis mine)

The problem with this and similar characterizations of the subjective nature of opportunities is that they confuse the *existence* of latent preferences in the marketplace, preferences that can potentially be discovered by entrepreneurs who are motivated to find ways to profit from their own subjective beliefs about those preferences, and the *revelation* of those preferences, which occurs when entrepreneurs submit their ideas to the market tests that produce feedback about the correspondence of their beliefs to actual circumstances. Although it is true that entrepreneurial beliefs are purely subjective, the feedback entrepreneurs receive from market tests of their ideas is not; it is more correctly considered *intersubjective* (Sarasvathy and Venkataraman 2011; Venkataraman et al. 2012; Garud and Giullani 2013), because it contains information about the congruence (or lack thereof) between subjective beliefs on the part of the entrepreneur and subjective preferences expressed by market participants. Nicolai J. Foss, Peter G. Klein, and Christian Bjørnskov (2019) implicitly acknowledge the problem when they refer to plans that are “based on knowledge and beliefs about current conditions,” but fail to provide an explanation of how (or why) knowledge of current conditions shapes the motivations for and accuracy of those beliefs without methods of discovery.

Treating opportunities as purely subjective entities ignores the most important aspect of what Kirzner was trying to convey with his entrepreneurial arbitrageur, namely, the *systematic* search for and recognition of situations, whether temporally located in the present or in the future, where the characteristics of latent supply and demand (i.e., preferences) do not match objective price conditions. These situations are what we refer to as opportunities, and they are revealed when market tests show entrepreneurial beliefs about underlying preferences to be accurate and/or when they provide additional information necessary to adjust entrepreneurial actions to accurately reflect or influence those preferences.⁹ Discovery is the process that reveals this information to the entrepreneur.

Another approach, mentioned above, that has recently flourished is the idea of opportunities as propensities (Ramoglou and Tsang 2016, 2017). This approach conceives of opportunities as objective constructs of latent demand or supply but outside the mind or consciousness of the entrepreneur, who “actualizes” them through attempts to match their beliefs about the profitability of future goods and services to data provided via market tests. Opportunities, in this view, are not directly observable but “can be evidenced through their effects,” as Stratos Ramoglou and Eric W. K. Tsang (2016, 412) explain. Their view comes closer to the opportunity discovery view proposed here in allowing for a realist construct for opportunity; in contrast to the constructionist views, they reject opportunity as only existing in the mind of the entrepreneur. However, Ramoglou and Tsang’s actualization approach also rejects a purely empiricist view of opportunity, which they refer to as discovery. Nonetheless, one can take this as a starting point for a reexamination of exactly what discovery *and* opportunity contribute to the emerging conversation on entrepreneurship.

The two lines of research examined above not only propose to represent the “middle ground” between the discovery and creation approaches described earlier, but also place themselves as correctives or reconstructions of the Kirznerian approach based in Mises and Hayek. Thus, further refinements in the Austrian view of entrepreneurship must take account of their critiques and incorporate their

⁹ Lewin (2015) refers to these intersubjective characteristics of opportunity as *shared understandings*.

positive developments. We argue here that these critiques, although useful, have nonetheless erred in failing to distinguish between two aspects of subjective judgment that are important to understanding the motivations for and results of entrepreneurial action: the beliefs and aspirations of the entrepreneur and the preferences of the consumers whose wants they intend to fulfill with their business plans. For example, Foss, Klein, and Bjørnskov (2019, 1198) state: “We think that what is often meant when scholars (and practitioners) use the opportunity construct is that entrepreneurs hold certain beliefs concerning what they think they can do with their resources....But, it doesn’t seem natural to call such beliefs, plans or projects ‘opportunities.’” Likewise, Ramoglou and Tsang (2016, 416) reject the “inapt” term *discovery* as “linguistic malpractice” because it lures us into “inferring that opportunities must exist as actualized entities that can be somehow observed.”

The opportunity discovery approach does not deny that both beliefs and preferences are subjective phenomena—in fact, no “Austrian” view could reasonably do so. The question is not whether they are individually subjective, however, but *whether the conditions under which they happen to dovetail* are subjective. In other words, does the fact that entrepreneurial outcomes are based, in part, on how well entrepreneurs understand or anticipate actual future conditions mean anything for understanding their beliefs, actions, results? Discovery means that when *successful* entrepreneurs explore “business plans” and “actualize” those plans into profits there has been *recognition of something meaningful* about the real world. Therefore, can we not meaningfully describe what they have recognized as a phenomenon (an opportunity) that, in part, framed those plans and shaped the actions by which they succeeded?

Foss, Klein, and Bjørnskov’s (2019) JBA framework concedes that entrepreneurial business plans are ultimately based on knowledge and beliefs about current conditions, but it is unclear from where that knowledge (and the corresponding beliefs) about conditions comes from. As pointed out by Ramoglou and Tsang, “[d]espite the *subjectivity* of goals, the conditions of their satisfaction lie in the *objective* conditions of the world” (2016, 417). Using a commonsense definition of opportunity as a set of circumstances that make something (like a goal) possible, or “a favorable juncture

of circumstances,”¹⁰ one might argue that correct knowledge about favorable conditions comes from discovery of at least some of those conditions; to argue otherwise would seem to leave “luck” as the only explanation for successful (i.e., profitable) entrepreneurship. Indeed, examinations of the actual processes employed by expert entrepreneurs suggests that they spend a considerable amount of time and effort both uncovering and manipulating the conditions of opportunity via means of effectual reasoning (Sarasvathy 2001).

DISENTANGLING BELIEFS, ACTIONS, AND RESULTS: ENTREPRENEURSHIP AS PRICE DISCOVERY

The term *discovery* is as apt a word as any to describe the process by which entrepreneurs seek to verify the existence of opportunities and fits with the commonsense notion of opportunity as something that exists, in part, due to knowledge of external realities. Along these lines, Jeffrey S. McMullen and Dean A. Shepherd (2006) make a useful distinction between two types of opportunities, third-person and first-person. A third-person opportunity refers to a “potential opportunity for someone in the marketplace” (ibid., 137); entrepreneurs identify these *potential* opportunities by being attentive, or exhibiting what Kirzner (1973, 1997) refers to as alertness. Third-person opportunities are reflections of both the preferences of the entrepreneur and those of potential stakeholders; they are the basis for actions that may create something more concrete, a first-person opportunity. First-person opportunities can only exist in correspondence with actions on the part of entrepreneurs; they do not, in fact, exist independently of those actions. Tests of validity against “objective reality” (Alvarez, Barney, and Young 2010, 30), therefore, amount to tests of whether first-person (actual) opportunities envisioned by entrepreneurs reflect an underlying reality expressed in their beliefs about third-person (potential) opportunities; equivalently, they are tests of whether preferences revealed by entrepreneurial actions correspond to entrepreneurial beliefs about the existence of those preferences.

¹⁰ Merriam-Webster, s.v. “opportunity (n.),” accessed June 1, 2020 from <https://www.merriam-webster.com/dictionary/opportunity>.

Disentangling opportunities into their exogenous, third-person and endogenous, first-person components goes a long way in clarifying the role of opportunity in motivating entrepreneurial action. Third-person opportunities may *exist* independently of entrepreneurial actions; they can be missed or misperceived; they can be well exploited, imperfectly exploited, or go unexploited; they represent the commonsense notion of opportunity as a set of conditions favorable to action that is value enhancing (i.e., produces benefits in excess of opportunity cost) for some set of stakeholders. They can serve as motivation (incentives) for engaging in actions intended to reveal characteristics of latent supply and demand for goods and services that are not yet in existence. However, first-person opportunities are not revealed independently of entrepreneurial actions; they are contingent upon those actions. They exist only in the sense that actions show them to be valid when entrepreneurs submit their initial and subsequent perceptions of benefit and opportunity cost to market tests. This conforms to the notion of opportunities as conditions of value creation revealed via correct judgments of future preferences.

The third-person/first-person distinction, however, does not go far enough in many ways. It does not address the generation of decision alternatives, nor the tendency (or lack thereof) for those alternatives to match actual preferences. This *discovery* of intersubjective agreement between entrepreneurial beliefs and consumer preferences, and the subsequent replacement of less correct prices with more correct prices for both resources and goods, is the *sine qua non* of the Austrian approach to entrepreneurship and is what distinguishes the role of entrepreneurship in the Austrian tradition from its passive role in neoclassical economics and its uncertainty-enhancing role in post-Keynesian approaches (see, e.g., Dempster 1999). The discovery approach of Mises, Hayek, and Kirzner thus conceives of entrepreneurship as an essential error correction procedure within the market process.

Entrepreneurship researchers in management, even some of whom adhere to a constructivist view of entrepreneurship, have recognized the problem with thinking of opportunity in a purely subjective sense. Per Davidsson (2015), though skeptical of the usefulness of the opportunity construct, concedes that opportunity exists in recognizing that subjective perceptions of

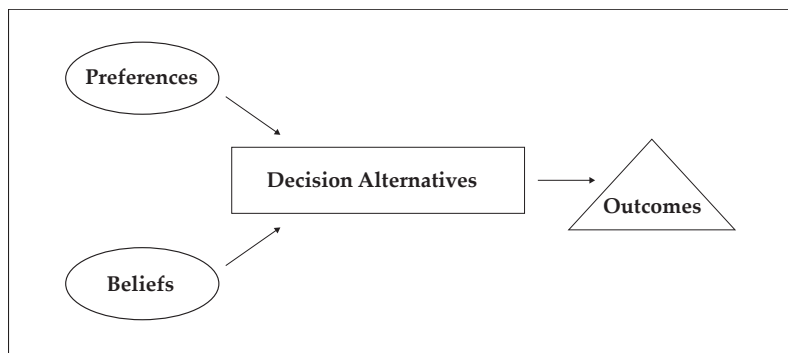
market disequilibrium (an objective phenomenon) motivate entrepreneurial actions and provide an explanation for their success. Matthew S. Wood and William McKinley (2018), in presenting a case for retaining the opportunity construct as an umbrella concept in entrepreneurship research, argue that the construct is necessary to help researchers distinguish means from ends, to account for feedback from market tests (preference revelation), to avoid ambiguity (between beliefs, judgments, and actions), and to link entrepreneurship to practice, where the notion of opportunities—both successfully exploited and missed—is part of the generally accepted norms of language in entrepreneurship. This discussion supports these conclusions and provides an additional rationale for retaining the opportunity construct, namely, that it correctly describes the situation of congruence between the judgment of decision alternatives and the characteristics of subjective preferences that determine the correctness of those judgments. In this view, opportunities are neither merely “out there,” existing independently of entrepreneurial beliefs and actions, nor are they purely subjective creations in the mind of the entrepreneur. Instead, they refer to conditions under which preference revelation indicates disequilibrium between actual prices of resources and goods and their intersubjective (shared) values.

In this article the concept of discovery is refined as the *processing of information into knowledge* (Foss, Klein, and Bjørnskov 2019, 1204) that allows entrepreneurs to replace less correct prices with more correct ones based on the revelation of unsatisfied preferences for new goods and services in new markets. In other words, discovery and opportunity coevolve as mutually reinforcing components of the entrepreneurial process. There can be no recognition of opportunity without successful discovery, just as there can be no revelation of opportunity without successful judgment. In this sense, the idea of discovery as the result of alertness to preexisting (objective) opportunities is merely being replaced with a more plausible idea of discovery as a corollary to the emergence of (intersubjective) opportunities. Unlike the former, this view allows not only for the possibility that opportunities are real things, with real properties that correspond to actual states of the world, but also for the possibility that discovery *fails* to identify an opportunity, either because the characteristics of the opportunity were different from what the

entrepreneurs imagined (a missed opportunity) or because there was never an opportunity in the first place (a nonopportunity).¹¹

The preceding discussion, therefore, highlights four important aspects of opportunity discovery for the study of entrepreneurship: (1) motivations for entrepreneurial actions, (2) generation of decision alternatives, (3) convergence of subjective beliefs and subjective preferences, and (4) welfare impacts of variability in entrepreneurial strategies. We address these aspects by employing a simple model of the entrepreneurial process. The model abstracts from admittedly important elements in the process. Nonetheless, it provides a useful framework for understanding the important differences between subjective and intersubjective phenomena, and the corresponding differences between discovery and judgment that are important for delimiting the role of the opportunity construct. Figure 1 below illustrates the model.

Figure 1. The Entrepreneurial Discovery Process



The entrepreneurial process begins with the subjective phenomena that make up the material for value judgments: the subjective preferences of individuals in the marketplace with respect to benefit and cost, and the beliefs of individuals that might profit from an understanding of those preferences, i.e., potential entrepreneurs. These entrepreneurial beliefs consist of evaluations of what others' preferences are, what kinds of ventures and strategies might be

¹¹ On the concept of nonopportunity, see, e.g., Ramoglou and Tsang (2016, 420–21).

profitably employed to satisfy those preferences, and what benefits and costs might be earned and incurred as the result of actions to implement such ventures and strategies. Importantly, these beliefs may vary widely in their accuracy concerning any of these things; potential entrepreneurs begin with only an imperfect understanding of preferences, strategies, and consequences. Nonetheless, if entrepreneurial beliefs suggest a value-creating allocation of future resources that differs from the current allocation that might earn an economic profit, the potential entrepreneur may be motivated to engage in a Hayekian discovery procedure, whereby they gather information to validate, modify, or falsify their own beliefs.

It is here that the conceptualization presented in this article differs from the standard Kirznerian view of opportunity discovery. At this point, the most that can be said of the potential entrepreneur is that they possess beliefs and motivation. However, an effectual (Sarasvathy 2001) process of discovery can reveal *possibilities* of convergence between entrepreneurial beliefs and the subjective preferences of individuals that represent decision alternatives. Among these decision alternatives may be opportunities for profitable actions. The process itself is collaborative, requiring that the entrepreneur interact with the market environment (and the individuals in it), identify and recruit important stakeholders, and learn from both direct and indirect experience to discover whether and how intersubjective convergence of personal beliefs and the realities of preferences might be achieved. If such an intersubjective convergence takes place—itsself an uncertain proposition—an opportunity can be said to exist. Thus, *opportunities arise as possibilities for profitable action among decision alternatives*. Table 1 below illustrates this result.

Table 1. Outcomes of the Discovery Process

Price-Preference Alignment			
Beliefs	High	Low	
	Correct	Nonopportunity	Valid opportunity
	Incorrect	Mistaken judgment	Missed opportunity

As indicated in the table, there are basically four possible outcomes of the entrepreneurial discovery process. One possibility is that the entrepreneur discovers that consumer preferences with respect to the area of investigation are in line with the opportunity costs of resources. In other words, there is no “third-person” opportunity to explore. This is what would most correctly be termed a nonopportunity; it refers to the situation where gains from entrepreneurial action are not expected under correct assumptions about the reality of the external environment, including both actual and latent preferences. A second possibility is that the entrepreneur believes an opportunity exists when it, in fact, does not. This would be an example of mistaken judgment on the part of the entrepreneur. A third possibility is that an opportunity for realignment of preferences with prices is possible but that discovery fails to reveal this to the entrepreneur. This is, quite simply, a missed opportunity. Finally, there is the case where entrepreneurial discovery correctly notices and diagnoses a possibility for realignment; this is where intersubjective convergence of entrepreneurial beliefs and consumer preferences results in a valid opportunity for action. Although this does not guarantee a successful venture—entrepreneurial judgment may still fail to implement the appropriate strategies for successful exploitation—it is nonetheless a precondition for successful judgment. No amount of expert judgment can overcome a lack of intersubjective convergence between consumer preferences and entrepreneurial beliefs.¹²

In this view, there is no reason to assume that either (a) opportunity (convergence) always results from the discovery process or (b) entrepreneurs engaging in discovery always recognize and/or exploit the opportunities that emerge. Opportunities are uncertain; they can fail to emerge, they can emerge and be missed, or they can emerge, be recognized, and still fail to be taken advantage of with the correct entrepreneurial judgments and investments. Thus, Foss and Klein’s (2012) judgment-based approach is not entirely at odds with the view expressed here. Rather, it is more correct to say that *the*

¹² Put differently, if judgment is the ability to “accurately assess, estimate, or infer others’ preferences” (McMullen 2015, 654), then discovery of intersubjective convergence (i.e., opportunity) is a necessary prerequisite for a correct judgment that results in a profitable investment; otherwise, correct judgment will result in no investment action at all.

process by which an opportunity is discovered is operationally distinct from the process by which judgments are made. Correct (successful) judgment requires correct (successful) discovery, but discovery itself does not ensure correct judgment. Foss and Klein are correct to emphasize a previously underexplored aspect of the entrepreneurial process but are incorrect in suggesting that discovery is unimportant. The framework presented here incorporates elements of both and may thus be expressed as a discovery-judgment view (DJV). This view of opportunity discovery fits well within the parameters of evolutionary reasoning as well as with notions of pattern recognition emphasized by Baron (2004, 2006). Most importantly, it makes a useful distinction between the information-gathering (discovery) and decision-making (judgment) elements of the entrepreneurial process.

APPLICATIONS OF THE DISCOVERY-JUDGMENT VIEW TO ENTREPRENEURIAL STRATEGY AND POLICY

Our view suggests that the motivation for entrepreneurial actions is the possibility of intersubjective convergence between beliefs and preferences in a future goods space. Thus, it indicates a distinction between the conditions of opportunity and the strategies for recognizing and exploiting them. This is at the heart of Mises's ([1949] 1996, 214) distinction between the capitalist-entrepreneur—the uncertainty-bearing aspect of entrepreneurship emphasized in Knight (1921) and in the JBA framework—and the entrepreneur promoter, who speculates on behalf of the capitalists. This entrepreneur not only speculates about future conditions that may bring about profits, as a pure capitalist might, but also formulates specific plans (strategies) to adjust production to the expected future conditions. Entrepreneurs are more than just risk takers; they are the actors who imagine, explore, and validate decision alternatives regarding future resource allocations.

Strictly speaking, economics does not suggest that consumers want goods and services, per se; what they desire—and are willing to sacrifice for—are the “features” of goods and services. Features are what make up consumer preferences, not goods and services, because it is the advancement of subjective ends like happiness, health, comfort, prestige, contentment, joy, status, power, etc. that

individuals are trying to satisfy when they sacrifice resources to obtain goods and services (see, e.g., Gorman 1959, 1980; Lancaster 1966, 1971; and Becker 1965, 1981, 2007). Therefore, the “discovery” aspects of entrepreneurship does not mean discovery of individuals’ demand for iPhones or ride sharing services, but the discovery of preferences that suggest something like an iPhone or a ride sharing service *might be* demanded at a price above opportunity cost. In other words, discovery does not require that a fully formed idea of a product or service be in the mind of either the entrepreneur or the consumer, only that the entrepreneur be able to gather and process information about consumer preferences and relate it to their own ideas about the use of resources and their opportunity costs. It does not require a demand for any *particular* thing.¹³ Before introducing products like iPhones or ride sharing services into the marketplace, entrepreneurs examine evidence of consumer preference for features of these goods (like the convenience of ride sharing, internet connectivity, or any of the other characteristics that make them desirable), what consumers might be willing to sacrifice for them, and the opportunity costs of including them in the bundle of features that define the good or service. This is what we mean by discovery.

A useful analogy is that of entrepreneurial strategy as an options-producing (or options-writing) process. In finance theory, option writers obligate themselves to future courses of action without the certainty of knowing that those courses of action will turn out to be profitable; they provide options for others to submit as tests of those expectations. The writer obligates himself or herself to a course of action that depends on the subsequent decision of the purchaser of the option to exercise it or not. If conditions turn out to be favorable for exercise, the option writer stands as the counterparty (buyer for the option to sell, seller for the option to buy) to the option holder; if not, the option expires unexercised along with the obligation of the writer. Option writers seek to benefit from future market conditions by receiving more in profit from the sale of options than they incur in costs of obligations.¹⁴ One can define

¹³ In fact, this must be precisely what Ramoglou and Tsang mean by “propensities,” because they are the “seeds” from which a fully formed demand must eventually emerge.

¹⁴ One of the most well-known models of options pricing, the Black-Scholes option pricing model, estimates this value (premium) as a function of five simple features:

entrepreneurial strategy as the options-writing process applied to the creation of new paths of future resource allocation, i.e., the writing of real, as opposed to financial, options. It is, to paraphrase Jean-Baptiste Say, the application of knowledge to a *potentially* useful purpose (Hebert and Link 1982, 31), and the process that produces this knowledge and its application is the work of entrepreneurial discovery, both within and without existing firms.

The options-writing perspective has implications for our understanding of entrepreneurial strategy. First, the entrepreneurial function can be thought of as encompassing two very different roles, often fulfilled by different actors. The writers of real options comprise the actors who engage in a systematic process designed to explore third-person potential opportunities and examine the first-person characteristics of those opportunities by submitting them to market tests. These are Mises's ([1949] 1996) entrepreneur promoters; they are what we traditionally think of as the Schumpeterian entrepreneur who searches for new means-ends frameworks, or a new "production function" (Schumpeter 1934). The entrepreneur promoter must also be able to "engineer agreement among all interested parties, such as the inventor of the process, the partner, the capitalist, the supplier of parts and services, the distributor, etc." (Hirschman 1958, 17).¹⁵

Mises ([1949] 1996) also refers, however, to the risk-taking and judgmental aspects of entrepreneurship fulfilled by those who choose from among various options to bring first-person ventures into existence via funding and expertise. These capitalist-entrepreneurs are the ones who are responsible for making the crucial decisions that direct resources toward specific ventures—and, by extension, not toward others. This aspect of the entrepreneurial process refers to the outcome of trial-and-error market tests intended to evaluate third-person opportunities for first-person significance, as well as the associated asset-specific investments necessary to materialize the chosen options. David A. Harper (1996, 34) refers to this part of the process as the "internal architecture

the price of exercise, the spot price of the underlying asset(s), the expected volatility of the underlying asset price(s), time until exercise, and the risk-free rate of return.

¹⁵ This description suggests a strong affinity with the stakeholder approach of Parmar et al. (2010) and others.

of a business enterprise [that] affects the acceptance and rejection of entrepreneurial hypotheses and enterprising activity." Just as financial options purchasers give actual existence to an options contract by agreeing to include it their portfolios, capitalist-entrepreneurs attempt to actualize opportunities by expending resources (financial, intellectual, and social capital) to bring them to fruition.¹⁶

Notice that in the analogy of the options process to the entrepreneurial process, the entrepreneur promoter takes the role of the options writer, while the capitalist-entrepreneur takes the role of the option purchaser. Mises ([1949] 1996, 215) realized that these two roles are often entangled because we use one term, *entrepreneur*, to express both aspects of the entrepreneurial process. Therefore, the tension between Schumpeterian innovation and Kirznerian price discovery is the result of linguistic confusion over what aspect of the entrepreneurial process is being emphasized. This paper has argued that the tension between creation and discovery is, in part, the result of this same confusion. The very term *entrepreneur* is an umbrella concept that describes several functions of innovation, promotion, and risk taking (Hebert and Link 1982) that evolve within the same process.

Further, it is not necessary that the entrepreneurial roles implied by the options analogy refer to distinct parties. Entrepreneur promoters, unlike financial option writers, typically devise and arrange contracts that allow them to direct resources contingently toward the developing ends and to share in the upside potential of the future resource allocation paths they identify.¹⁷ Likewise, unlike financial option holders, capitalist-entrepreneurs often take an active role in the development of the market tests that identify potential opportunities. This view of the dual nature of entrepreneurial strategy—the direction of attention and decision alternative generation by entrepreneur promoters, and the direction of resources and risk taking by capitalist-entrepreneurs—allows us to build a conceptual bridge between the subjective, speculative nature of entrepreneurial search and the objective, concrete nature

¹⁶ This underscores the importance of a well-functioning financial system directing resources and expertise to the most valuable ventures (Dempster 2015).

¹⁷ An exception would be those who search for opportunities with the intent of selling them to others.

of entrepreneurial action. It is, thus, a description of Sarasvathy and Venkataraman's (2011, 125–27) notion of intersubjectivity as the concept that links the identification of market problems with their solutions via a coherent, directed process of knowledge integration and informational synthesis.

The view presented in this article also provides a more stable framework for exploring and understanding the public policy implications of variability in the institutional contexts of entrepreneurial action. Baumol (1990) and subsequent work (see, e.g., Acemoglu, Johnson, and Robinson 2001; Boettke and Coyne 2009; Sobel, Clark, and Lee 2007; Sobel 2008; and Dempster and Isaacs 2017) emphasize the importance of institutions for determining the social welfare consequences of entrepreneurial action. In short, institutions incentivize differences in entrepreneurial strategies that may be either welfare enhancing or welfare reducing from a societal standpoint. Entrepreneurs choose strategies for exploiting perceived opportunities based on their estimates of private benefit and cost, which may or may not reflect social benefit-cost ratios. Thus, it is possible that entrepreneurial discovery could result in decision alternatives that anticipate private net benefits while also resulting in net social welfare losses. Simple examples include perceived opportunities exploited via corruption, political reallocation of resources, or the establishment of monopolistic barriers to entry. In maintaining the central position of opportunity in the analysis of entrepreneurial action, the view presented here provides a framework for examining variability in the social welfare impacts of alternative decision strategies that other approaches which have jettisoned the theory of opportunity discovery will tend to obscure.

CONCLUSIONS

The concept of entrepreneurial opportunity has undergone a period of useful critique and refinement since Venkataraman (1997) and Shane and Venkataraman (2000) first employed the term as one of the defining features of entrepreneurship studies. This article has incorporated much of the research in this area over the past two decades to formulate a novel Austrian reinterpretation of this concept as an intersubjective phenomenon that emerges from the entrepreneurial process of discovery and judgment. This view

recognizes the inherent problems with the traditional Kirznerian portrayal of discovery as a matter of alertness or attentiveness to preexisting conditions and instead conceives of entrepreneurship as a price discovery procedure for the emergence of future goods, services, and resources within an evolutionary realist framework. In this framework, entrepreneurial motivations and actions are reflections of the expectation of actual, but yet-to-be-revealed, conditions here described as opportunities, and the process by which these expectations are formed and validated is described as discovery. Discovery is, thus, distinct from judgment, as it describes the process that allows judgment to be exercised, i.e., it is an antecedent to judgment. This view retains the importance of the anticipation of intersubjective agreement between entrepreneurial beliefs and consumer preferences as the sine qua non of the Austrian view of entrepreneurship while jettisoning problematic descriptions of opportunity discovery as the result of superior attentiveness to the preexisting conditions of supply and demand.

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ENTREPRENEURIAL EMPOWERMENT: YOU ARE ONLY AS GOOD AS YOUR EMPLOYEES

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JEL CLASSIFICATION: B53, M12, M54

ABSTRACT: As employees are increasingly recognized as an important source of ideas and inspiration, contemporary leadership research finds that the central task of leaders is to empower employees to realize their skills and talents to achieve an organization's visions and goals. Drawing on this leadership premise, this study develops the concept of entrepreneurial empowerment (EE). EE has structural and psychological dimensions that empower employees to utilize their knowledge to solve the internal Hayekian knowledge problem. EE introduces an endogenous discovery process in which entrepreneurial leaders play a central role in empowering employees to use their localized knowledge. This entrepreneurial discovery process offers opportunities to adapt and innovate using the knowledge experiences of employees. This study underscores that a venture's success is not tied to an entrepreneur's inspirational ideas (or, more broadly, their asymmetric knowledge experiences), but to their ability to inspire ideas from all levels of their business hierarchy.

"No company, small or large, can win over the long run without energized employees who believe in the mission and understand how to achieve it." – Jack Welch, General Electric

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To succeed in an increasingly complex and changing market environment, ventures can no longer compete on the basis of their leader's capabilities, knowledge, talents, and vision alone (e.g., Cowen and Parker 1997; Foss, Foss, and Klein 2007; Rigtering, Weitzel, and Muehlfeld 2019). Ideas to develop new products and services can come from anywhere, from loyal customers, blog spheres, supply chain partners, social media, and above all employees (Rigtering, Weitzel, and Muehlfeld 2019). For instance, 3M established a culture in which employees are encouraged to develop "home-grown" solutions to addressing their customers' needs. These home-grown solutions transformed a small-scale mining venture into a leading material sciences company and have earned the company a spot on Fast Company's Best Workplace for Innovators list (Rubinson 2009; FastCo Works 2019). Companies such as 3M underscore that in order to succeed entrepreneurs must be able to adapt to ideas that extend beyond their own (e.g., Lee, Lee, and Pennings 2001; Rigtering, Weitzel, and Muehlfeld, 2019; Sarasvathy 2001). Adaptation promotes an integration of different knowledge experiences that enables the venture to respond to changing market conditions and opportunities not previously considered (e.g., Hargadon and Sutton 1997; Sarasvathy 2001; Sullivan and Marvel 2011). Hence, although successful ventures are commonly attributed to an entrepreneur's ideas, talents, and vision (e.g., Witt 1998, 1999), entrepreneurs today face increasing demands to adapt their ideas to the knowledge experiences of others (see Cowen and Parker 1997; Rigtering, Weitzel, and Muehlfeld 2019; Sarasvathy 2001).

Although the role of Austrian economics in contemporary entrepreneurship research remains a subject of much discussion and debate (Klein and Bylund 2014), Austrian economics is particularly suited to addressing the challenges faced by today's entrepreneurs. According to the subjective tenets of Austrian economics, entrepreneurs operate in a sea of subjective experiences in which they adapt by mobilizing these knowledge experiences to address opportunities not currently met by the market. This adaption has been widely understood as the Hayekian knowledge problem: the problem of how to utilize knowledge experiences that are broadly distributed among the productive members of society. F. A. Hayek

(1945) argued that the productive members of society, such as employees, have a knowledge of the “particular circumstances of time and place” (521). This knowledge involves an employee’s particular understandings of the special circumstances, challenges, and local conditions of their job. Hayek (1945) argued that a single mind, such as that of a centrally planner, cannot offer an adaptation that can utilize this “knowledge of particular circumstance of time and place,” because this knowledge is highly localized to an employees’ experiences. He instead argued that employees are in the best position to utilize this knowledge because their understandings of the special circumstances of their job offered employees or “arbitrageurs” (522) opportunities to exploit local price differentials not known by others. This arbitrage function was later formalized by Israel M. Kirzner’s (1979, 2009, 2019) concept of the alert entrepreneur. Alertness involves discovering price arbitrage opportunities by bringing into use factors of productions at a price less than their valued uses. Specifically, as employees are key factors of a firm’s production, alertness solves the Hayekian knowledge problem, because the alert entrepreneur is incentivized to bring into use their employee’s knowledge to discover the price arbitrage opportunities of the market.

Although Kirzner (1979) has been credited with solving the Hayekian knowledge problem (Elert and Henrekson 2019; Foss and Klein 2016), the concept of alertness implicitly assumes that an employee’s knowledge can be centralized under an entrepreneur’s leadership. This leadership involves a position of authority in which the entrepreneur has the power to institute their vision over their employees (Shamir, House, and Arthur, 1993; Witt, 1998). In this position, however, an entrepreneur cannot readily identify their employees’ knowledge, because the entrepreneur’s authority is removed from their employees’ day-to-day experiences. This is consistent with Hayek (1945), who argued that employees are best suited to making decisions on how to allocate their time, resources, and efforts in dealing with their daily operational challenges because employees are most familiar with the circumstances facing them in carrying out their tasks. Hence, the challenge facing the entrepreneur is that their inability to centralize their employees’ knowledge introduces an internal Hayekian knowledge problem (see also Elert and Henrekson 2019; Foss 1997; Foss, Foss, and Klein 2007) of: how

an entrepreneur in a position of authority can utilize the different knowledge experiences of their employees when employees are in the best position to know their valued contributions?

This study's objective is to develop a concept of "Entrepreneurial Empowerment" (EE) to address this internal Hayekian knowledge problem. Leadership research has widely recognized that employees are an important source of ideas and inspirations (Argyris 1998, Foss, Foss, and Klein 2007; Gagne and Edward 2005; Govindarajan and Srikanth 2013; Lee and Koh 2001; Lee, Willis, and Tian 2018; Rigtering, Weitzel, and Muehlfeld 2019). The task of the leader, then, is to empower employees to realize their skills and talents to achieve the organization's mission and goals (Argyris 1998; Cowen and Parker 1997; Foss, Foss, and Klein 2007; Lee and Koh 2001; Lee, Willis, and Tian 2018). Drawing on this leadership premise, this article develops the concept of entrepreneurial empowerment (EE). EE involves a leadership task of organizing a firm's internal decision-making process in which employees are delegated a decision-making authority that advances the entrepreneur's mission. Specifically, EE has structural and psychological dimensions that empower employees to utilize their knowledge of particular circumstances of time and place to solve the internal Hayekian knowledge problem. By solving this problem, EE offers opportunities for the entrepreneurial leader to adapt to and innovate using the knowledge experiences of their employees in ways that cannot be achieved through centralized direction. Propositions surrounding this EE concept are offered. One major contribution of the concept of EE is that the entrepreneurial leader offers an internal organization that empowers employees to solve an internal Hayekian knowledge problem and thus advances an entrepreneur's mission or goals. As result, this study offers a theory of internal organization that opens up the "black box" of Austrian economics (Foss and Klein, 2012 70).

I. UNITS OF ANALYSIS, DEFINITIONS AND ASSUMPTIONS

Before developing this study's conceptual model, it is important to outline its definitions, assumptions, and units of analysis. According to leadership research, empowerment is defined by an

“increased individual motivation at work through the delegation of authority to the lowest level in an organization where a competent decision can be made” (Seibert, Silver, and Randolph 2004, 332). As entrepreneurs often hold positions of leadership, an entrepreneur’s leadership involves the power to delegate authority to the lower levels of their decision hierarchy (e.g., Cowen and Parker 1996; Foss, Foss, and Klein 2007; Shamir, House, and Arthur 1993; Witt 1998). In addition, this leadership also involves an ability to motivate and shape employees’ behavior and attitudes (Ashford and Sitkin 2019; Shamir, House, and Arthur 1993; Witt 1998), as well as empowering the psychological states or intrinsic motivations of their employees (Lee and Koh 2001; Lee, Willis, and Tian 2018). With these distinctions, entrepreneurial leadership is defined by structural and psychological dimensions that involve empowering employees through a delegation of authority to all levels of the decision hierarchy and an ability to appeal to employees’ intrinsic motivations. This definition assumes that employees’ empowerment is “influenced or caused” by an entrepreneur’s leadership. This assumption is consistent with Lee and Koh (2001), in which empowerment is understood as the “behavior of a supervisor who empowers his/her subordinates” (685). With this assumption, the unit of analysis is focused on the structural and psychological relationships that exist between the entrepreneurial leader and their employees (Lee and Koh 2001). Specifically, this study focuses on the leadership of senior members and not supervisory managers, because leadership studies find that hierarchically organized businesses are subject to social learning processes in which a leader’s actions can have a “cascading effect” that impacts the lowest-level employees of their decision hierarchy (Liu, Liao, and Loi 2012; Shamir, House and Arthur 1993; Witt 1998).

Empowerment and Hayek’s Libertarian View of Markets

Although the concept of empowerment is commonly explained in terms of a leadership function (e.g., Lee and Koh 2001, Spreitzer 2008), empowerment also shares a similar political economic orientation to the libertarian tenets of F. A. Hayek (1945, 1952). As in Hayek (1945), empowerment is a political exercise that rejects the “politics in command” of centrally planned/socialist economies

(Mohanty 1995, 1434). Empowerment involves granting freedom and equality by transferring power from an upper level agency, such as a central planner or authority, to people below (Mohanty 1995). This empowerment involves affirming an individual's freedoms by strengthening their capacity for self-governance, autonomy and self-determination and is an important economic and political goal of Western societies (Mohanty 1995). Similarly, Hayek's notion of "true libertarianism" is founded on a political economic philosophy that celebrates the benefits of individual choice and freedom. This libertarianism appeals to the collective powers of a decentralized decision-making process, as Hayek (1952) shows:

"many of the greatest things man has achieved are not the result of consciously directed thought, and still less the product of deliberately coordinated effort of many individuals, but of a process in which the individual plays a part which he can never fully understand. They are greater than any individual precisely because they result from the combination of knowledge more extensive than single mind can master." (84)

Although empowerment shares a similar political-economic orientation to Hayek's true libertarianism, their motivations for rejecting the powers of a central authority differ. Empowerment rejects the "politics in command," because of the corruptive tendencies of government (Mohanty 1995). Hayek's true libertarianism (1945) rejects central planning on grounds of its limited ability to process decentralized information (see also Klein 1996). Hayek (1945) argued that the allocation of societal resources requires centralizing dispersed knowledge experiences that cannot be fully known by a central authority. This dispersed knowledge is held by the "man on the spot," consisting of workers or employees. Each employee has a knowledge of the particular "circumstances of time and place," or more simply put, knowledge of the particulars. This knowledge consists of the particular work challenges and local work conditions faced by an employee. For instance, a real estate employee's ability to develop their clientele is dependent on their unique understandings of the amenities in a neighborhood (i.e., quality of schools, relative affluence of homeowners, crime rates, general history of the neighborhood, etc.). The man on the spot/employee is better suited to utilizing this knowledge of the particulars than a centrally planned actor, because the man on

the spot is most familiar with the unique circumstances of their job (Hayek 1945). As a result, Hayek (1945) argued that the chief economic problem is not concerned with how a central planner can allocate the scarce resources of society, but rather a knowledge problem “of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know” (520).

II. ALERT ENTREPRENEURSHIP AND A SOLUTION TO HAYEK’S KNOWLEDGE PROBLEM

In sharing Hayek’s (1945) commitments to freedom and liberty, Kirzner’s (1979) concept of alertness offered a mechanism key to solving the Hayekian knowledge problem (Foss and Klein 2016). Alertness is defined as “an attitude of receptiveness to available, but hitherto overlooked, opportunities” (Yu 2001, 51). This receptiveness involves a psychological predisposition for discovering price arbitrage opportunities not seen by others (Kirzner 1979). Alertness involves discovering price arbitrage opportunities where the entrepreneur assembles their factors of production at a price that is less than the prices received from the sale of their products / services; however, it does not entail a deliberate search (Kirzner 1979, 2019; Yu 2001). Deliberate search involves a commitment of resources (Kirzner 2019) in which the “agents already know enough of the territory that they know what kind of information they want and where to acquire such information” (Yu 2001 51). Yet Tony Fu-Lai Yu (2001) argued that agents search because they are dissatisfied with their current information. This dissatisfaction motivates a search for better knowledge involving the asymmetric knowledge experiences of the entrepreneur (Shane and Venkataraman 2001, Yu 2001). As employees’ knowledge of the particulars are distributed across an organization’s factors of production, an entrepreneur has an asymmetric knowledge that enables the entrepreneur to assemble these distributed experiences at a total price or cost that is less than their value uses (i.e., prices of the products or services received). Specifically, the task facing the alert entrepreneur is to draw on their asymmetric knowledge experiences in discovering those wage rates that will not only incentivize employees to utilize their knowledge of the particulars, but to also discover a wage rate

that is less than the prices of their sold products or services. Hence, through this alert discovery of arbitrage opportunities, the entrepreneur engages in a nondeliberate search in which employees' knowledge of the particulars is brought into use by the price system to solve the Hayekian knowledge problem.

Internal Hayekian Knowledge Problem

Yet in spite of Kirzner's (1979) contributions to solving the Hayekian knowledge problem, the entrepreneur faces a distinct "internal Hayekian knowledge problem" (Elert and Henrekson 2019; Foss 1997). This internal Hayekian knowledge problem involves a use of knowledge in which employees' knowledge of the particulars cannot be centralized under the direction of an entrepreneur's authority (see also Cowen and Parker 1997; Elert and Henrekson 2019; Shane 2000). According to Hayek (1945), employees' knowledge of the particulars cannot be centralized because this centralization requires aggregating an employee's knowledge of the particulars in which differences in their local work conditions and special circumstances would be abstracted away. Due to the distributed nature of an employee's knowledge of the particulars, this knowledge thereby cannot be conveyed to a central authority (Hayek 1945, 524). Since entrepreneurs are also tasked with allocating their firm's factors of production (e.g., Klein 1996; Bylund 2016), this inability to centralize their employee's knowledge of the particulars renders the entrepreneur unable to allocate their factors of production—employees—to their most valued uses. As result, unlike the traditional Hayekian knowledge problem, the internal Hayekian knowledge problem raises a distinct firm-level problem, because the challenges surrounding the centralization of a firm's distributed knowledge impact a firm's internal allocation of resources.

The internal Hayekian knowledge problem is closely tied to Ludwig von Mises's economic calculation problem, and both can be used to elaborate on this firm-level distinction. According to Mises, a firm is tasked with an economic calculation problem of allocating a firm's resources or factors of production that would satisfy the needs of its consumers (Foss and Klein 2010; Klein 1996). This allocation requires that the entrepreneur understand current

factor prices as well as the anticipated prices of consumer goods sold (Foss and Klein 2010). An understanding of these current factor prices is critical, because in the absence of these factor prices, the entrepreneur cannot allocate their factor inputs into meeting the firm's consumer needs (Klein 1996). Mises has used this economic calculation problem to challenge centrally planned governments, because the absence of property rights over factors of production limits a firm's ability to discover the prices of their factor inputs (Klein 1996). In the absence of these factor prices, socialistic and, more generally speaking, centralized planned organizations, cannot offer an allocation of capital that solves the economic calculation problem (Bylund 2016; Klein 1996; Foss and Klein 2010). The internal Hayekian knowledge problem parallels the criticisms raised by Mises's economic calculation problem. According to Hayek (1945), the distributed nature of an employee's knowledge renders such knowledge unable to be aggregated into a price statistic (Hayek 1945). In the absence of these internal prices, an employee's knowledge of particulars cannot be coordinated into discovering an allocation of resources that will meet the needs of the firm's customers. As a result, like Mises, the internal Hayekian problem underscores that centrally planned organizations face limits in their ability to solve the economic calculation problem.

III. ENTREPRENEURIAL JUDGMENT

To address limits in a firm's central authority, an entrepreneur's judgment has been offered as a response to Mises's economic calculation problem (Bylund 2016; Klein 1996). Judgment refers "to the process of businesspeople forming estimates of future events in situations in which the relevant probability distributions are themselves unknown" (Foss, Foss, and Klein 2007, 1896). For instance, judgment can involve the formation of a business plan in which factor inputs are identified and coordinated with the purpose of earning future rents or profits (Foss, Foss, and Klein 2007). This judgment occurs by giving the entrepreneur ownership over the use of a firm's factor inputs (Foss, Foss, and Klein 2007; Foss and Klein, 2010). According to Mises's economic calculation problem, ownership over factor inputs creates an entrepreneurial incentive to reveal their prices such that factors of production can be allocated in

ways that satisfy future needs or demand expectations (Klein 1996). This is because factor prices are influenced by the varied uses of an input, which gives owners of capital a strong incentive to reveal their factor input's valued uses (see also Bylund 2016; Klein 1996). The challenge, however, is that these valued uses are known only by members who have an intimate or particular understanding of a factor's varied uses (Hayek 1945). Hence, judgment suggests that owners of capital have a strong incentive to encourage their employees to utilize their knowledge of particulars to addressing their firm's economic calculation problem (see also Klein and Foss 2010; Klein 1996). This is consistent with Per Bylund (2016), who noted, "the only basis for making decisions and attempting to identify room for improvement is entrepreneurial judgment: there are no market prices to guide the entrepreneur" (110). This judgment suggests that through ownership the entrepreneur exerts control over the firm's internal allocation of resources that is distinct from those resource allocations determined by market prices (e.g., Foss, Foss, and Klein 2007).

Theory of the Firm: An Austrian Judgment Perspective

To understand this internal allocation, R. H. Coase's theory of the firm is instructive to Austrian explanations of judgment (see also Bylund 2020; Klein and Foss 2010). In that, while Kirznerian (1979) and Hayekian (1945) explanations would argue that market prices would incentivize employees to utilize their knowledge of the particulars, Coase (1937) had long recognized that there is a transaction cost in determining these relevant prices. Coase (1937) argued that if there are no transaction costs, an employee's knowledge can be readily coordinated through a series of market-based exchanges. These contractual exchanges would do away with the need to transmit any knowledge to a central authority, and thus an organization—as defined by Coase (1937) an authority would cease to exist. The fact, however, remains that authority exchanges exist in all types of organizations, including entrepreneurial ones. The existence of these exchanges suggests that the price system is not a sufficient mechanism to incentivize the use of knowledge within an organization (see also Elert and Henrekson 2019; Shane 2000). This is particularly the case when considering an employee's knowledge

of the particulars, because such knowledge is tacitly known to the employee. With this tacitness, external prices cannot readily reveal the valued uses of an employee's knowledge of particulars (see also Bylund 2016; Foss and Klein 2010), because there is a transaction cost in organizing this tacit knowledge through a market-based exchange. Thus, according to a Coasian explanation, a firm's existence can be attributed to an entrepreneur's judgment because judgment offers an alternative to market prices in allocating a firm's internal resources (Bylund 2016, 2020).

For instance, Bylund (2020) draws on a Coasian argument to explain a firm's existence. Bylund (2020) attributes a firm's existence to the entrepreneur/manager's ability to "actively directs factors of production instead of the price mechanism" (10). Through an entrepreneur/manager's authority, external market exchanges are internalized in the firm, avoiding the transaction costs of the market (Bylund 2020). These transaction or marketing costs involve costs in determining factor prices and organizing factor inputs. Bylund (2020) argues that a firm exists when the entrepreneur/manager directs an internal allocation of resources that avoids these marketing costs. Yet, due to limits in bounded rationality, an entrepreneur/manager's internal allocation of resources is subject to diminishing returns. These diminishing returns limit an entrepreneur/manager's ability to replicate the resource allocations of the market. Hence, Bylund (2020) argues that a firm's existence depends on developing an internal allocation that not only avoids marketing costs ($MktgCost$) but also avoids the relative inefficiency of an entrepreneur/manager's internal allocation (A_s) to a market efficient allocation (A_e).¹ By drawing on this marginal analysis, Bylund (2020)² also argues that the entrepreneur/manager can increase the size of their firm's operation when their internal allocation of resources (A_s) exceeds the difference between the market efficient allocation (A_e) of resources and the market costs associated with this allocation ($MktgCost$).

¹ According to Bylund (2020), a firm's existence is explained by a simple rearrangement of his terms where $Mktg\ Cost > A_e - A_s$.

² It should also be noted that Bylund's (2020) work is based on an interpretation of Coase's original insights. This work involves formulizing Coase's theory and this formulization should not be conflated with Coase's original or seminal contributions. An alternative to Coase's theory is offered by Bylund (2016)

Although Bylund (2020) does not directly examine the role of entrepreneurial judgements, an entrepreneur's judgement is implicit in its explanations (see Bylund 2016). Since the entrepreneur/manager plays a "directive" role in the firm's internal allocation of resources (Bylund 2020), an entrepreneur's judgments surrounding the prices of factor inputs can offer an internal allocation of resources (A_s) that avoids Bylund's (2020) marketing costs. For instance, since an entrepreneur's judgment encourages employees to utilize their knowledge of the particulars (see also Foss, Foss, and Klein 2007), such knowledge offers an internal allocation of resources that is not readily known through external market prices. This judgment thereby offers an internal allocation (A_s) that avoids marketing costs and thus impacts a firm's reason to exist. Furthermore, since an entrepreneur's judgment is also subject to limits in bounded rationality, there are diminishing returns to an entrepreneur's judgments. Such diminishing returns can reduce the efficiency of an entrepreneur's internal allocation of resources (A_s) and thus impact the boundary conditions described in Bylund's (2020) marginal analysis.

Entrepreneurial Judgment and a Firm's Internal Organization

Although the concept of judgment offers important insights for explaining a firm's existence and boundaries (e.g., Bylund 2016, 2020), Foss, Foss, and Klein's (2007) theory of economic organization argues that an entrepreneur's judgment can also impact a firm's internal organization. According to Foss, Foss, and Klein. (2007), judgment involves a leadership role in which a firm's human and capital assets are organized under the direction and control of the entrepreneur. This internal organization involves judgments surrounding the design of a firm's formal and informal communication structures and system of rewards that would secure the control and support of a firm's employees (Cowen and Parker 1997; Foss, Foss, and Klein 2007; Rigtering, Weitzel, and Muehlfeld 2019). This internal organization has been historically described by an authoritarian decision-making structure in which the entrepreneurial leader has direct control and influence over their employees' behaviors (Bylund 2020; Coase 1937; Cowen and Parker 1997). Yet, due to the increasing complexity of markets, modern organizations

face increasing pressures to organize this internal decision-making structure in ways that best respond to these external changes (Cowen and Parker 1997; Foss, Foss, and Klein 2007; Rigtering, Weitzel, and Muehlfeld 2019). This internal organization involves delegating a leader's decision-making authority to all levels of the firm's decision-making hierarchy (see also Cowen and Parker 1997; Foss, Foss, and Klein 2007; Rigtering et al 2019).

In response to this decentralization of decision tasks, Foss, Foss, and Klein (2007) argue that an entrepreneur's leadership role involves organizing the firm's decision-making authority such that employees are engaged in a "derived judgment" that acts on behalf of the entrepreneur's original judgments (see also Cowen and Parker 1997; Rigtering, Weitzel, and Muehlfeld 2019; Witt, 1998, 1999). An entrepreneur's original judgment, or simply judgment, refers to the "formation and execution of a business idea" (Foss, Foss, and Klein 2007, 1896), such as a firm's mission or goals. A derived judgment involves "utiliz[ing] the knowledge best known to" the employee (Foss, Foss, and Klein 2007, 1894) in responding "to new circumstances or situations that may be unknown to the employer." (Foss, Foss, and Klein 2007, 1894). These derived judgments draw on the employee's knowledge to develop "productive" activities that advance an entrepreneur's mission or judgment (Foss, Foss, and Klein 2007; see also Rigtering, Weitzel, and Muehlfeld 2019). Yet since this derived judgment is predicated on giving employees greater discretionary powers, employees can also draw on their knowledge to advance their personal goals (Foss, Foss, and Klein 2007). An employee's derived judgment can thereby result in "unproductive" activities that undermine the entrepreneur's mission or judgment (Foss, Foss, and Klein 2007). Hence, the challenge surrounding an entrepreneur's judgment is in organizing a decision-making structure in which employees utilize their knowledge to serve the entrepreneur's judgment and not their own (see also Cowen and Parker 1997; Witt, 1998).

For instance, Ulrich Witt's (1998, 1999) concept of entrepreneurial leadership reflects this type of judgment. According to Witt (1998), entrepreneurial leadership involves a judgment surrounding an entrepreneur's "imaginations" about the future prospects of a firm's business concept or mission. Such imaginations or judgments are realized by inducing the support of the firm's employees (Witt

1998). As in Foss, Foss, and Klein (2007), this support operates within a decentralized organizational setting. With this decentralization, there are limits on a leader's bounded rationality that preclude the leader from directly controlling and influencing their employees' behavior. Witt (1998) argues that this decentralization requires a leadership that appeals to the social and psychological aspects of a firm's internal organization (Witt 1998). The social aspects of a firm's internal organization involve instituting a social consensus among employees in order to realize an entrepreneur's imaginations. In addition, while financial remuneration is important to inducing the support of employees, Witt (1998) argues that leadership must also appeal to an employee's psychological motivations. This may involve relating an entrepreneur's imaginations to an employee's personal values. Hence, according to Witt (1998), judgments involve a leadership role of instituting a social and psychological decision-making process that seeks the support of employees. Such judgments are central to an entrepreneur's leadership, because they allow the entrepreneurial leader to utilize their employees' decentralized knowledge experiences in fulfilling the entrepreneur's imaginations or judgments (see also Cowen and Parker, 1997).

IV. ENTREPRENEURIAL EMPOWERMENT

Yet although the organization of a firm's decentralized experiences is implicit to the internal Hayekian knowledge problem, an entrepreneur's leadership role in empowering employees to address this knowledge problem remains largely undeveloped in theories of economic organization (Cowen and Parker 1997; Foss, Foss, and Klein 2007; Witt 1998). A concept of entrepreneurial empowerment (EE) is proposed. EE appeals to a judgment in which the decision task of the entrepreneurial leader is to institute "structural and psychological" forms of empowerment that encourage employees to draw on their knowledge of the particulars to realize an entrepreneur's mission or judgment. Specifically, since judgment involves an ownership stake, the entrepreneurial leader is defined as an individual who has an ownership stake in their business and/or holds a senior leadership position in the organization (i.e., CEO). With this ownership stake, the entrepreneurial leader has the incentive and decision-making power to institute structural and

psychological forms of empowerment practices on their employees (see also Cowen and Parker 1997; Witt 1998).

With this characterization of the entrepreneurial leader, EE approaches the internal Hayek knowledge problem not by viewing the entrepreneur as a central planner, but as a collaborator who cultivates a greater sense of autonomy in their employees. In particular, although giving employees greater decision-making autonomy can offer a means to utilize their knowledge of the particulars (e.g., Foss, Foss, and Klein 2007), this decentralization is only a partial solution. As Hayek (1945) described,

We must solve it by *some form of decentralization*. But this answers only part of our problem. We need decentralization because only thus can we ensure that the knowledge of the particular circumstances of time and place will be promptly used. But the “*man on the spot*” cannot decide solely on the basis of his limited but intimate knowledge of the facts of his immediate surroundings. There still remains the problem of *communicating* to him such further information as he needs to fit his decisions into the whole pattern of changes of the larger economic system. (524–25; author’s emphasis)

In response to this form of decentralization (see also Cowen and Parker 1997; Foss, Foss, and Klein 2007; Rigtering, Weitzel, and Muehlfeld 2019), EE offers a structural and psychological source of empowerment that addresses the “communicative” and “man on the spot” requirements of Hayek’s decentralization. Structural empowerment consists of the communicative systems of a firm’s internal organization. This communication involves the provision of “opportunities, information and support” that empower employees to realize their latent skills and experiences (Spreitzer 2008, 55). Psychological empowerment involves an appeal to the “man on the spot’s” intrinsic motivations. These intrinsic motivations involve cultivating a psychological state “in which an individual wishes and feels able to shape his or her work role and context” (Spreitzer 1995, 1444).

The structural and psychological components of EE, it is argued, solve the internal Hayekian knowledge problem by empowering employees to utilize their knowledge of the particulars in addressing the unique or circumstantial challenges of their job tasks. Yet, as employee can utilize their knowledge for their own benefit

(Foss, Foss, and Klein 2007), the solution to the internal Hayekian knowledge problem also requires that the entrepreneurial leader empower employees to utilize their knowledge of particulars in ways that realize an entrepreneur's mission or judgment. In addition to examining the individual components of the EE concepts—structural empowerment and psychological empowerment—this study argues that an examination of their joint impact can empower employees to utilize their knowledge of the particulars to advance an entrepreneur's mission or judgment. In this fashion, the concept of EE offers a distinct firm-level solution to the internal Hayekian problem. To develop this argument, each of the structural and psychological components of the EE concept are first examined.

Structural Empowerment (SE)

Based on a social structural perspective, structural empowerment (SE) is defined by a "sharing power (i.e., formal authority or control over organizational resources (Conger and Kanungo 1988)) through the delegation of responsibility throughout the organizational chain of command" (Spreitzer 2008, 55). To institute this redistribution of authority, structural empowerment (SE) consists of practices that make efforts to develop in employees a greater: 1) autonomy to develop goals, a system of rewards, work procedures, and responsibilities in regard to employees' assigned job tasks, 2) transparency of information where strategic goals and direction are communicated in ways relevant to their job performance, and 3) training practices that build their knowledge, skill, and ability to perform their assigned job tasks well (Spreitzer 2008).

The goal of the empowered entrepreneur is to develop SE practices that provide employees with the "opportunity, information, support, and resources" (Spreitzer 2008 55) to fully realize their latent skills and experiences in addressing the changing circumstances of their job (Spreitzer 2008). An entrepreneur can provide opportunities by developing resource forums and centers that promote the sharing of ideas among employees (Hargadon and Sutton 1997). For instance, in their study of the product design firm IDEO, Hargadon and Suttons (1997) pointed out that IDEO created a resource forum that pooled the design solutions used in previous projects. Engineers could draw on this pool to solve the

current problems they faced in their job tasks. Entrepreneurs can also provide financial support to promote the development of new product ideas. Companies such as Google have provided millions in seed capital to help commercialize products developed by their project teams (Gagne and Deci 2013). Lastly, the entrepreneur can promote a sharing of information, for example through their organization's policies on risk taking. Jeff Bezos and Elon Musk recognize that their organizations' success rests on a policy that failure is a necessary part of the innovation process. This policy of failure can promote greater risk taking in employees and thus promote a greater willingness to experiment with new ideas (Henao-Zapata and Peirò 2018).

By providing employees with such opportunities, information, and support, SE practices offer an important communicative structure that demonstrates an entrepreneur's commitment to an employee's autonomy (see also Argyris 1998). Leaders need to communicate to their employees that they have made a personal commitment to empowering them (see also Argyris 1998; Bendahan et al. 2015). Developing this commitment is important, because leaders can engage in empowerment practices with politically correct motivations and not with a genuine commitment in promoting the autonomy of their employees (Argyris 1998). A communicative structure involving the provision of opportunities, information, and support signals a leader's commitment to empowering their employees and thus assures employees that their leader's empowerment efforts are genuine.

Exhibiting this genuine commitment, this communicative structure increases an employee's willingness to exploit their knowledge of the particulars in that it reduces an employee's fear that the use of their knowledge of the particulars will threaten the power and authority of the entrepreneur. For instance, studies find that leaders face difficulties giving up their positions of authority (Argyris 1998; Bendahan et al. 2015). This difficulty arises, because authority offers leaders the power to influence their subordinates in ways that advance a leader's self-interest (Bendahan et al. 2015; Lubit 2002; Schyns and Schilling 2013). Hence, by providing employees the opportunities, information, and support to more fully utilize their knowledge, an entrepreneur not only demonstrates a clear commitment to relinquishing their control over their employees

but also places trust in employees to utilize their knowledge of the particulars to advance their job task. This commitment as a result reduces the entrepreneur's potential for retaliatory action and reduces an employee's fear that utilizing their knowledge of particulars will threaten the entrepreneur's authority (e.g. Bendahan et al. 2015; Lubit 2002; Schyns and Schilling 2013). This is consistent with empowerment studies that find that employees are hesitant to engage in greater decision-making autonomy because they fear the repercussions this may have for a leader's authority (Spreitzer 1996). Therefore, in order to empower employees, their leaders must give their commitment to this, because in its absence employees do not want to be held accountable for decisions that are not supported by their leaders. SE offers a communicative structure that alleviates such concerns, because the provision of opportunities, information and support signals an entrepreneur's commitment to empowering employees to make decisions.

Proposition 1: SE involving the provision of opportunities, information, and support positively influences an employee to utilize their knowledge of the particulars in their job tasks.

Psychological Empowerment (PE)

Unlike the communicative aspects of SE, PE appeals to an empowerment that is experienced by the employees themselves (see also Spreitzer 2008). Psychological empowerment (PE) is defined as a "psychological state of a subordinate [i.e., employee] perceiving four dimensions of meaningfulness, competence self-determination and impact, which is affected by empowering behaviours of the supervisor [i.e., entrepreneur]" (Lee and Koh 2001, 686). Each of these psychological states is described as follows:

Meaning involves a fit between the needs of one's work role and one's beliefs, values and behaviours....Competence refers to self-efficacy specific to one's work, or a belief in one's capability to perform work activities with skill....Self-determination is a sense of choice in initiating and regulating one's actions....It reflects a sense of autonomy or choice over the initiation and continuation of work behaviour and processes (e.g., making decisions about work methods, pace, and effort). Impact is the degree to which one can influence strategic, administrative, or operating outcomes at work. (Spreitzer 2008, 57)

Studies have found that meaning, competence, self-determination, and impact increase an employer's ability to achieve the objectives and challenges of their job (Lee and Koh 2001; Spreitzer 2008). For instance, an employee who finds meaning in their job develops greater motivation in fulfilling the requirements of their job (Henao-Zapata and Peirò 2018). Furthermore, competence or self-efficacy has been associated with improvements in an employee's productivity (Henao-Zapata and Peirò 2018; Spreitzer 1996, 2008). Self-determination in which the employee takes on greater personal responsibilities in defining their job goals has been found to improve an employee's goal achievement (Eva et al. 2019, Henao-Zapata and Peirò 2018; Spreitzer 1996, 2008). Lastly, impact has been found to increase an employee's feelings of control over the workplace and promotes a greater commitment to pursuing organizational goals (Spreitzer 2008).

Since leadership is central to the empowerment of employees (Argyris 1998; Lee and 2001; Spreitzer 2008), the goal of the entrepreneur is to PE an employees' sense of meaning, competence, self-determination, and impact in their jobs. This PE involves developing a vision that provides a sense of meaning and purpose to employees. For instance, Truett Cathy, the founder of the immensely successful Chick-fil-A restaurants, developed a vision based on Christian principles in which the glorification of God involved the provision of "second to none" service to his customers. This vision deeply resonated with the personal beliefs of his employees, and this greater sense of meaning and purpose has resulted in a commitment to service that is unrivalled in the food industry (Kruse 2015; Petrone 2014). An entrepreneur can promote self-determination by offering their employees the freedom to explore their personal talents and skills. Companies such as 3M and Google allow their employees to use up to 15 percent of their time to pursue projects of their own choice (Govindarajan and Srinivas 2013). Empowerment studies find that this self-determination can increase an employee's sense of competence that they have the skills and experiences necessary to complete their jobs (Spreitzer 2008). Lastly, entrepreneurs who believe that their products and services have an impact on society can encourage their employees to develop job tasks in realizing such impacts. For instance, Toyota has made a commitment to producing cars that meet its environmental

sustainability goals. To realize such goals, Toyota's engineering specialists developed a solvent to clean the robots used in painting vehicle bumpers. The use of hazardous chemicals and water was significantly reduced as well as the number of defective bumpers.³

By engaging in such forms of PE, entrepreneurs will not only develop a greater sense of meaning, competence, self-determination, and impact in their employees, but employees will also be more likely to utilize their knowledge of the particulars in ways not recognized by Hayek (1945). Hayek (1945) writes that "every individual has some advantage over all others in that he possesses unique information of which beneficial use might be made, but of which use can be made only if the decisions depending on it are left to him or are made with his active cooperation" (521–22). Austrians (Cowen and Parker 1997; Hayek 1945; Kirzner 1979, Foss, Foss, and Klein 2007) would argue that an extrinsic reward system would incentivize employees to engage in this active cooperation, to utilize their knowledge of the particulars. Yet various studies find that financial or extrinsic rewards (i.e., wage rates) can undermine an individual's intrinsic motivation (Argyris 1998; Judge et al. 2010; Kuvaas et al. 2017; Ryan and Deci 2000). Judge et al. (2010, 158) explains

that extrinsic rewards are ultimately demotivating and dissatisfying to individuals. Because they have a negative effect on intrinsic interest in a task or job, extrinsic motivations tend to undermine perceived autonomy.... Moreover, goals for financial success have been argued to undermine well-being, because these goals represent a controlled orientation that interferes with the fulfillment of more enduring needs such as self-acceptance or affiliation.

Since PE involves an appeal to an employee's intrinsic motivations, the use of financial, or extrinsic, rewards cannot psychologically motivate an employee to utilize their knowledge of the particulars. The reason is that financial rewards incentivize employees on the basis of achieving performance goals set by their supervisors and not on the basis of goals that advance their personal long-term growth (Judge et al. 2010). Stated differently, extrinsic, financial rewards only incentivize employees to take on initiatives when financial rewards are increased (Argyris 1998; Judge et al. 2010) and thus tend to

³ See <https://www.toyota.com/usa/environment/>.

undermine an individual's autonomy to fulfill their high-order needs. In contrast to financial rewards, studies have shown that intrinsic motivations are positively related to greater levels of employee persistence and proactiveness (Judge et al. 2010; Kuvaas et al. 2017) and a greater ability to internalize the specific conditions of their work climate (Gagne and Deci 2005). These findings suggest that a PE employee will utilize their knowledge of the particulars in their job task because this knowledge offers them a greater sense of control in their work and the ability to proactively shape their tasks. This increased autonomy allows them to perform their jobs in ways that advance their personal goals and identities. Hence, PE increases an employee's use of their knowledge of the particulars by empowering them to realize their higher-order or self-actualizing needs in ways that cannot be realized by the extrinsic financial rewards of Hayek (1945; see also Spreitzer 2008).

Proposition 2: a PE involving the development of a sense of meaning, competence, self-determination, and impact increases employees' intrinsic motivation to utilize their knowledge of the particulars in their job tasks.

V. DECENTRALIZATION BENEFITS OF ENTREPRENEURIAL EMPOWERMENT

By utilizing an employee's knowledge of the particulars, SE and PE not only offer a means to solve the internal Hayekian knowledge problem, but also offer opportunities to exploit the benefits of decentralization. Austrian economists recognize that decentralization introduces intrafirm learning opportunities that increase an organization's ability to adapt to and innovate in changing market conditions (Elert and Henrekson 2019; Foss, Foss, and Klein 2007; Henao-Zapata and Peirò 2018; Rigtering, Weitzel, and Muehlfeld 2019). These benefits of decentralization stem from the greater autonomy given to an organization's subunits to engage in local problem-solving behaviors (Cowen and Parker 1997; Kollman, Miller, and Page 2000; Richardson et al. 2002; Rigtering, Weitzel, and Muehlfeld 2019). For instance, by offering employees greater autonomy in their decision-making, employees can draw on their day to day operational experiences to adapt to the problems faced in their job tasks. Furthermore, this greater autonomy comes with a

lower resistance to change and thus increases employees' freedom to pursue new ideas and innovations (Henao-Zapata and Peirò 2018; Rigtering, Weitzel, and Muehlfeld 2019). Hence, as structural and psychological empowerment offer employees a greater decision autonomy, these different forms of empowerment enable employees to exploit the adaptive and innovative benefits of decentralization.

Yet since the task of the entrepreneurial leader is to empower employees in ways that realize the entrepreneur's mission or judgment, the structural and psychological components of EE cannot individually accomplish this leadership task. This is because the structural and psychological components operate at different levels of analysis in which neither considers the influences of the other (Siebert, Silver, and Randolph 2004). Empowerment studies have argued that a joint consideration of these components is needed because a firm's internal communication structure has been shown to influence an employee psychological motivations (Siebert, Silver, and Randolph 2004). In the context of entrepreneurial leadership, a leader who jointly leverages the structural and psychological components of the EE concept not only empowers their employees to exploit the adaptive and innovative benefits of decentralization but can also empower employees to utilize their knowledge of particulars to advance an entrepreneur's judgment or mission.

Bounded Autonomy

To explain this aspect of entrepreneurial leadership, EE exploits the adaptive benefits of decentralization by leveraging the relationship between a firm's "bounded autonomy" and an employee's "self-determination" (Siebert, Silver, and Randolph 2004; Spreitzer 2008). Bounded autonomy refers to the structural empowerment aspects of EE and is defined by "organizational structures and practices that encourage autonomous action, including the development of a clear vision, and clarity regarding goals, work procedures, and areas of responsibility" (Seibert, Silver, and Randolph 2004, 333; see also Spreitzer 1996). In the Austrian economics literature, this bounded autonomy has been described as a "nested hierarchy" (Foss, Foss, and Klein 2007, 1897) or "polyarchy" (Cowen and Parker 1997, 59). Common to these descriptions is that the firm is organized around a number of decentralized/partially autonomous units, each of which

is delegated a decision authority that operates within the context and constraints of a greater decision-making authority (Cowen and Parker 1997; Foss, Foss, and Klein 2007; Witt 1998).

Although a firm's bounded autonomy is organized in a fashion similar to other studies or economic organization (Cowen and Parker 1997; Foss, Foss, and Klein 2007; Rigtering, Weitzel, and Muehlfeld 2019; Witt, 1998), this study adds that the depth / width of this bounded autonomy is influenced by limits in entrepreneurs' judgment. Due to limits on bounded rationality, transaction cost explanations would argue that an entrepreneur's judgment faces increasing costs in coordinating an increasing specialization of tasks within its decision hierarchy. The depth of an organization's bounded autonomy is influenced by the extent to which these specialized tasks can be vertically integrated within the bounded autonomy (see also Bylund, 2016). With limits on an entrepreneur's judgement, entrepreneurial leaders face increasing difficulties in understanding the specialized decisions made by lower or deeper members of its decision hierarchy because these employees' tasks are highly specialized to the unique circumstances and challenges of their local work environment. As result, an entrepreneur's efforts to institute a bounded autonomy are subject to diminishing returns that limit the depth of specialized activities that can be integrated into this bounded autonomy. Furthermore, limits in an entrepreneur's judgment also impact the width or scope of activities in a firm's bounded autonomy. The width or scope of a bounded autonomy consists of the diversity of specialized activities in a firm's decision hierarchy. Bylund (2016) argues that this diversity of specialized activities can exhibit interdependencies or synergies that are difficult for the entrepreneur to know. The width of scope of these experimented activities is thus limited by an entrepreneur's ability to discover the interdependencies or synergies among them. Hence, as an entrepreneur's EE is impacted by their judgment, an entrepreneur's efforts to institute a bounded autonomy are subject to cognitive limitations that restrict the depth / width of this bounded autonomy.

By recognizing such limits in an entrepreneur's structural empowerment efforts, a bounded autonomy is distinct from other decentralized forms of organization, such as Oliver E. Williamson's (1975) M-form organizational structure. Williamson's (1975) M-form organization emphasizes a highly diversified knowledge structure

in which units are unrelated to the activities of others. With this autonomy, employees in each unit compete against others for corporate funds. While such competition offers a means to replicate the external market process, unit goals are prioritized over corporate goals (Cowen and Parker 1997). In contrast, the units in a bounded autonomy are guided and directed by the limits of an entrepreneur's judgment. In order to conserve an entrepreneur's bounded rationality, the entrepreneurial leader institutes a bounded autonomy in which the depth and width of unit activities are limited to those activities that are related to an entrepreneur's mission or judgment. Hence, consistent with Cowen and Parker (1997), limits in an entrepreneur's judgment result in a bounded autonomy in which the depth / width of a unit's activities exhibit a coherence or relatedness that is absent from Williamson's M-form structure.

Bounded Autonomy and Self-Determination

Under a bounded autonomy, employees engage in a self-determination that exploits the adaptive benefits of decentralization in ways consistent with an entrepreneur's mission or judgment. Specifically, bounded autonomy reduces the ambiguities surrounding the expectations and scope of an employee's decision-making authority (Spreitzer 1996). This reduction of ambiguity is important, because "if people do not know the extent of their authority and what is expected of them, they will hesitate to act (i.e. lack of self-determination) and thus feel unable to make a difference (i.e. lack impact)" (Spreitzer 1996, 487). This reduction of ambiguity offers employees a clear delineation of their decision-making authority, promoting a greater sense of self-determination that avoids the resistance to change typically found in organizational bureaucracies (Spreitzer 1996) by giving employees greater authority to draw on their knowledge of the particulars to address the challenges and expectations of their jobs. Studies find that such self-determination can increase an employee's resiliency in their decision-making and promote a greater resourcefulness to seek local resources and experiences (Henao-Zapata and Peirò 2018; Spreitzer 1996). This resiliency and resourcefulness suggest that employees will draw on their knowledge of the particulars to gain an intimate understanding of their local work conditions.

This localized understanding in turn increases an employee's ability to adapt to the changing circumstances of their job. Unlike the unproductive behaviours described by Foss et al. (2007), an employee's self-determination is constrained by a firm's bounded autonomy. That is, a bounded autonomy offers a clear delineation of an employee's delegated decision-making authority in which their self-determination is limited to their local conditions.

For instance, the joint influences of bounded autonomy and self-determination can be explained in terms of Koch Industries' "market-based management" strategy (Cowen and Parker 1996; see also Klein 1996). This management strategy involves communicating the corporate mission to each business unit and delegating a decision-making authority to each unit in support of this corporate mission. This delegated decision-making offers a type of "bounded autonomy" in which units are given discretion to determine unit-level missions that guide their employees to make daily decisions that support the corporate mission (Cowen and Parker 1997). With respect to the self-determinative aspects of psychological empowerment, Koch's market-based management also involves adopting a matrix management structure in which employees report to the senior managers of different units. With this matrix management, employees are "ultimately accountable to the consumer of the firm's products and to the firm's mission rather than to some specific individual known as a "boss" (Cowen and Parker 1997, 50–51). While we cannot directly assess the psychological aspects of an employee's self-determination, Koch's matrix structure offers a means for employees to assert their self-determination in responding to the needs of the firm's customers. Furthermore, Koch Industries also offers compensation that rewards employees for developing products and services that advance the firm's mission. These resources provide opportunities that affirm an employee's self-determination. As a result, by jointly leveraging the bounded autonomous and self-determinative aspects of EE, these empowerment practices enable employees to exploit the adaptive benefits of decentralization in ways that also advance the entrepreneur's mission or judgment (see also Cowen and Parker 1997).

Proposition 3: entrepreneurial empowerment involving a SE practice of bounded autonomy positively influences an employee's

PE by developing a self-determination that adapts to an entrepreneur's mission or judgments.

Broad Sharing of Information and Competence

In addition, EE offers a structural and psychological empowerment that exploits the decentralized benefits of innovation. Specifically, a SE policy involving a broad sharing of information can psychologically empower employees to institute new ideas in their job tasks by promoting a sense of competence. This broad sharing of information involves sharing an organization's strategy to all members of its decision hierarchy (Spreitzer 1996). For instance, Kellogg's CEO, Carlos Gutierrez, instituted a value-added strategy that differentiated Kellogg's products from an increasingly competitive cereal market. Mr. Gutierrez was successful in implementing this value-added strategy, because he was able to relate this differentiation strategy to the specific job demands and goals of every employee in his organization (Boyle 2004). Empowerment studies find that this broad sharing of information increases an employee's sense of meaning and purpose, because employees can see the "big picture" and gain a better understanding of how their job fits within their organization's broader vision or mission (Siebert, Silver, and Randolph 2004; Spreitzer 1996). Furthermore, studies find that this greater sense of meaning and purpose can increase an employee's feelings of competence (Gagne and Deci 2005; Siebert, Silver, and Randolph 2004; Spreitzer 1996). This competence is important to instituting new ideas and innovations, because it increases employees' perception that their implemented ideas will succeed and will have a meaningful impact on their organization's future goals (Gagne and Deci 2005; Henao-Zapata and Peirò 2018; Seibert et al. 2004).

As entrepreneurs are often admired for their vision, an EE involving a broad sharing of information psychologically empowers an employee's competence to engage in innovations that realize this vision. Specifically, a broad sharing of an entrepreneur's vision offers employees a greater context in which to understand how their knowledge of the particulars can help realize an entrepreneur's vision. This communication is important, because an employee who fails to understand how their knowledge of the particulars fits

within the entrepreneur's vision can create coordination problems (Witt 1998). Each employee will seek to utilize their knowledge of the particulars without considering their impact on others. As a result, such autonomous decision-making introduces conflicts in implementing innovations that would realize an entrepreneur's vision (see also Foss, Foss, and Klein 2007). In order to avoid such conflicts, employees must develop a shared understanding of the entrepreneur's vision (Spreitzer 1996; Witt 1998). This shared understanding is consistent with the communicative aspects of Hayek's (1945) decentralization which posits that an employee's knowledge of the particulars need to be understood within the context of a larger information system (see also Witt 1998). However, since Hayek (1945) relies on the price system to communicate the goals of this larger system, he does not consider those communication systems that appeal to an employee's intrinsic motivations. EE addresses this shortcoming. An EE involving the broad sharing of an entrepreneur's vision with all members of their organization (such as Gutierrez's strategy at Kellogg's), psychologically empowers an employee's feeling of competence. This empowerment occurs, because a shared understanding aligns an employee's knowledge of the particulars with their entrepreneur's vision (Witt 1998) and thus increases an employee's feelings of competence—that their knowledge of the particulars can have an impact in realizing the entrepreneur's vision. This competence energizes an employee's creativity to utilize their knowledge of particulars to develop new ideas in their jobs.

For instance, 3M started a new product that started with a complaint in their customer care division. The employee sought a solution by conducting his own research and then recontacted the customer to see if the solution was a suitable remedy (Rubinson 2009). This is consistent with studies' finding that empowered employees tend to engage in greater creativity and innovation (Gagne and Deci 2005; Henao-Zapata and Peiró 2018; Kuvaas et al. 2017; Zhang and Bartol 2010). However, unlike these studies, which focus on the psychological aspects of empowerment, this study argues that a broad sharing of entrepreneur's visions empowers employees competence to utilize their knowledge of the particulars to discover novel solutions that would realize an entrepreneur's vision. This is consistent with J. P. C. Rigtering, G. U. Weitzel, and K. Muehlfeld

(2019), who argue that lower-level managers and employees draw on their domain-specific knowledge to implement new business ideas. Hence, they argue, the task of corporate leaders is to “contextually frame” these lower-level innovative efforts to align with the corporate vision. This study argues that a SE practice of broad information sharing and its influence on an employee’s competence can contribute to a contextual framing in which the entrepreneur is able to exploit the decentralized benefits of innovation.

Proposition 4: entrepreneurial empowerment involving a SE practice of broad information sharing positively influences an employee’s PE by developing their competence to innovate in activities that advance an entrepreneur’s mission or judgment.

DISCUSSIONS AND CONCLUSIONS

As entrepreneurs’ success is often attributed to their ability to identify unnoticed market opportunities, the discovery of opportunities within a firm’s internal organization remains largely under-examined in Austrian economics and mainstream entrepreneurship research (see Alvarez, Barney, and Anderson 2013). Yet leadership research has widely recognized that employees are central to an organization’s success and thus the task of a leader is to empower their employees to realize this success. This distinction was recognized earlier by Chester I. Barnard’s (1938) seminal work on leadership. He argued that the quintessential task of a leader is to communicate and empower a common purpose to their employees. A concept of entrepreneurial empowerment has been developed in which opportunities for employee empowerment are used to solve an internal Hayekian knowledge problem. In this solution to the internal Hayekian problem, the entrepreneur’s task as a leader is to structurally and psychological empower their employees in order to unleash their latent potential. EE’s structural and psychological dimensions motivate employees to use their knowledge of the particulars to discover the adaptive and innovative benefits of decentralization. EE has three implications for Austrian economics and entrepreneurship research.

First, according to Austrian economic explanations, adaptation and innovation are largely explained in terms of market-level

processes. As result, an organization's adaptive and innovative processes remain generally understood as a "black box" (Kirzner 2019). EE offers a direction for Austrian economists to "open" up this black box in which a venture's ability to adapt and innovate is attributed to the structural and psychological aspects of the EE concept. EE introduces an adaptive and innovative process that is endogenous to an employee's knowledge of the particulars. This endogenous process underscores that although the success of a venture is widely attributed to its entrepreneur's inspirational ideas, a venture's success can also come from those involved in executing these ideas. This is because employees have the most familiar understandings of the challenges surrounding the implementation of their leader's ideas. More broadly speaking, this knowledge of the particulars offers employees a unique position to adapt and innovate activities that reconcile the challenges of their job tasks with the ideas and goals of the entrepreneur. The utilization of this knowledge opens up the black box of Austrian entrepreneurship, in which an organization's adaptation and innovation is explained by a decentralized process that cannot be centralized by an entrepreneur's leadership (see also Shane 2000).

More fundamentally, EE's utilization of an employee's knowledge of the particulars offers a decentralization that appeals to Mises's open-ended view of entrepreneurship (Salerno 1993). By solving the internal Hayekian problem, EE offers an economic calculation in which the employee's knowledge of the particulars is used in determining an allocation of internal resources that meets the needs of a firm's consumers. Since consumer needs will continually evolve, EE's solution to the internal Hayekian problem offers an economic calculation that evolves with the changing needs of the consumer. Consistent with Mises, EE will result in an economic calculation in which this changing allocation of internal resources may not converge toward an equilibrium outcome (see also Salerno 1993). EE thereby offers an alternative to alert explanations of the market process.

Second and relatedly, since the concept of EE has a distinctly proactive orientation, EE introduces a "deliberateness" not found in alert entrepreneurial explanations (Kirzner 2019). Unlike with Kirzner (2019), the structural and psychological dimensions of EE involve a search that requires a deliberate commitment of an

entrepreneur's time and efforts. Structural empowerment requires that the entrepreneur institute practices that provide employees the opportunity, information and support to realize their latent potential. As these policies involve redistributing the power in an organization's hierarchy, supervisory members of this hierarchy are likely to resist such policies, because they undermine their position of power and influence (Argyris 1998; Bendahan et al. 2015). Hence, an entrepreneur who institutes such SE policies is likely to expend considerable time and effort in overcoming this resistance.⁴ With this commitment of effort, EE introduces a deliberateness that is particularly relevant to addressing recent debates surrounding an entrepreneur's claims to the wealth creation process. For instance, a NY representative, Alexandria Ocasio-Cortez, argued that wealthy business owners did not deserve their wealth because they "sat on couches, while thousands were paid modern day slave wages." EE argues that due to the commitment of resources required by the structural and psychological empowerment process, entrepreneurs have a direct claim to such wealth. Stated differently, EE argues for a Friedman system of ethics (see also Bylund 2019, Kirzner 2019) that justifies an entrepreneur's wealth on the basis that they have contributed resources in empowering their factors of production (i.e., employees). Hence unlike Kirzner's (2019) rejection of Friedman's system of ethics, EE argues that entrepreneurs have a legitimate moral claim to the wealth creation process, because this wealth creation is based on an entrepreneur developing a deliberate relationship to their factors of productions (see also Bylund 2016).

Third and lastly, the concept of EE offers a type of judgment that is important to explaining a firm's internal organization. EE appeals to a judgment that is not principally concerned with developing an internal allocation of resources that reduces the transactions cost of the market. Instead, EE appeals to a judgment in which the task of the entrepreneurial leader is to organize a firm's internal decision-making structure in which employees utilize their knowledge of particulars

⁴ A reviewer has noted that once an entrepreneur has instituted such structural and psychological forms of empowerment this resistance to change will not likely persist. That is, the ultimate goal of EE is to empower employees to act in accordance to an entrepreneur's mission or judgment. Hence little resistance by employees will be expected once the individual and joint efforts of EE are instituted by the entrepreneur.

to advance their entrepreneur's judgment. In addition, entrepreneurs are often viewed as visionary leaders. But entrepreneurs have a leadership responsibility to not only articulate a compelling vision to their employees, but also to empower their employees to realize this vision. The concept of EE offers a type of judgement in realizing entrepreneurial visions. This judgment involves efforts to organize a firm's internal communication structure and to provide appropriate psychological motivations that empower employees to realize their entrepreneur's vision. The implication of this wealth creation process is that EE favors a more creative explanation of entrepreneurial opportunities (Alvarez and Busenitz 2001) in which opportunities are brought into existence by the empowerment efforts of the entrepreneur. EE, however, does not imply a rejection of the price arbitrage opportunities of alert entrepreneurship, because alert entrepreneurship and EE are concerned with solving different knowledge problems. EE emphasizes a distinctly firm-level approach to solving the internal Hayekian problem. This firm-level approach argues that an employee's inherent potential cannot be fully realized by the external price system. In contrast, alertness emphasizes the discovery of price arbitrage opportunities at the market level and therefore relies on prices that cannot reveal an employee's latent potential. An important direction for Austrian economics research is to examine both forms of entrepreneurship, because they address different aspects of the entrepreneurial discovery process.

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A DYNAMIC MODEL OF ENTREPRENEURIAL OPPORTUNITY: INTEGRATING KIRZNER'S AND MISES'S APPROACHES TO ENTREPRENEURIAL ACTION

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JEL CLASSIFICATION: B53, D80, L26

ABSTRACT: We highlight the important role that time plays in conceptualizations of opportunity in entrepreneurship research. Through two longitudinal case studies, we introduce a more dynamic understanding of opportunities than portrayed by current theorizing, which tends to emphasize "opportunity discovery." By adopting

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a dynamic temporal perspective, we integrate Kirzner's and Mises's approaches to entrepreneurial action to generate novel insights about how entrepreneurs view opportunities as initial opportunity beliefs, how these beliefs change over time, and how these changes help inform scholarly research of opportunities. We argue that taking the role of time into consideration opens up new questions related to opportunity and the dynamics of its development.

INTRODUCTION

The pursuit of opportunities continues to be a central component of entrepreneurship research (Shane and Venkataraman 2000; McMullen and Kier 2016; McMullen and Shepherd 2006; Scheaf et al. 2019) despite its increasingly controversial role (Davidsson 2015; Foss and Klein 2018; Wood 2017). Entrepreneurial opportunities are “those situations in which new goods, services, raw materials or organizing methods can be offered and sold at more than their costs of production” (Shane and Venkataraman 2000, 220). Important in this definition is the notion that there is some correspondence between the willingness of the market to pay a certain price and the ability of the entrepreneur to provide a good or service at a certain cost. Such correspondence can be challenging if a considerable amount of time passes between the entrepreneur's inspiration, ideation, and implementation such that the situation inspiring the entrepreneur to generate an idea and convince various stakeholders to support its implementation no longer characterizes the entrepreneur's environment by the time implementation is complete.

The simple fact that it takes time to introduce a new good or service and that conditions may change in the meantime is often overlooked by opportunity-based entrepreneurship research. Instead, research into opportunities has historically adopted a static view of opportunities (Dimov 2011; McMullen and Dimov 2013; Scheaf et al. 2019), possibly because research on the topic has been primarily conceptual and focused on opportunity discovery as the stimulus for entrepreneurial action, while the relatively little empirical work has emphasized the discovery and evaluation of opportunities as opposed to their development. As a result, opportunities have been called “theoretically exciting but empirically elusive” (Dimov 2011, 57). Yet there have been scholars who have called for greater examination of the relationship between time and opportunity.

For instance, Jeremy C. Short and colleagues (2010) suggested that researchers “must understand the temporal dynamics of opportunities” to comprehend the opportunity process. Cameron M. Ford (2002) argued that including greater considerations of time could help researchers reflect the experiences of entrepreneurs, and Dima Dimov (2007) noted that acknowledging time could help researchers to understand the continuous development and evolution of opportunities.

Despite such exhortations, the field has remained reluctant to address the theoretical development and empirical consideration of these temporal issues in the study of opportunity. Although there has been increased attention to timing effects (Choi, Lévesque, and Shepherd 2008; Wood, Bakker, and Fisher, *in press*), the relationship between the passage of (clock) time and entrepreneurship is limited (Lévesque and Stephan 2020). As a result, we have limited knowledge about how time affects opportunity development despite remarkable achievements concerning other aspects of the entrepreneurial process made possible by Austrian economics, most notably the work of Israel M. Kirzner, Ludwig von Mises, and Ludwig M. Lachmann. However, the field is a long way from fully integrating these approaches into the more recent discussions of the important dynamic and temporal aspects that stem from the pursuit of opportunities over time.

The purpose of this article is to explore the opportunity development process inductively using two longitudinal case studies. In doing so, the role of time in the notion of entrepreneurial opportunity is explored and emphasized. As “clock time” (Crossan et al. 2005) passes, the *potential* for the underlying conditions that comprise the opportunity also change. These conditions involve the willingness and ability of the entrepreneur and other potential producers to supply a product solution at a given price as well as the willingness and ability for enough customers to pay an offering price high enough to justify the entrepreneur’s effort. Passage of clock time introduces the potential for changes in the willingness and the ability of both producers and consumers as a function of changes in data and expectations about the external world (i.e., expectancies about resource availability and prices of inputs, substitutes, and competing solutions as well as current institutional conditions such as social, technological, economic, environmental,

and political) and the internal world (i.e., values of various states, such as preferences, desires, motives, needs, wants, beliefs, norms, and attitudes). However, as the passage of clock time does not necessarily imply a change to the underlying conditions, our focus is on a subjective perspective of time, as this is likely to impact the opportunity beliefs of the entrepreneur. We do acknowledge that clock and subjective time may intersect, as the more clock time passes, the more the *potential* for conditions to change grows, regardless of whether or not conditions actually change. Subjectively, this means that expectations of changing conditions for an opportunity may also change such that opportunities' attractiveness can wax or wane over time based on the entrepreneur's expectations.

This affects how research questions are framed and the theoretical perspectives used to answer these questions. Indeed, only longitudinal methods can effectively capture temporal dynamics of opportunities. Case studies offer the ability to shed light on the context and process of opportunity development, thereby allowing for theory development (Siggelkow 2007). Thus, new ventures that focus on the entrepreneurs' initial opportunity beliefs and subsequent metamorphosis of those beliefs to reflect the role of time throughout the opportunity process have been selected. In doing so, we capture how initial opportunity beliefs may be revised and reshaped (as a function of changes in data and their effect on expectancy-value considerations), thereby contributing to scholarly understanding of the process aspects of opportunity development. The influence of Austrian economics on these discussions is also highlighted with the hope of further clarifying these roots of mainstream entrepreneurship scholarship.

The results of the case studies suggest that an entrepreneurial opportunity in dynamic environments is conceptualized as an initial belief about the viability of a potential product solution idea for a market problem. Yet as time transpires between formation of the initial opportunity belief and the development of the capability to exploit the opportunity, the environmental conditions that originally presented the situation to advance one's desires change. Resources must be acquired, investors must be identified and persuaded to invest, relationships with suppliers and distributors must be established and nurtured, and customers must be made aware of the product offering (Zott and Huy 2007). Each of these

processes can be expected to take time, which muddies the view of the opportunity (McMullen 2015). Despite its conspicuous absence in the academic literature, this dynamic notion of opportunity is regularly communicated in practice and captured by the expression “The window of opportunity is closing.”

This study’s findings and analysis make three main contributions to the literature possible. The first is the elucidation of the implications of the role of time in opportunity research. This helps to move the current ideas in opportunity research toward a more dynamic view, serves to identify the appropriate boundary conditions for a static versus dynamic temporal view of opportunities, and reveals important questions that researchers have yet to consider. For instance, we illustrate that some views, such as Kirzner’s widely adopted view of entrepreneurial alertness and opportunity discovery, may be better suited for explaining the development of initial opportunity beliefs that can be identified and exploited instantaneously (such as arbitrage situations) than for explaining instances that are characterized by a large temporal gap between belief and action. When timing and process are more central to theorizing, we propose that Mises’s understanding of the entrepreneur as a coordinator of resources and bearer of uncertainty may offer a more promising lens through which to examine entrepreneurial action.

Second, by examining the fluid nature of opportunities, this study identifies factors that affect the temporal understanding of opportunities. For instance, understanding initial opportunity beliefs and how they change over time helps illuminate central but poorly understood concepts and dynamics in entrepreneurship research, such as how entrepreneurs navigate uncertainty about demand and supply caused by changes in data over time and how they form new local knowledge of time and place. By explicating the role of these key concepts, this article provides a more robust framework for understanding entrepreneurial action, one that recognizes the value of learning and iterative processes as part of the pursuit of opportunity.

Third, microlevel areas of Austrian economics that may be viewed as contrasting begin to be reconciled. Of particular relevance are the two distinct conceptualizations of the entrepreneur as either an alert

arbitrageur (Kirznerian entrepreneur) or an uncertainty-bearing producer (Misesian entrepreneur). The Misesian view may be reconcilable with the Kirznerian view at the macro level (Kirzner 1982) based on the fundamental assumptions about the functioning of economic systems, but at the micro level significant differences exist between the two approaches. Once the subject of the theory shifts from the economy in which the entrepreneur serves as an agent of the system to a particular entrepreneur who is the system of interest, these differences present serious consequences for theorizing about the entrepreneurial process and the role of uncertainty, ignorance, and knowledge within this process. Because most entrepreneurial action scenarios are unlikely to involve instances in which entrepreneurial opportunities are both recognized and exploited instantaneously, as Kirzner's (1973) theory of entrepreneurial alertness would suggest, we propose that the Misesian entrepreneur, as the coordinator of resources and bearer of uncertainty, may provide a more robust description of the entrepreneurial exploitation process as it occurs behaviorally. At the same time, Kirzner's theory about ignorance and alertness provides valuable insights into how and why certain individuals discover opportunities while others do not. These microlevel implications and their appropriate boundary conditions are highlighted, and a model where both lines of thought are integrated is proposed. Consequently, a more robust model of entrepreneurial action is presented, one that can capitalize on both entrepreneurial alertness as well as the temporal aspects associated with marshalling resources.

RESEARCH METHOD

RESEARCH SETTING

Two longitudinal case studies were conducted to inductively describe and analyze the role of time in the opportunity pursuit process. To track these changes, especially as they relate to the underlying "how" and "why" questions, a qualitative approach was adopted. Qualitative methods allowed for the capture of the rich array of experiences that firms go through during start-up and subsequent development (Van de Ven and Engleman 2004). This method is especially useful for sharpening existing theory

(Siggelkow 2007), because it enables investigation of the associated temporal processes (Gehman et al. 2018; Lévesque and Stephan 2020; Pettigrew, Woodman, and Cameron 2001) through which the opportunity, beliefs, and context influencing them change over time (Van de Ven and Huber 1995).

Both “real-time” longitudinal data to follow the goings-on in the firm and examined historical secondary data to understand the previous behavior of the firm were collected. This allowed for an extraction of theory from the ground up (Eisenhardt 1989; Eisenhardt and Graebner 2007; Yin 1984). The approach ensured that sampling was not based on the “success” of a firm and the feasibility of the opportunity. This was important, as definitions of opportunity are oftentimes only able to be determined *ex post* (Dimov 2011; Singh 2012). The first firm, a high-tech company named KeepOut,¹ was directly followed from its nascent stage before its inception, through its subsequent development and build-up of capital, until its eventual demise after approximately three years in business. The second firm, Buyonline, and their experiences with international e-commerce were under direct study for approximately one year as they underwent market expansion and organizational changes. Secondary data stretched back to the firm’s origin and the previous experience of the founder.

Using a theoretical sampling approach (Eisenhardt and Graebner 2007), the cases were selected because of their potential to offer unique insights into how new ventures pursue opportunities and how these opportunities change over time. Both firms fit the criteria of being (1) new ventures that were (2) operating in dynamic environments. Compared to firms in less dynamic environments, firms pursuing opportunities in more dynamic markets will likely experience greater change in the opportunities they pursue (Rindova and Kotha 2001). In addition to their theoretical relevance, both firms allowed extensive access to all company information. Because accessing archived documents, observing participant meetings, and interviewing all staff members was essential to gain a thorough understanding of the goings-on at the firm, full access was vital. Further, because the firms were in the nascent stages of development, it was not possible to infer any perceived viability

¹ Firm and employee names have been altered for anonymity.

of the original opportunities (i.e., they were not selected on the basis of the dependent variable). This is noteworthy because many studies of opportunities focus on “successful” firms, with opportunities defined retrospectively and tautologically (i.e., opportunities become inextricably linked with *ex ante* beliefs that prove true *ex post* through action) (Singh 2012). Hypothesis-testing research frequently espouses random sampling, but Pettigrew (1990) takes a more pragmatic approach for the employment of multiple longitudinal case studies, suggesting that intensive access to informants that can help to ensure that quality data is available. This method may be superior to other sample selection criteria. Access to data on a multitude of features (both external and internal) was of utmost importance for full comprehension of the central issues and also contributed to the choice of a limited number of cases that allowed for immersion by the research team (Siggelkow 2007).

The primary sources of evidence for both cases were a combination of personal interviews and secondary data. Interviews were semistructured in nature and took place between once a week and once every third week. Interviews generally lasted between forty-five minutes and two hours, with some lasting up to three hours. Interviews covered details of individuals (e.g., education, work tasks) as well as strategic issues (e.g., product development internal relationships and contact with other stakeholders). Over twenty interviews per case were carried out over a period of twelve months for Buyonline and over thirty months for KeepOut.

Open-ended questions were used to ascertain past and present beliefs, behaviors, and knowledge. We paid attention to both the prior knowledge of the individuals as well as the emerging knowledge levels via direct questions about contact with the market (customers, suppliers, industry reports, educational upgrading) and other staff members. Care was taken not to ask questions about specific constructs or other theoretical concepts that might constitute investigator bias. Most employees were interviewed more than once. All interviews, with the exception of one, were recorded.

Multiple informants holding different positions in the firms were interviewed. This only allowed for the collection of data on the executive perspective on knowledge and corporate actions, as well as the lower-level operational employees’ views of the daily

goings-on. In the case of KeepOut, all employees were conversed with, including administrative staff and venture capitalists. With Buyonline, all top management team members were interviewed at least once, as were the majority of other employees until we reached saturation. This multiposition perspective is an advantage when researching emerging firms (Van de Ven and Huber 1995).

The personal interviews were complemented with secondary data including all board of director meeting minutes, earlier business plans, customer comments on products, published material about the firms, and financial and industry data. For KeepOut, a detailed diary that the founders kept concerning what took place in real time and their perceptions about their strategic actions was available. This provided us with the daily occurrences at the firm, the specific comments that the founders had received from different stakeholders, and their thoughts about the future. Buyonline kept extensive formal meeting minutes and renewed their business plans with greater frequency. Taken together, these sources provided detailed accounts of changes and when they took place.

We also engaged in participant observation. We kept a record of our impressions and feelings following observations at lunches, meetings, product demonstrations, and informal contact. Through comparison between interviews, other corporate documents, and the participant observations, the data received from single interviews was triangulated with other sources of evidence to ensure validity (Flick 1999; Miles and Huberman 1994). Additionally, the time span between interviews allowed for the measurement of changes to opportunities, information possessed, and corporate actions. Table 1 provides a brief overview of both firms and the interviews conducted.

Table 1. Overview of the Two Firms Under Study

	KeepOut	Buyonline
Number of employees (max.)	10	29
Venture capital funding received	Approx. \$1.7 million	Approx. \$2.5 million
Total number of interviews	22	24
Number of interviews with top management members	9	9
Total number of people formally interviewed	10	18
Hours of interview data (approx.)	26	23
Time under direct observation	30 months	12 months
Main sources of data	Founder diary Personal interviews Observation Meeting minutes Business plans (revised)	Personal interviews Observation Meeting minutes Business plans (revised)

DATA ANALYSIS

During data collection, field notes and interviews were transcribed. The most important issues that were perceived to be taking place were noted but no hypotheses about the phenomena *a priori* were made, allowing the theory to emerge from the empirical data (Glaser and Strauss 1967; Locke 2001). Interviews were analyzed following the guidelines of Matthew B. Miles and A. Michael Huberman (1994). Triangulation was used, whereby corroborating evidence to support main facts was gathered. In many cases, this involved speaking to multiple people within each firm to capture their shared view on new developments. In some cases, this new information was made tangible and visible in revised business plans or was present in meeting minutes or diary entries. Few contradicting accounts appeared. For those few circumstances where information appeared to be contradictory, follow-up questions via email or telephone were posed to gain clarity into the matter. The lower-level employees provided greater in-depth accounts of their contact with customers, technologists, or their daily activities

on a number of occasions. Although some employees, at some stages, wondered aloud about the directions of the firms and the reasons for certain firm-level actions, all employees tended to agree about whether and when actions should be carried out. This was important for mapping out the opportunity and how it changed over time. Crosscase analysis provided us with the opportunity to compare our emerging conceptual categories and their properties with other data, iteratively refining impressions accordingly.

Once all data collection had occurred, extensive case studies were written about both of the firms. These were done following a temporal structure similar to an events-based case study (Van de Ven and Engleman 2004). The independent case studies were then compared to understand conceptual and temporal differences (such as changes in industry, changes in market demand, and new resource acquisition that encapsulated the opportunity dynamism at each firm over time). Given the significant amount of data collected, this process was both time consuming and informative. However, this method of analysis is typical for inductive research and where first- and second-order themes (Gioia, Corley, and Hamilton 2013) are examined over time. The writing and analyzing process took over one year, as new thoughts and the importance of earlier inputs and observations were constantly reviewed in relation to the cases. These findings were then presented to parts of the management teams to confirm that our analyses reflected the actual situations and experiences of the firms. Two researchers competent in this field read through the case studies and analyses for clarity. The (condensed) case studies were also used as teaching cases, which provided further feedback on the original findings as well as the understandability of the material. This further honed the ideas and implications of the respective cases.

TWO TALES OF OPPORTUNITIES SOUGHT AND FOUND

INITIAL OPPORTUNITY BELIEFS

KeepOut

KeepOut was founded by Andreas Gerber and Mathias Falcon on the basis of their shock in the number of theft of laptops. Statistics

that underlied these opportunity beliefs included that over 4 million PCs under three years of age were in use in Sweden, of which approximately 55 percent were used by companies. Computers were quite expensive in Sweden at that stage, selling for between \$1,500 and \$2,000. As a result, purchasing new computers was a large investment. In the founders' view, the current remedies focused on compensating the victim rather than preventing the crime. Andreas argued that "The best deterrent to a thief is to ensure that he has absolutely no use of stealing the PC."

Gerber and Falcon felt that there was need for a product that would prevent anyone from being able to use a stolen computer, thereby decreasing the demand for stolen computers and consequently the desire to steal them. This became the entrepreneurs' initial opportunity belief. KeepOut identified potential customers who would use a large number of computers, such as management consultants and high-technology firms. The new venture began to collect market data, such as working with insurance companies to investigate the potential market size based on the total number of computers sold and thefts reported. KeepOut also began to examine competing or substitute products and expected growth patterns for the industry. They then approached potential customers to ascertain whether there was genuine interest in the potential product. Customers indicated that they believed the idea had huge potential. Because the data that is saved on the hard drives at work is imperative for a company's success, customers suggested that KeepOut's product would help them solve their problems with theft.

The KeepOut founders explained their idea for how the solution would work. An electrical pulse sent from the security card, their product, would destroy the functionality of these devices. By destroying these components, the computer would no longer be operational, the software and hardware could not be used, and any information or proprietary knowledge would be eliminated. The customers and KeepOut agreed that a \$150 price tag would be reasonable for such a product.

Support of the initial opportunity belief was gained via external sources. For instance, KeepOut successfully competed in local business plan competitions. They were awarded a \$10,000 grant from a local technology development organization. This

recognition led to further positive reinforcement (in the form of venture capitalist investment) about the attractiveness of the initial opportunity belief. As one of the venture capitalists noted, "We evaluate this project as having great potential....We believe in the market, we believe that this team can bring this product to market, and we believe that they have the right business concept." Thus, KeepOut's initial opportunity belief, held by the entrepreneurial team members and supported by external sources, resulted in the decision to engage in further entrepreneurial action. The entrepreneurs felt that significant earnings were possible and estimated future sales and profits on the basis of this target price.

Buyonline

Buyonline's founder, Freddy Tengblad, developed his initial opportunity belief while working in the software industry. His initial belief was based on the inefficiency of traditional software distribution through CDs packed in cardboard boxes and shipped around the world using several means of transportation and warehousing. If there was a flaw with the product or a canceled order, then the whole process would be carried out again in reverse order. He also thought about his own customers and the long delivery times for software. On this initial gist, he began examining industry reports and found that electronic downloads had growing demand and that software sales were increasing at 15 percent per year. What held these two factors back was the lack of an efficient method to manage both the purchase and the distribution of this software. Tengblad's vision was to develop a way to pay for and receive the software electronically, thereby eliminating the challenges of traditional distribution. If possible, he would be able not only to transfer software between relatively close areas such as Latvia and Sweden, but also throughout the world.

This initial opportunity belief became the central business focus of Buyonline—to deliver software electronically via an online store. Tengblad clarified: "The original plan was to be a software reseller, a portal for software, a one-stop shop where you would find all kinds of software. And the only place you would need in order to buy software, wherever you lived, and whatever software you were looking for."

To examine this belief further, he began to collect market data. Freddy contacted experienced managers in the software industry whom he trusted to discuss the potential of Buyonline. They were quite positive about the idea and agreed to become part of the firm. Additionally, industry reports at that time were extremely positive about future industry growth. Freddy's experience meant that he also had some contacts in the venture capital industry. His contacts expressed eagerness for the opportunity that Freddy had identified; this further strengthened his belief in the viability of the initial opportunity.

CHALLENGES TO OPPORTUNITY BELIEFS

KeepOut

Based upon their initial opportunity beliefs, KeepOut began to work on overcoming some of the technological complexities presented in their product. The two founders acquired the assistance of two German engineers who were to take care of product development and essentially all technical aspects. To finance product development, they acquired venture capital investment worth \$400,000. The technology behind the product was still somewhat hazy at this point, although the idea and potential functionality were clear. The engineers, Loftus and Vittle, went through a stringent trial and error process, both alone and in connection with a university professor in Germany. This process was much slower than expected. Even though it took six months to develop the device's specifications, the more detailed work with the sensor and software communication aspects still needed to be done. This required further testing and research before a prototype could be built. Gerber and Falcon were not pleased with the amount of time involved in developing this first functioning product. Gerber stated, "I threatened them....I asked them how they were going to be able to live without a salary for the six months extra than they had taken to finish the product...until they could fulfill their part of the contract." Gerber was acutely aware of the potential impact of the unexpected delays. The issue of the length of time in product development led Gerber to begin to question the firm's ability to develop the product they had hoped to. The German engineers had

finally built a model that they felt had top-of-the-line technology, but they still needed to develop a satisfactory product suitable for the specified \$150 price tag.

While this product development was going on, Gerber and Falcon engaged in growing the firm in preparation for the eventual sales of the final product. For example, they sought out a further capital injection, this time for \$1,300,000. With this money, they arranged for a new, larger office space. An external CEO with extensive management and sales experience was also hired. Other lower-level employees were hired and marketing features (such as a logo and website) were developed to prepare the firm to sell the product effectively and provide structure for the firm. The team also began to examine the potential distribution routes for the final product once it was ready.

One year after the meetings with customers where the target sales price of \$150 was established, the team had a working prototype that met that price demand. The plan was to produce ten thousand units. When the firm approached the potential customers again about sales, the reception was more tepid. One of the founders, Andreas Gerber, explained: "Our customers told us that computers are less expensive now compared to when we got started, and desktops are disappearing from the market more and more....If we were able to develop the first product quicker, like in a matter of one year, then there would still have been a large market for us. We simply didn't invest enough money in getting this product out there in time." This change in customers' willingness to pay a certain price fundamentally challenged the initial opportunity beliefs of the KeepOut team.

Buyonline

The initial challenge for Buyonline was to develop a workable interface that met their aspirations to be a global player that would be able to accept payments online and to deliver the software electronically. This involved figuring out a way to provide a technical solution that would solve delivery and quality issues. From a delivery standpoint, Buyonline needed to guarantee that customers had the flexibility to determine how they were going

to pay for their software. This incorporated different currencies, methods of payment, and timing of payments. Independent market research had suggested that customers from outside of the USA, which Buyonline also intended on targeting, refused to pay for something that they had yet to receive. This created a challenge, as the eventual technological solution would need to be able to send out deactivated software that only became active once payment was received. Receiving payment afterward would also alleviate the hassle of dealing with downloads that could not be completed or difficulties in internet connections. Because they could seriously derail customer interest in the (at that time) unproven method of downloading software via an e-store, these challenges presented a problem for Tengblad.

At first, Tengblad sought to circumvent these issues by finding existing software that would carry out these functions. The search ended fruitlessly, as Tengblad realized that a system that had met all these requirements and also had the capacity to hold at least 120,000 titles did not seem to exist. Realizing the importance of the technological solution, Tengblad decided to work closely with a group of programmers in Latvia. He had given them very clear instructions: “Make sure that this system you build is as secure and good as any other out there, hopefully better.” After a number of prototypes, the final product, known as Buyonline OS, could accept payment in thirty-four currencies, navigate six languages, provide antifraud reporting, and allow for multiple mediums of payment, including telephone, fax, and online methods. The technology could recognize which country the visitor was in and set the parameters accordingly—a notable innovation at that time. This technology was possible because Buyonline had secured \$2.5 million from two experienced venture capitalist firms. This enabled the programmers to develop the platform in a period of approximately four months at a cost of roughly \$2.3 million.

As Buyonline’s platform was approaching completion, Tengblad built industry relationships. For example, Tengblad attended a conference for the Association of Software Publishers where approximately nine hundred firms were present. At this conference a number of major firms volunteered to be the first publishers to provide titles for Buyonline’s e-store. The publishers felt that this business idea was fantastic and was going to revolutionize the

industry, and they wanted to be part of it. Tengblad was able to learn more about the industry and publishers' demands. Through these relationships, the Buyonline store had over twenty thousand software titles representing 170 publishers and customers in twenty-two countries. Sales initially grew but soon stagnated or decreased after a few months of operations. To drive more consumer traffic to their site, Buyonline experimented with marketing programs, advertising, etc., but nothing seemed to work. Tengblad realized that developing a brand name for end customers from scratch for a new global company was tougher than imagined: "It became too expensive for us to build our own brand with the end customer across the entire world." Many competing firms were failing at the very same endeavor with much larger marketing budgets. Tengblad began to question his initial opportunity belief.

UPDATED OPPORTUNITY BELIEFS

KeepOut

The length of time to develop KeepOut's product, changes in customers' willingness to pay the previously established price, and industry structural changes (such as expectations for network computer memory, increase in number of laptops, and price reduction for PCs), opportunity beliefs were seemingly altered. Based on these challenges to the perceived future feasibility of the opportunity being pursued, the main investors in KeepOut had a change of heart. This sentiment was shared by a member of the KeepOut board and the main venture capitalists, who realized that there was no longer the needed sales volume to make this opportunity feasible. The belief in the opportunity had been updated in a negative way; it was essentially determined that there was no longer a market for the KeepOut product.

Buyonline

At the same time that sales began to stagnate, companies interested in selling software online started contacting Buyonline, looking to buy or license the Buyonline operating system. However, Tengblad recognized that selling proprietary technology to competitors could

mean the end of Buyonline if the new firms were more successful at marketing. This prompted Buyonline to develop its operating system so that it could build and host stores for other companies as well as their own. Buyonline then went back to the companies that wanted to license or buy Buyonline OS and offered them a new service as part of a new strategy. Tengblad clarified:

We could now go back to these companies and say, "No, you cannot license our technology, but we have something better for you. We can build a store that looks like yours, and we will run it for you. And everybody will think they buy from you, but everything will happen here. And then we'll send you part of the profits....And you don't even have to pay a license fee; all you have to do is to take care of your own marketing."

Demand for these stores grew faster than the sales from the regular Buyonline download store. Companies that had already spent funds on developing brand names for themselves also prospered in their own countries. They were able to tailor their sites and marketing to match their home cultures. Buyonline avoided having to spend extra money on something that did not seem profitable (marketing to the general population) as well as having to adapt all their marketing for each country. The Buyonline OS already allowed for language and currency differences and thus did not pose a major obstacle to international expansion. The initial belief in the opportunity had been updated; Tengblad recognized that there was potentially a more lucrative market than before in leveraging his existing technology to solve customer problems in a different industry sector (business to business).

Buyonline also began to examine other markets into which to expand the business, such as e-books, music, film, games, and similar downloadable transactions. They attended conferences and used their contact network to keep informed about these new possible opportunities. Buyonline decided to invest small amounts in these new opportunities in anticipation of the moment when the "window of opportunity" might open. In doing so, Buyonline could learn more about each new market, update its technology, and position itself for the future. As a result of the updated opportunity beliefs, the managers at Buyonline realized that some opportunities were not as viable as others and sought a more lucrative opportunity.

DISCUSSION

The purpose of this study was to illustrate the role of time (as relevant changes in data) in the opportunity development process, from initial opportunity beliefs to challenges to those beliefs, to the updating of the beliefs (Shepherd, McMullen, and Jennings 2007). In the process, this empirical work revealed a more dynamic view of opportunity, one that takes into consideration potential changes to opportunity beliefs over time. This view of changing beliefs over time is not commonly found in the entrepreneurship literature (with a few exceptions), although some of the underlying logic is consistent with Austrian economics. By employing a well-established definition of opportunity (e.g., Shane and Venkataraman 2000) and examining how the initial opportunity beliefs of two entrepreneurial firms developed, were challenged, and were updated over a prolonged period of time as a function of market and industry dynamics, a framework is provided that is suitable for understanding how time affects opportunities. Table 2 below captures and shows the nature of these changes over time.

Table 2. Key Episodes in the Two Cases Over Time

	KeepOut	Buyonline
Initial opportunity belief	Computer security device	Online software retailer
Reason for belief	Personal experience Initial market feedback Industry trends and statistics Business plan competitions Financial investment	Personal industry experience Initial market feedback Industry organization support Venture capital investment
Challenges to initial opportunity belief	Length of time to develop product Reduction of prices in industry Development of alternate products (laptops, network memory storage) Changes in consumers' willingness to pay	Stagnating sales levels Competitors' performance Functionality of product
Updated opportunity beliefs	Insufficient market size Not worth further financial investment Liquidate company instead of further opportunity pursuit	More lucrative alternate market based on existing technology Ability of (new) customer to pay Leveraged own skills while allowing new clients to leverage their own Potential for further opportunity beliefs in tangential sectors
"Final" opportunity belief	No longer a feasible opportunity	Become a platform for other software retailers

THE FORMATION OF INITIAL OPPORTUNITY BELIEFS

The beginning of the pursuit of opportunities stems from initial opportunity beliefs (Shepherd, McMullen, and Jennings 2007), and an opportunity's perceived attractiveness (Wood and Williams 2014; Scheaf et al. 2019). These beliefs are interpretations of states, processes, events, and courses of action—interpretations that are considered to be true (McMullen and Shepherd 2006). They coalesce into a belief about the potential value and viability of an opportunity (Grégoire, Shepherd, and Lambert 2010; Scheaf et al. 2019; Wood and Williams

2014). In both of the cases examined, the initial opportunity beliefs were based on the combination of personal experience and market data that suggested that there was a potential market need. For KeepOut, that market data was based on the surprisingly high number of computer thefts. For Buyonline, the data concerned the ineffectiveness of current software distribution methods. These beliefs led the entrepreneurs to pursue the opportunities. Moreover, as they began to discuss their beliefs with others, both received additional data that supported the notion that they had discovered an opportunity worth pursuing.

In many ways, these observations fit well with current entrepreneurship models concerning the formation of opportunity beliefs and their connection to entrepreneurial action. For instance, Jeffery S. McMullen and Dean A. Shepherd (2006) note that the concomitant existence of knowledge about a potential opportunity and the motivation on behalf of the entrepreneur to act are constituents from which initial beliefs are formed. Others have argued that knowledge about a potential opportunity stems from changes in the environment (Davidsson 2015; Eckhardt and Shane 2003). This is also in line with Kirzner's (1973) explanation of entrepreneurial alertness, wherein certain individuals identify opportunities that others do not. Alertness is based on the existence of prior knowledge and latent desire. Indeed, these findings resonate well with this area of the literature.

What is noteworthy with these models is that they primarily concern the "discovery" of the original opportunity. In other words, these theories focus on the development of the initial opportunity beliefs. For instance, in Kirzner's view, the primary function of the entrepreneur is to discover price misalignments.² However, the opportunity beliefs that are initially formed are always successfully pursued (Rothbard 1985). This is illustrated in Kirzner's (1973) famous quote that "Entrepreneurship does not consist of grasping a ten-dollar bill which one has already discovered to be resting in

² Although Klein (2008) suggests that Kirzner's treatment of opportunity was metaphorical and not to be treated literally, Kirzner's view (literal or not) has been extremely influential in the development of the field of entrepreneurship and empirical research on opportunity discovery. Thus, despite Klein's argument, we feel it useful to treat Kirzner's views as being literal. One possible cause for the (mis)interpretation may be due to a change in the unit of analysis. Kirzner's arguments are presented logically at the macro level (price system), whereas entrepreneurship researchers have tended to apply them behaviorally at the micro level (individual entrepreneur).

one's hand; it consists in realizing that it is in one's hand and that it is available for the grasping." Inspired by Kirzner's ideas, much entrepreneurship research has focused on entrepreneurs' *initial* opportunity discovery and individual differences that lead some people but not others to discover these opportunities (e.g., Gaglio and Katz 2001; Korsgaard et al. 2016; McCaffrey 2014; Shane 2000; Tang, Kacmar, and Busenitz 2012).³

The data that precedes initial action is at least partially exogenous (Wood, McKelvie, and Haynie 2014). As a consequence, the data about possible market need is viewed subjectively (Barreto 2012; McMullen and Shepherd 2006) and subject to individuation (Scheaf et al. 2019; Wood et al. 2014; Wood and Williams 2014). This implies that the exogenous data is interpreted by evaluating the potential attractiveness of the opportunity through the unique lens of the entrepreneurs' own skills, abilities, experiences, and personal circumstances. To that end, it is an individual judgment that determines whether and how action is ultimately taken (Dimov 2007; Foss and Klein 2018; Grégoire et al. 2010; Wood and McKelvie, 2015). Because the data represents "the possibility for entrepreneurial action" (Kirzner 2009), it creates the stimulus that prompts entrepreneurial action (McMullen 2015), such that the entrepreneurs in both cases believed that they faced opportunities worth pursuing.

CHALLENGES IN OPPORTUNITY BELIEFS

With the passage of time, changes in data began to challenge the initial opportunity beliefs of both KeepOut and Buyonline. For KeepOut, the length of time involved in developing their product allowed conditions in both the external and internal environments to change. Doubt arose about their ability to produce a working product at the price needed to satisfy market demands. As KeepOut

³ Kirzner (2009) has emphatically denied that his theory of entrepreneurial alertness has anything to say about individual entrepreneurial behavior, explaining that it is intended only to explain the functioning of the economy given the existence of ignorance (Kirzner 1973) and to a lesser degree uncertainty (Kirzner 1982). He further notes that opportunities in his framework should be interpreted as analytical devices meant to highlight that the price system is encumbered by imperfect knowledge (Kirzner 1999), preventing applicability of Joan Robinson's (1969) approach to decision-making (Kirzner 1979).

invested in learning how to reduce the costs of their production capability (in line with their opportunity belief), market demand changed in unexpected ways, such that other challenges to the opportunity beliefs began to develop. For Buyonline, the challenges to initial opportunity beliefs took the form of competitive challenges. Sales levels began to plateau, as similar firms began pursuing the same opportunity, albeit with a slightly different solution.

Challenges to initial opportunity beliefs are consistent with ideas on learning in entrepreneurship. There is research to suggest that entrepreneurial learning is mainly experiential in nature (Corbett 2005; Politis 2005); entrepreneurs generate new knowledge based on their experience with the entrepreneurial situation. In the case of KeepOut and Buyonline, this learning was only able to take place through entrepreneurial action. This corresponds well with Dimov's (2011, 64) statement that "initial assumptions and intuition about future possibilities are gradually replaced with experiential facts and juxtaposition of circumstances."

Further, this view on the opportunity process is similar to Ludwig von Mises's view of entrepreneurship. For Mises, the entrepreneur is a coordinator of resources and bearer of uncertainty. He suggests that the "entrepreneurial function consists in determining the employment of the factors of production. The entrepreneur is the man who dedicates them to specific purposes" (1966, 290–91). Thus, Mises's entrepreneur is a producer. Importantly, Mises's (1966, 290) entrepreneur "deals with the uncertain conditions of the future. His success or failure depends on the correctness of his anticipation of the future." Thus, Mises's entrepreneur combines resources on the basis of beliefs about future demands, such that the exploitation of an opportunity starts with the initial opportunity belief, correct or incorrect. The issue of production also incorporates (subjective) time, which introduces the element of uncertainty into the entrepreneurial process, because (a) the preferences of customers may change between when the entrepreneur buys the resources to when s/he sells them (Kirzner 1973, 86; McMullen 2015); and (b) the entrepreneur may fail to produce the product at the estimated cost (Mises 1966, 343; McMullen and Kier 2016). It is these core components that are central in the Scott Shane and S. Venkataraman (2000) definition as well but are rarely addressed in empirical opportunity work.

Following in the footsteps of Mises, Lachmann (1976, 127–28), argues that all human action essentially happens over time, with time being the one dimension in which changes to beliefs take place: “As soon as we permit time to elapse, we must permit knowledge to change, and knowledge cannot be regarded as a function of anything else.” Because many entrepreneurial situations are unlikely to have instances where initial opportunity beliefs are likely to be developed and confirmed instantaneously, the Misesian entrepreneur, as the coordinator of resources and bearer of uncertainty, may provide a more robust description of entrepreneurial action, capturing the dynamic view of opportunity observed in the behavioral accounts of KeepOut and Buyonline.

Once the producing entrepreneur believes that there is an opportunity, s/he brings together resources to try to take advantage of this opportunity. In this process, the entrepreneur must take into consideration expectations for the *potential* of the underlying conditions to change before the end result is produced, such as whether resources can be better used for pursuing some alternative opportunity which may not have existed when entrepreneurial action began. Consequently, new data may lead the entrepreneur to reevaluate the initial assessment of the potential profitability of the opportunity because of changes in the availability, accessibility, or prices of resources used in production or because of actual or anticipated changes in consumer preferences induced by social, technological, economic, environmental, or political factors (McMullen 2015).

UPDATED OPPORTUNITY BELIEFS

Because of learning that took place over time, both KeepOut and Buyonline updated their opportunity beliefs. For KeepOut, the updating involved a conclusion that the opportunity was no longer worth pursuing. This suggests that what was originally understood to be an opportunity in the case of KeepOut may never have been an opportunity in the first place. As they manifested, circumstances showed that revenues did not exceed costs to achieve the profit needed to meet the criteria involved in the Shane and Venkataraman definition. Scholars (e.g., Gras et al. 2020; Kirzner 1999; Ramaglou and Tsang 2016) would therefore likely suggest that the KeepOut case was not based on an opportunity at all. This same assessment

likely holds for the case of Buyonline. The initial opportunity belief was not viable, but instead of obstinate persistence or abandonment, leadership chose to pivot, updating their opportunity beliefs to offer the software platform to competing firms and thus to pursue a more promising opportunity belief.

Opportunity research emphasizing the importance of learning (Cope 2005; Corbett 2005; Dimov 2007), pivoting (Fisher 2012; Grimes 2018; Navis and Glynn 2010), or happening (Dimov 2011)—i.e., maintaining a vision while experimenting to find the best path (Kirtley and O'Mahony 2020; Reis 2011)—suggests a process in which opportunity beliefs are continually updated (Shepherd, McMullen, and Jennings 2007; McMullen 2015). For instance, McMullen and Dimov (2013, 1491) note:

the importance of the time variable to entrepreneurship is more than a matter of logic, it can also pose structural challenges. As information is acquired over time, individuals organize it into useful knowledge structures. If new information is consistent with these knowledge structures, it is likely to augment or extend them, but in some instances, new information demands a reorganizing of existing knowledge structures in order for the information system to realize the full benefit of the new information.

It can be difficult, however, to reconcile this understanding of entrepreneurial action with a seemingly static notion of “opportunity,” a term often used to refer to both the stimulus and outcome of the entrepreneurial process (McMullen, 2015). As a result, a paradoxical deterministic portrait of entrepreneurship often emerges in which a beginning and end are discussed as if they were determined, while the journey in between is described as a discovery process requiring learning and pivoting (McMullen 2015). However, the case data for this study suggests that McMullen and Dimov's description may only apply to forward-looking beliefs about opportunity, not to backward-looking beliefs about whether the original opportunity belief was properly justified as an opportunity in the first place.

Initial opportunity beliefs deemed promising in early temporal stages are oftentimes still considered “opportunities” even after changing conditions have caused them to lose their luster, even by the entrepreneurs who chose to either replace them through pivoting away from or abandoning them entirely. This suggests that

entrepreneurs may conceive of opportunities both in ideal states when looking backward and actual states when looking forward, such that the initial belief continues to be considered an opportunity in the hypothetical, idealistic sense, regardless of subsequent facts. Consider KeepOut, for example. If we assume that KeepOut could have executed the original opportunity as intended under different circumstances, then a counterfactual belief remains justified that profit could have been realized. The actual failure to realize the ideal outcome can then be (and was) explained away as a matter of ineffective execution owing to unforeseen and unforeseeable circumstances, such that justification of the original opportunity belief was neither negated nor even undermined. Instead, the belief was relegated to a specific set of circumstances that the firm did not happen to encounter. Consequently, the original opportunity belief can be equated to a specific objective and a specific plan based on specific assumptions believed to make sense when formulated regardless of whether subsequent events reveal them as valid or not.

IMPLICATIONS

WHY DOES TIME MATTER TO OPPORTUNITY BELIEFS?

Entrepreneurship scholars have noted that there needs to be greater concern for the role of time in entrepreneurship (Lévesque and Stephan 2020; Wood, Bakker, and Fisher, in press) and opportunity research (Dimov 2011; Short et al. 2010). Time affects our understanding of opportunities for a number of reasons. First, the supply and demand conditions that give rise to opportunity initially may change over time. For example, the KeepOut entrepreneurs clearly felt that there was an opportunity worth pursuing. Had they been able to produce and sell the security device at \$150 when they first perceived the opportunity, customers would likely have bought it according to data on customer preferences at that time. This situation would therefore have been defined and treated as an opportunity. Had they asked whether customers would pay \$150 for the security device two years later, those surveyed would more likely have answered no. This temporal boundary condition would most likely have gone unnoticed had KeepOut had a readymade product at the time that they received customer feedback or if they had had the ability to buy

the product off the shelf somewhere. Thus, if KeepOut's pursuit of the opportunity had been more arbitrage based (i.e., instantaneous), then their initial opportunity beliefs would likely have been more justified.

Second, both Kirzner (1973) and Mises (1966) noted that time and the pursuit of opportunities are inherently related, yet there remains a gap in understanding how an entrepreneur's time perspective will determine his evaluation, and subsequent pursuit, of opportunities from an Austrian economics lens. When discussing the evaluation of an opportunity, both Kirzner and Mises limit the role of time, and timing within the context of the production of the proposed good or service. This overlooks the decision-making process by which an entrepreneur determines the (subjective) forecasted time, which is then used to evaluate the opportunity. In turn, future pursuits of opportunities are assumed to be viewed through the lens of prior knowledge (Kirzner 1973; Mises 1966). This conceptualization of the opportunity evaluation process overlooks an important time concept: time perspective. Despite the development of empirical measures for identifying the attractiveness of an opportunity (Scheaf et al. 2019) and the development of a time-based theory of entrepreneurial action (Wood, Bakker, and Fisher, in press), opportunities continue to be evaluated without taking an entrepreneur's time perspective into account. This necessarily introduces noise when trying to identify the determinants of an entrepreneur's forecasted time needed to pursue an opportunity. To bridge this gap, this study draws on an existing typology of time perspectives (Lévesque and Stephan 2020; Zimbardo and Boyd 1999), and limits its scope to two time perspectives: future time perspective and present-hedonistic time perspective (henceforth referred to as a present time perspective). A future time perspective focuses on plans that allow for the achievement of long-term goals, while a present time perspective focuses on the "here and now" (Lévesque and Stephan 2020).

Third, there are a number of areas that may begin to challenge initial opportunity beliefs. In returning to Shane and Venkataraman's (2000) definition of an opportunity, it was noted that an opportunity involved a temporal overlap between the customer's willingness to pay a certain price for a good or service and the entrepreneur's ability to provide that good or service at a lesser cost. These two factors reflect both a market side and a production side of the opportunity coin. KeepOut faced challenges stemming from their ability to produce.

However, it is argued that these issues stem primarily from KeepOut's time perspective. During KeepOut's market-side opportunity evaluation process, the entrepreneurs examined their opportunity using a present time perspective, asking potential consumers whether the product would be useful and whether a certain price would ensure that the product is still attractive to the consumer. Given the framing of KeepOut's questions, their entrepreneurial responses assumed away potential future alternatives and focused on evaluating the product within the existing competitive landscape of the industry. As a result, the challenges that KeepOut faced on the production side were exacerbated by the market side, where customer preferences and their willingness to pay came into question. When reevaluating their opportunity using a future time perspective, combined with their newly gained knowledge of the prototyping process, KeepOut realized that the viability of the opportunity had passed.

Buyonline, utilized a future time perspective when forming their initial opportunity belief, as can be seen in their recognition that emerging solutions would not allow Buyonline to develop a viable product and meet its product goals. This future time perspective extended Buyonline's estimated production timeline and drove them to develop proprietary software. In turn, this forced updated beliefs about original market entry timing and the initial opportunity belief. Therefore, the time perspective that each set of entrepreneurs used ultimately influenced their time management in pursuit of the opportunity as well as the subsequent time perspective lens used when their opportunity beliefs were challenged. For Buyonline the fact that other firms were pursuing a similar opportunity led them to question their initial beliefs, rather than technological or financial concerns. After investing a large sum of money in the development of their technological solution, they re-focused their attention on the market and its needs.

When Buyonline reevaluated its opportunity, they once again utilized a future time perspective, and realized that their original opportunity belief was indeed in need of change and that their chances for financial success were not what they had originally expected. This opportunity evaluation pattern was repeated, and subsequent opportunities were exploited, such as becoming a provider of download stores, a relationship manager for software publishers, and moving into other markets such as films, games, and

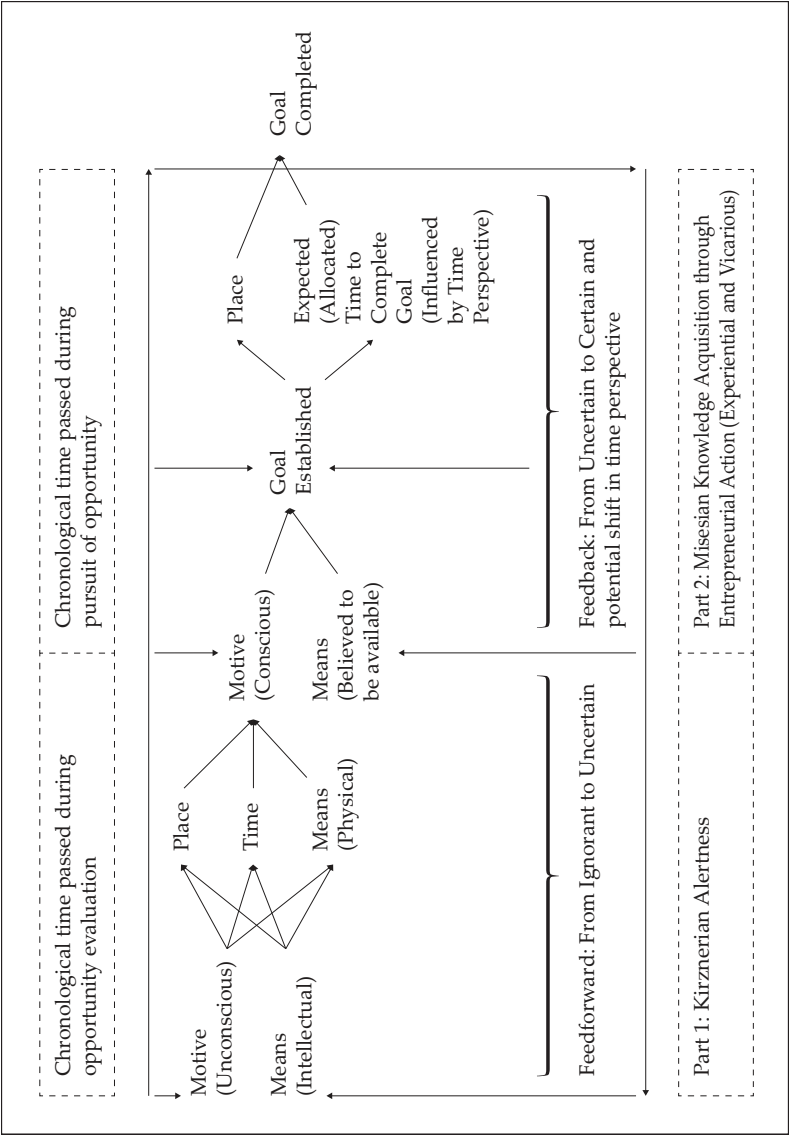
e-books. Thus, during the time the firm was putting its resources in place to exploit the opportunity via product development, the management team was able to learn more concerning the nature of the market's demands. This served Buyonline well by facilitating understanding of the consumers' current needs, how they were changing, and where new needs were emerging.

Finally, the role of time as the potential for data to change illustrates important but differing views of opportunity in the literature impacting different temporal stages. This recognition can lead to further understanding of entrepreneurial behavior more generally. Alexander Ardichvili, Richard Cardozo, and Sourav Ray (2003) attempt to integrate the psychological approach to "perception of opportunities," a more Schumpeterian "creation of opportunities," and the Kirznerian "discovery of opportunities" in their theory of opportunity identification, but they do not overtly consider the role of updating opportunity beliefs in their exposé. Others have also adopted differing views of opportunity (Alvarez and Barney 2007; Barreto 2012; Klein 2008; Ramoglou and Tsang 2016). What has yet to be explicated, though, is how simply acknowledging the impact of time introduces fundamentally different assumptions about the ontology as well as the epistemology of opportunities. Implicit assumptions and theoretical blind spots could be revealed through a more precise articulation of whether prominent theories of entrepreneurship consider opportunities to be dynamic or static phenomena (see McMullen and Kier 2016 for an example of theoretical and phenomenological gains from such problematizing efforts). Doing so will likely lead to different research questions and approaches to understanding opportunity and the entrepreneurial process.

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Opportunities are dynamic phenomena whose identification is dependent on the entrepreneur's consideration of time. In this framework, the Kirznerian discovery of opportunities and the Misesian approach to updating opportunity beliefs are complementary theories that when viewed as a sequence can lead to a better understanding of the role of time and opportunities (Figure 1).

Figure 1. An Integrated Model of Entrepreneurial Action



Most entrepreneurial action scenarios are unlikely to involve instances in which entrepreneurial opportunities are both identified

and exploited instantaneously, as Kirzner's (1973) theory of entrepreneurial alertness would suggest. For this reason, the Misesian entrepreneur, as the coordinator of resources and bearer of uncertainty, may provide a more robust description of the entrepreneurial exploitation process. At the same time, Kirzner's theory about ignorance and alertness provides valuable insights into how and why certain individuals identify opportunities while others do not.

For instance, Kirzner's view of the arbitrageur appears to be most applicable when resources are already in hand or where there are opportunity beliefs that can be acted upon relatively quickly. Consequently, Kirznerian entrepreneurs are alert to data that is relevant to fulfilling their motives. The focus is therefore on the development of initial opportunity beliefs based on data that might otherwise go unnoticed. Whenever this data is superior to the data that their plans were previously based on, these entrepreneurs enjoy an immediate profit equal to the opportunity cost of foregoing the use of what would now be erroneous data in their decision-making. Situations where this view is most appropriate include pure arbitrage opportunities, such as importing and selling goods and services from previously unknown suppliers in countries where prices are lower, or in scenarios where the opportunities being pursued are based on established technologies and production methods (such as replicative business models). Such a scenario arguably falls within the domain of risk (Hebert and Link 2006), because the means-end relationship of which the opportunity consists is not new to the price system. That is, knowledge of the supply-demand relationship can be reasonably estimated based on, for example, having been tested in some form in another location (e.g., setting up an additional franchising outlet). Opportunities based on scientific discoveries and research and development (R&D) activities also seem to fit nicely with this model but more pertinently when knowledge is licensed or sold (e.g., patents) rather than exploited by its discoverers. Not surprisingly, conceptual and empirical microlevel research in the Kirznerian tradition has tended to focus on the role of prior knowledge and scientific knowledge that can be traded, including patents (e.g., Shane 2000; Shane and Venkataraman 2000).

On the other hand, the Misesian approach seems better equipped to embrace opportunities where there is a time lag between the entrepreneurial decisions being made and the outcomes of these

decisions. This may include technological opportunities where resources must be invested before the opportunity can truly be evaluated. This is similar to Schumpeter's (1934) focus on breakthrough innovations and overcoming what McMullen and Dimov (2013) refer to as "hardware" problems (i.e., problems involving access to the resources needed to transform an idea into a product). In other words, the Misesian and Schumpeterian approaches may exist in the realm of product innovations which take time to develop and may include more radically new innovations that are based on the discovery of new-to-the-world knowledge via R&D or some other methods. The focus of these types of opportunities, then, is not on the development of initial opportunity beliefs based on prior knowledge but rather on the process involved in learning, overcoming uncertainty, especially as it relates to production, and the challenges of updating existing opportunity beliefs.

More broadly, these contrasting views of the race to develop the capability needed to exploit the conditions believed to represent a fleeting opportunity stands in stark contrast to the misguided but fortuitous event in which one acts on what he or she erroneously believes to be an opportunity only to have the situation change in advantageous ways, such that "fortune favors the bold." In this scenario, action creates opportunity by serving to enable development of the capability needed to exploit a situation that is in the process of emerging. Distal motives manifest as a goal intention that, when coupled with conducive environmental conditions, is converted into behavior that produces a positive outcome (McMullen and Kier 2016). Distal motives may remain constant while the particular goal intention sought to fulfill those motives evolves in response to both endogenous and exogenous changes in the environment (McMullen and Kier 2016). Environmental change allows eventual fulfillment of the motive through continued efforts to match various goals and situations made possible through action (McMullen 2015; Sarasvathy and Dew 2005). The economic viability of these moves is a function of the attractiveness of the initial opportunity beliefs relative to other alternatives at time zero. It is also these same factors that need to be updated as time changes to determine if the economic viability is still present (McMullen and Kier 2016).

CONCLUSION

Some scholars have recognized that the pursuit of opportunities is a process, which, by definition, unfolds over time (McMullen and Dimov 2013; Short et al. 2010). However, despite the understanding of a temporal component to the pursuit of opportunities, acknowledgment of their temporal embeddedness is surprisingly absent from the entrepreneurship literature, although Austrian economists address it in different parts of the literature. It is hoped that this inductive empirical approach and discussion help bridge the gap between these currently disparate streams of work.

This study's empirical findings have significant implications for the field. First, they go beyond the mostly conceptual discourse that has characterized much of the opportunity research to date. Much of that discourse has emphasized the formation of initial opportunity beliefs while neglecting the potentially extensive lapse of time that follows those initial impressions. In contrast, this study finds that much, if not most, of the story of opportunity, is one of an unfolding entrepreneurial process through which initial opportunity beliefs are precisely that: initial and beliefs. These beliefs evolve as both the environment and the entrepreneur's understanding of the environment change. In acknowledging this, there are a few implications for future research. First, a more dynamic view of opportunities provides a new way to think about and research opportunities. Instead of viewing opportunities as the end of a journey whereby an entrepreneur exploits that opportunity, the dynamic view sees opportunities as moving targets that can be followed over time. Therefore, even though researching the formation of opportunity beliefs remains fruitful, more important lessons might be learned by focusing on the changes to and updating of these beliefs over time.

Second, this view serves to identify some boundary conditions of existing theories of entrepreneurial action, such as those rooted in Austrian economics. For example, Kirzner's highly influential theory of entrepreneurial alertness (1973, 1985) may be well suited to the context of "passive opportunities"—i.e., situations in which the entrepreneur already possesses both the cognitive and material means, as well as the motive to act before encountering the "opportunity." This would imply situations that are seemingly arbitrage-type opportunities. In contrast, there are a number of theories of entrepreneurial

action that focus more on bearing uncertainty as a quintessential function of the entrepreneur within the price system specifically (e.g., Hayek 1945; Foss and Klein 2012; Knight 1921; Mises 1966) or social systems more broadly (McMullen and Shepherd 2006; McMullen, Plummer, and Acs, 2007). These theories often emphasize “active opportunities”—i.e., situations in which entrepreneurs are able to imagine a future situation to be an opportunity before they possess the cognitive or material means to act and/or fully understand their desire to do so. Identification of an active opportunity begins as an initial opportunity belief that endogenous or exogenous changes in the environment then discourage or encourage. These opportunities are more uncertain than “passive opportunities,” because they bear search costs and risk as resources are irreversibly committed to their pursuit (McMullen and Kier 2016). This latter approach more fully embraces Mises’s view of the entrepreneurial “producer.”

A temporal view may therefore have broad implications for the study of opportunity. These implications may impact the varying research questions than what the field of entrepreneurship currently considers. At the most basic level, a dynamic view of opportunity is more focused on what happens to opportunities over time rather than the formation and early stages of the opportunity process. This implies prioritizing the role of continuous learning in challenging and updating opportunity beliefs rather than the role of prior knowledge, where the focus is on an opportunity that already exists. Such a change would entail examinations of the nature of the perception and specific data or happenings that challenge initial opportunity beliefs. Are these primarily on the market or the production side? Does the process involved follow the same patterns and thinking as “alertness” or are there other processes involved? Do certain entrepreneurs react more quickly to these challenging signals than others, based on cognitive or motivational factors? What cues suggest updating opportunity beliefs and pivoting? What are the expectations of time in forming and changing such beliefs? What are the specific subprocesses that take place as part of this updating process? And is there ever a “finality” for the opportunity—where the perception of time “ends”? Or to what extent can a firm’s continuous pivoting still be considered pursuit of the same opportunity rather than a completely new one? These issues are addressed further in table 3 below.

Table 3. Core Distinctions and Implications for Future Studies of Time and Opportunities

	Common static view	Dynamic temporal view
Main focus	Opportunity discovery: Where do opportunities come from?	Opportunity development: What do opportunities turn into? How and when do opportunity beliefs change?
Core assumption	Changes in the socioeconomic structure lead to the emergence of an opportunity that can be recognized, evaluated, and exploited by more than one agent.	An initial opportunity belief is the starting point of pursuit. The perceived opportunity is not necessarily the “exploited” opportunity
Types of research questions	How does prior knowledge affect opportunity discovery? Why do some individuals, but not others, recognize or exploit these opportunities? How do initial opportunity beliefs affect firm outcomes?	How does learning affect changes to opportunity beliefs? Under what conditions are opportunity beliefs challenged? What aspects of opportunity beliefs change? When do updates to opportunity beliefs take place? What new knowledge affects challenges to and updated opportunity beliefs? How do time expectations impact opportunity beliefs?
How pursued	Escaping widespread ignorance to “learn” that these opportunities exist; use resources at hand (bricolage)	“Learning” to time market and production; technological advances; acquisition of other resources
Context	Slow moving; predictable customer demand	Dynamic; long production time
Lenses to adopt	Opportunity formation; outcomes of opportunity pursuit; the source of opportunity beliefs; initial attention; static target	Opportunity development; opportunity belief updating; pivoting; strategic change; performance updating; moving target
Behaviors for which this view of opportunity may be more appropriate	Arbitrage	Innovation ranging from R&D projects to new products that require time to create and produce
Methods	Surveys; interviews	Longitudinal studies; repeated surveys; in-depth case studies; narratives; ethnography; quasi-experimental methods
Main strengths	Large data samples; capture heterogeneity	Real time data; unfolding process view; <i>ex ante</i> beliefs
Main drawbacks	Retrospective bias; attrition; Overlooking process; <i>ex post</i> rationalizations	Capture “failing” firms; time consuming; access to data

To capture the temporal nature of opportunity development, it is suggested that scholars employ methods that can actually capture

the dynamics involved in the particular entrepreneurial process they are examining. These may include repeated surveys that capture changes over time, ethnographic studies or longitudinal case studies (e.g., McMullen and Bergman 2017, 2018), or quasi experiments that follow the development of opportunities in real time. Regardless, *ex ante* identification of opportunities will be important if opportunities are to be disentangled from successful (profitable) outcomes (McMullen, Ingram, and Adams 2020). Otherwise, as Dimov (2007, 2011) argues, opportunity researchers will need to be satisfied with defining opportunities after they have been successfully exploited and with an *ex post* definition of opportunity. Finally, researchers should seek multimethod techniques drawing from multiple sources of data (see Autio, Dahlander, and Frederiksen 2013) that might represent specific opportunity beliefs and changes to beliefs from multiple perspectives.

In conclusion, although some scholars have suggested that opportunities lie at the heart of the field of entrepreneurship, there are still important insights to be gained. Although there is plentiful debate taking place in the literature, the intention is to help to move these discussions toward a dynamic view of opportunities. Further, Austrian economics continues to have a pervasive—albeit potentially underappreciated—role in most contemporary entrepreneurship discussions. The simple observation that this article began with—that it often takes time to respond to a situation viewed as an opportunity and that based on this temporal gap, conditions may change—is central to entrepreneurship and Austrian theorizing. By illustrating that opportunities are more fluid and dynamic than researchers previously have conceptualized, hopefully it has been shown that the field may need to employ different assumptions and methods to study opportunities. By integrating Austrian theory into mainstream entrepreneurship research, scholars will be able to develop a potentially valuable perspective for understanding the dynamic role of opportunities.

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A SUBJECTIVIST APPROACH TO TEAM ENTREPRENEURSHIP

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ABSTRACT: Many scholars have pointed to Austrian subjectivism as an appropriate framework for understanding and studying entrepreneurship. Yet very few empirical studies in the field of entrepreneurship have applied a subjectivist lens. This research article responds to calls for more subjectivist entrepreneurship research by theoretically refining and empirically extending *the subjectivist approach to team entrepreneurship*. The findings presented in this study, which are based on data from 124 high-tech start-ups founded in Norway, suggest that positive internal and external team dynamics contribute to team effectiveness, as measured by the lead entrepreneur's subjective assessment of his or her team. Implications for theory and practice are discussed.

INTRODUCTION

One of the defining characteristics of the Austrian school is its commitment to subjectivism (Boettke, Lavoie, and Storr 2004;

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Horwitz 1994; Lavoie 1991; Storr 2010).¹ This is not to say that mainstream economics completely ignores that individuals hold different preferences, beliefs, and expectations, only that Austrians are far more consistent and thoroughgoing in their application of subjectivism (Foss, Klein, and McCaffrey 2019). Within the Austrian tradition, for example, “it is not merely the ends toward which actions are directed that are subjectively determined, but the means as well” (Dempster 1999, 76; see also Garelli 1996).

Whereas subjectivism is a defining aspect of Austrian thought, most entrepreneurship scholars, by contrast, tend to adopt an “objectivist” or “functionalist” metatheoretic approach (Jennings, Perren, and Carter 2005; Grant and Perren 2002; Packard 2017). Stated differently, the predominant approach to understanding and explaining entrepreneurial action and outcomes in the field of entrepreneurship is one characterized by a realist ontology, a positivist epistemology, a deterministic view of human agents, and a nomothetic methodology (Grant and Perren 2002; Burrell and Morgan 1979).²

The tendency of Austrian economists and entrepreneurship scholars to adopt divergent starting assumptions may discourage or hamper intellectual exchange between these two knowledge domains (MacLeod 2018). Of particular importance to our explanations of social reality is how much agency we are willing to afford the human subject (see Bevir and Blakely 2018; Hacker 2001). If, for instance, we adopt a mechanistic / deterministic image of the human actor as “nothing more than some sort of piano key or organ stop;... so that everything he does is not at all done by his will but by itself,

¹ The term *subjectivism* is difficult to pin down, as it is used differently in different contexts. In the context of Austrian economics, subjectivism refers to the explicit recognition “that the actions of individuals are to be understood only by reference to the knowledge, beliefs, perception and expectations of these individuals” (Kirzner 2002, 64). More broadly, subjectivism refers to “the pre-supposition that the contents of the human mind, and hence decision making, are not rigidly determined by external events.” (O’Driscoll and Rizzo 2014, 68).

² Notable exceptions include effectuation theory (Sarasvathy 2001) and the theory of entrepreneurial bricolage (Baker and Nelson 2005). Effectuation theory is partly grounded in American pragmatism (Steyaert 2007) and entrepreneurial bricolage draws on social constructivism, and more specifically on Penrose’s (1959) subjectivist distinction between the resources in a firm’s environment and the *firm-specific* services derived from those resources (Fischer 2012).

according to the laws of nature” (Dostoevsky 1864, qtd. in Frank 2010, 423), then this will undoubtedly shape our language and our explanations of economic life (Boettke, Coyne, and Leeson 2003). Likewise, if we adopt an image of the human actor as a self-determining and autonomous being, in absolute command of his or her beliefs and actions, then our explanations and our language will look accordingly different. Scholars who adopt polar opposite assumptions about human agency may therefore find themselves divided by “a gulf of mutual incomprehension” (Snow 1959, 4).

Philosophical differences notwithstanding, this article is written in the belief that mutual learning between the Austrian school of economics and the field of entrepreneurship is both possible and desirable. In fact, there is already a vibrant ongoing dialogue between these two areas of knowledge (Berglund 2009; Chiles, Vultee, et al. 2010; Chiles, Tuggle, et al. 2010; Foss, Klein, and McCaffrey 2019; Foss and Klein 2012; Foss et al. 2008; Kor, Mahoney, and Michael 2007; Korsgaard, Berglund, et al. 2016; Mahoney and Michael 2005). Moreover, many recent contributions have pointed specifically to subjectivism (or interpretivism) as a useful alternative framework for understanding and studying entrepreneurship (e.g., Chiles, Tuggle, et al. 2010; Chiles, Vultee, et al. 2010; Foss et al. 2008; Gilbert-Saad, Siedlok, and McNaughton 2018; Leitch, Hill, and Harrison 2010; Jennings, Perren and Carter. 2005; Kor, Mahoney, and Michael 2007; Mahoney and Michael 2005; Packard 2017; Pittaway 2005). Despite these praiseworthy efforts to articulate the potential relevance and value of subjectivism for the field of entrepreneurship, there are still very few examples of empirical studies in the field built on explicit subjectivist foundations (see Chiles, Vultee, et al. 2010). This is both surprising and unfortunate given the subjectivist emphasis on creative agency and imagination—human elements that seem central to any comprehensive understanding of entrepreneurship (Chiles, Vultee, et al. 2010; Gilbert-Saad, Siedlok, and McNaughton 2018; Kier and McMullen 2018; Kor, Mahoney, and Michael 2007; Packard 2017).

This paper responds to calls for more subjectivist entrepreneurship research (see, e.g., Jennings et al. 2005) by empirically extending *the subjectivist approach to team entrepreneurship* (henceforth, SATE; Bjornali et al. 2017; Foss et al. 2008; Leunbach, Erikson, and Rapp-Ricciardi 2019; Kor, Mahoney, and Michael 2007; Mahoney and Michael 2005; Penrose 1959). Briefly put, SATE is a distinctive approach to

studying and understanding entrepreneurial teams—first outlined by Nicolai J. Foss, Peter G. Klein, Yasemin Y. Kor, and Joseph T. Mahoney (2008)—that brings together methodological insights and assumptions from Austrian economics, Edith Penrose's (1959) subjectivist resources approach, and the modern resource-based view. It will be useful, for the sake of clarity, to provide some additional theoretical context before developing this study's hypotheses. The next section therefore offers a condensed overview of SATE and briefly explains how SATE differs from the standard objectivist approach that tends to dominate the study of entrepreneurial teams.³

THE SUBJECTIVIST APPROACH TO TEAM ENTREPRENEURSHIP

Unlike classical accounts of entrepreneurship, which tend to portray entrepreneurship as a solitary undertaking (e.g., Cantillon [1755] 1931; Kirzner 1973 Knight 1921; Say 1814), SATE embraces the team as the key unit of analysis. At first glance, it may seem incoherent that an approach that purports to be subjectivist would embrace the team as a focal object of inquiry. As Foss et al. (2008) carefully explain, however, SATE is consistent with subjectivism in that it is cognizant of individual heterogeneity and takes as its starting point that entrepreneurial teams are comprised of individuals with different experiences, interests, interpretations, personality traits, skills, knowledge, expectations, and so on. Moreover, SATE is also consistent with methodological individualism in that it recognizes that we cannot meaningfully ascribe psychological predicates, such as beliefs and intentions, to the team itself, as if it were a kind of agent in its own right (Quinton 1975). In other words, SATE is consistent with the view that "[o]nly individuals have ends and can act to attain them" (Rothbard [1962, 1970] 2009, 2). Yet it is also the case, almost by definition, that there must be more homogeneity in purposes and intentions among the members of an entrepreneurial team than there is between members of different entrepreneurial teams (Elster 1989, 248–49). As King, Felin, and Wetten (2010, 297) explain:

³ In this article, the terms *entrepreneurial team* and *new venture team* (these are used interchangeably in the literature) are defined as "the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture" (Klotz, et al. 2014, 227).

Pursuing “all” heterogeneous goals or preferences simply is not feasible for an organization not only because of costs and identity violations but also because of the limits of organizational attention (Ocasio 1997). In this sense “*organization by firm is variety reducing.*” (Kogut 2000, 408, emphasis added)

Thus, a primary assumption of SATE is that entrepreneurial team members join forces for a strategic purpose and that their association is predicated on the achievement of that shared purpose (Penrose 1959).

Of course, the adoption of a “team perspective” on entrepreneurship is not unique to SATE in itself. In recent years, entrepreneurship researchers have become increasingly interested in entrepreneurial teams (Klotz et al. 2014). As Anna Brattström, Frédéric Delmar, Alan R. Johnson and Karl Wennberg (2020) and many others have explained, however, entrepreneurial team researchers have predominately focused on examining the relationships between team characteristics (e.g., size, demographic diversity) and various types of outcomes while often downplaying or ignoring how team members work together to achieve meaningful outcomes (see also Bjornali et al. 2017; Lechler 2001; Leunbach et al. 2019). SATE, by contrast, focuses explicitly on the ways in which team members with heterogeneous mental models act and interact in *subjective* and *intersubjective* processes of “discovery, creativity and learning” (Bjornali et al. 2017, 319) to achieve their *shared* purposes (Gilbert-Saad, Siedlok, and McNaughton 2018; Packard 2017).

Finally, SATE also differs from standard approaches to studying entrepreneurial teams in that it takes seriously the proposition from Austrian economics “that the future is not merely unknown, but *unknowable*” (Kor, Mahoney, and Michael 2007, 1188). This proposition follows quite naturally from Austrian assumptions about individual agency, imagination, and choice (see Beckert 2016; Bronk 2009, 215–16; Buchanan and Vanberg 1991; Shackle 1979).⁴ As Gerald P. O’Driscoll Jr. and Mario Rizzo (2014, 69, emphasis in original) point out:

⁴ As Robert Jackson (2000, 72) has put it in another context: “Human behaviour cannot be predicted scientifically because humans have minds, and because they can make up their minds and change their minds concerning the basic question of how they wish to live. They can be quite unpredictable in doing that. They have fertile imaginations.”

A world in which there is autonomous or creative decision-making is one in which the future is not merely unknown, but *unknowable*. There is nothing in the present state of the world that enables us to predict the future state because the latter is underdetermined by the former.... Subjectivism and action under uncertainty are thus inseparable ideas.

By taking uncertainty seriously, SATE allows us to ask different questions, questions that are not being sufficiently addressed in the entrepreneurial team literature. For instance, if the modern capitalist economy is characterized by persistent “novelty, surprise, and instability” (Chiles, Vultee, et al. 2010, 138), and thus exhibits Knightian uncertainty (as opposed to measurable risk), then how can entrepreneurial teams overcome paralysis and make the decision to act, how can they form shared expectations, and how can they convince, communicate, and collaborate with external actors who may be needed in the commercialization effort (see also Beckert 2016; Beckert and Bronk 2018; Bronk 2009; Tuckett 2018)?

Although we still lack satisfactory answers to these questions, any subjectivist answer to them is likely to include some reference to our human capacity for imagination. As Jens Beckert and Richard Bronk (2018, 3) have put it, “imagination is not only the root cause of uncertain futures; it is also one of our principal tools for coping with them.” In Foss et al.’s (2008) subjectivist framework, for example, the creative imagination also takes center stage. Specifically, Foss et al. (2008, 88, emphasis original) portray entrepreneurship “as a *creative team act*, where heterogeneous managerial mental models interact in a process that produces a collective output, which is creatively superior to individual entrepreneurship.”

Although Foss et al.’s (2008) original formulation of SATE is theoretically rich and built on sound Austrian foundations, it arguably lacks the specificity needed for empirical research. Moreover, Foss et al.’s (2008) framework focuses almost exclusively on the social and cognitive interactions *within* the entrepreneurial team, thereby discounting the interface between the focal entrepreneurial team and other important constituents whose contributions may also be critical to the successful development of the venture (e.g., investors, pilot customers, alliance partners, suppliers, external advisors, government agencies; see Elert and Henrekson 2019; Garnsey and Heffernan 2005).

This article attempts to overcome these limitations by developing and testing a conceptual model that includes two key constructs, positive internal dynamics (Foss et al. 2008) and positive *external* dynamics, to explain team effectiveness. After developing and presenting said model, the research design is described and the findings, based on self-reported data from 124 high-tech start-ups founded in Norway, are presented. The article concludes with a discussion of the theoretical and practical implications.

HYPOTHESES DEVELOPMENT

POSITIVE EXTERNAL DYNAMICS AND ENTREPRENEURIAL TEAM EFFECTIVENESS

For innovation-based start-ups, a basic challenge is how to successfully communicate and collaborate with external actors whose complementary capabilities and resources are required in order for the venture to survive and grow (Clough et al. 2019; Elert and Henrekson 2019; Gans and Stern 2003; Villanueva, Van de Ven, and Sapienza, 2012). Examples of externally held resources that entrepreneurs need to attract to build their ventures include financial resources (e.g., venture capital financing or bank loans), human capital (e.g., skills from employees, advisors, board members, and business partners), and social capital (e.g., information from customers, suppliers, or other social contacts; see Clough et al. 2019 for an excellent review of the research on entrepreneurial resource mobilization).

Resource mobilization becomes particularly challenging in an Austrian world of dispersed knowledge and heterogeneous expectations (Dew, Velamuri, and Venkataraman 2004; Zander 2007). That is, subjectively held knowledge and heterogeneous expectations imply that it can be prohibitively difficult or costly for entrepreneurs to articulate and communicate their ideas and plans in such a way that relevant others will be able to understand, assess, and accept them (Zander 2007). If the venture is based on complex and highly specialized knowledge, as is often the case with science-based ventures, the likelihood of communication difficulties increases (Miozzo and DiVito 2018). In such a context, an entrepreneurial team's deep knowledge of a particular technological domain may paradoxically limit the team's ability to communicate effectively with

potential resource providers, a phenomenon known as “the curse of knowledge” (Froyd and Layne 2008; Leunbach et al. 2019). Indeed, the history of science is replete with examples that illustrate just how excruciatingly difficult it can be to champion new ideas based on specialized knowledge of “the particular circumstances of time and place” (Hayek 1945, 521), even when the ideas have clear advantages over existing alternatives (see, e.g., Rogers 2003; Weintraub 2010). The reasons for such communication difficulties include not only nonoverlapping mental models between an idea’s champions and potential supporters (Foss and Grandori 2020), but also cognitive biases against novelty (Mueller, Melwani, and Goncalo 2012). To gain acceptance for their ideas, entrepreneurs and innovators may have to frame and present their novel ideas with reference to existing and familiar activities. For example, Kathleen Eisenhardt (2003, ix), describes how managers and engineers at Amazon.com used familiar metaphors such as “shopping cart” and “checkout” to disguise their novel internet technology and overcome resistance.

Of course, many entrepreneurial teams try to circumvent aspects of the resource mobilization process by making creative use of the resources at hand (Baker and Nelson 2005; Penrose 1959) or by using their own personal funds to purchase the inputs they need to exploit an entrepreneurial opportunity (Shane 2003, 167–71). However, most entrepreneurial teams sooner or later have to confront the problem of mobilizing external stakeholder support if they want to realize their plans, even those teams that self-finance and engage in entrepreneurial bricolage (Zott and Huy 2007; Elert and Henrekson 2019).

Research suggests that resource mobilization is an inherently social process, involving communication activities such as persuasion, explanation, sharing of stories, interpretations, and so on (Martens, Jennings, and Jennings 2007; Zott and Huy 2007). In particular, to communicate effectively with a potential stakeholder, an entrepreneurial team must have a reasonably accurate understanding of what the potential stakeholder knows (Nickerson 1999).

The above considerations highlight the central importance of *empathic accuracy* for mobilizing stakeholders in support of a venture. Empathic accuracy can be defined as the “the ability to accurately infer the specific content of another person’s thought and feelings” (Ickes 1993, 588). Some people display a remarkable

talent for understanding the states of others. It has been said of the philosopher and historian of ideas Isaiah Berlin, for example, that he had “the gift of self-identification with the outlook of holders of widely different, sometimes incompatible points of view—to a degree unique among philosophers.” (Magee 2009, 43). Similarly, the bestselling novelist James Patterson attributes his own success to a “golden gut—an ability to sense what’s going to appeal to a lot of people” (qtd. in Belsky 2010, 28).

Although people differ in their basic skills of empathy and social understanding (Mar, Oatley, and Peterson 2009), it is reasonable to assume that most entrepreneurs can make a deliberate effort to successfully place themselves in the shoes of potential stakeholders⁵ and that such social imaginative efforts can translate into distinct advantages, including, for example, improved communication with relevant parties outside the focal team and improved venture ideation (Kier and McMullen 2018; McMullen 2015; Nickerson 1999). For example, an entrepreneurial team that strives to inform itself of a potential financier’s values, goals, and strategies before delivering a pitch will be more likely to secure financing for their project (all else being equal), than an entrepreneurial team that conducts no such research. Similarly, an entrepreneurial team that goes to great lengths to learn about the values, goals, and everyday concerns of potential customers will be more likely to detect relevant market problems than an entrepreneurial team which places less emphasis on such perspective-taking efforts—an informational advantage that should translate into improved venture ideation (Kier and McMullen 2018; McMullen 2010). The success of the Norwegian web series *Skam*, for example, has been attributed to a four-month preproduction period during which the series’s creators conducted about “50 in-depth 3-hour interviews and 200 school class ‘speed interviews’ with Norwegian 16-year-old girls and boys” to learn about their everyday concerns and dreams (Redvall 2018, 151).

To summarize, entrepreneurial teams that comprise members who value and engage in *positive external dynamics* will be more effective than entrepreneurial teams composed of members who

⁵ Entrepreneurs who fall on the autistic spectrum are a possible exception (see Currie and Ravenscroft 2002).

place less emphasis on engaging in positive external dynamics. Positive external dynamics are social and cognitive interactions between an entrepreneurial team and actors outside of the team (e.g., funders, suppliers, and customers) involving: 1) perspective taking, which helps ensure effective communication between the parties, and 2) a balancing of self- and other interest, which helps facilitate intersubjective agreement between the entrepreneurial team and external actors (McMullen 2010; Nickerson 1999; Galinski et al. 2008). Thus, this study's first hypothesis is: positive external dynamics are associated with venture team effectiveness.

POSITIVE INTERNAL DYNAMICS

In explaining team effectiveness, positive external dynamics have been highlighted; however, the social interaction within the team is no less important (Lechler 2001). A key ingredient in Foss et al.'s (2008) original formulation of SATE is the "positive team dynamics" which enable team members to continually (re)combine their knowledge-based assets. Positive team dynamics, according to Foss et al. (2008, 84), "involves a healthy mix of debating, which stimulates members to think differently and consider new insights, as well as a shared sense of respect, support, and care for members."

Foss et al. (2008) mainly stress the beneficial role that positive team dynamics play in enabling the team to imagine and create "a collective output that is creatively superior to individual output" (Foss et al. 2008, 73). However, teams that display positive internal dynamics are likely to enjoy a host of other advantages as well, including, for example, improved task coordination, fewer information processing failures, and increased action propensity (Leunbach, Erikson, and Rapp-Ricciardi 2019). Indeed, it is difficult to imagine how a shared sense of identity and purpose can be sustained in the team without mutually supportive interactions within it (see, also, Hambrick 2007).

The discussion above can be summarized in the following hypothesis: positive internal team dynamics will *moderate* the relationship between positive external team dynamics and the effectiveness of the venturing teams.

RESEARCH METHODS

RESEARCH DESIGN AND DATA COLLECTION

This study is based on survey data collected between 2015 and 2018. The sample was collected in Norway from a population of all the high-tech start-ups satisfying the high-tech NACE categories. A criterion for selection was that the businesses had to fit two main NACE categories: “high-tech knowledge-intensive service” or “high-technology.” From an initial sample of around nine hundred firms, a total of 761 firms were contacted, and 149 firms completed the survey, generating a response rate of 20 percent. However, there is complete data for only 124 firms. The survey questionnaires targeted the CEOs of these firms.

MEASUREMENTS

This study is based on carefully selected validated items from previous team studies. All measures, with the exception of firm age and team size, were collected using a seven-point scale.

Team Effectiveness

Although scholars have tried to develop overall measures of organizational financial performance for the field of entrepreneurship (Carton and Hofer 2007), there is still no agreement in the literature on what constitutes the best way to measure entrepreneurial team or venture performance (Blatt 2009; Foo 2011). From a subjectivist standpoint, poor team performance can be seen as an outcome that has fallen short of team members’ own goals for their collective activities—goals which are themselves highly idiosyncratic to the team and context dependent (see also Tiplic 2016). If we are committed to a subjectivist perspective, as Dempster (1999, 76) points out, then “we must realize that that we cannot, with certainty, identify either the goals of economic actors or even the means by which they perceive those goals may be met” (see, also, Garelllo 1996). Along such subjectivist lines, Penrose (1959) argued that management teams develop subjective *images* of the firm’s resource base and external environment through learning and that these images, in turn, shape

the distinct “productive opportunity set” of the firm, i.e., “what the firm can see and take advantage of” (Foss 1998, 484).

In keeping with the Penrosian insight that each entrepreneurial team is unique in the productive possibilities that it collectively envisions and seeks to exploit (Bjornali et al. 2017; Foss et al. 2008; Miozzo and DiVito 2018), the dependent variable in this study reflects the lead entrepreneur’s subjective judgment of how well his or her team is doing. Specifically, the following six items from Pearce and Sims (2002) were used to measure team effectiveness: my team copes with change very well; my team changes behavior to meet the demands of the situation; my team is highly effective; my team faces new problems effectively; my team works on important problems; my team does very good work.

Respondents were asked to indicate their level of agreement with these statements on a scale ranging from “totally disagree” (1) to “totally agree” (7). The Cronbach’s alpha coefficient for this scale was .895.

Internal Team Dynamics

One way in which Foss et al.’s (2008) concept of positive team dynamics can be measured is by using the well-established construct of behavioral integration. Behavioral integration, which was originally introduced by Hambrick (1994) as a way of capturing the essence of “teamness” in top management teams, is a metaconstruct comprised of three key elements: the level of collaborative behavior in the team, the quality and frequency of information exchange between team members, and the degree of shared decision-making that takes place in the team (Mendenhall, Butler, and Ehar 2014).

The behavioral integration items used in this study are derived from Mooney, Holahan, and Amason (2007) and read as follows: team members are mutually responsible for decisions; team members have a clear understanding of the issues and needs of each member; team members help each other solve problems; team members share relevant information with each other; team members share resources with each other. The response options ranged from “totally disagree” (1) to “totally agree” (7). The Cronbach’s alpha coefficient for this scale was .911.

Positive external dynamics were measured with the following six items from Walter, Auer and Ritter(2006): we analyze what we would like and desire to achieve with each partner; we match the use of resources (e.g., personnel, finances) to the individual relationship; we inform ourselves of our partners' goals, potential, and strategies; we judge in advance which possible partners to talk to about building up relationships; we appoint coordinators who are responsible for the relationships with our partners; we discuss regularly with our partners how we can support each other in our success.

The response options ranged from “statement does not apply at all” (1) to “statement applies completely” (7). The Cronbach alpha for this construct was .831. This variable was also mean centered. Further, team size and firm age were controlled for.

Table 1 shows the descriptive statistics of the main variables in this study. We can see from the table that the average size of the new venture team is 3.50 members (standard deviation of 1.67) and the average firm age is 10.31 years (standard deviation of 3.50). We can also read items' reliability in parentheses. These variables will be elaborated on in subsequent sections. After the two focal variables were mean centered, the collinearity diagnostics showed acceptable scores (e.g., VIFs < 1.57).

Table 1. Descriptive Statistics with Correlations

Variables in the Model:	Mean	SD	1.	2.	3.	4.
1. NVT effectiveness	5.60	.87	(.895)			
2. Internal team dynamics	5.87	.98	.629**	(.911)		
3. External team dynamics	4.83	1.16	.492**	.458**	(.831)	
4. Team size	3.50	1.67	.117	.027	.140	
5. Firm age	10.31	3.50	-.166	-.132	-.096	.075

Significance levels: + $p < .1$, * $p < .05$, ** $p < .01$. $N = 124$. Cronbach alphas in parentheses. Seven-point Likert scale.

The data set was analyzed with PROCESS macro scripts from Hayes (2013). The next table, table 2, shows the findings of the analysis. The initial column shows the control model. Model 1 shows that the overall relationship between external dynamics and the effectiveness of venturing teams is statistically significant ($B = .183$; $p < .01$). This means that external dynamics relate positively to the effectiveness of the venturing teams, as judged by the lead entrepreneur, in support of hypothesis 1.

From table 2, we also see that the moderator variable directly influences the effectiveness of the venturing teams ($.450$, $p < .001$). With respect to the interaction hypothesis, we find that internal team dynamics moderate the relationship between external team dynamics and the effectiveness of venturing teams ($B = -.061$; $p < .1$).

Table 2. Regression Results with Unstandardized Coefficients (Standard Errors in Parentheses)

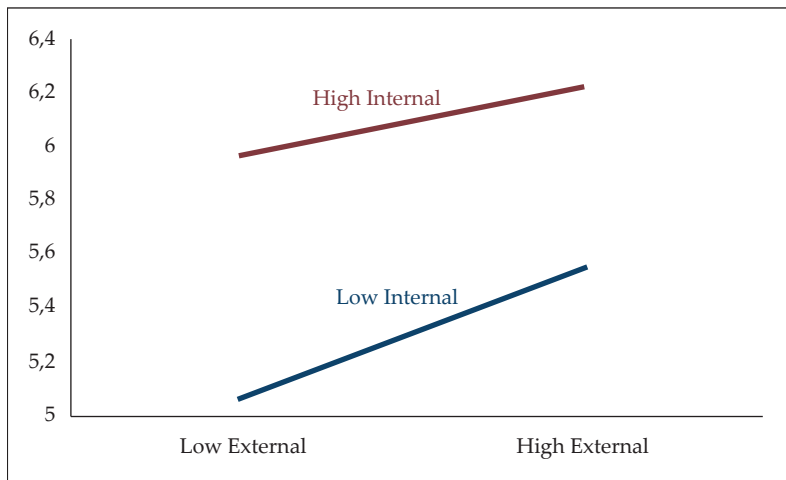
	Control Model NVT Effectiveness	Model 1 NVT Effectiveness	Model 2 NVT Effectiveness
(Constant)	5.811*** (.282)	5.669*** (.215)	5.717*** (.215)
Firm age	-.044* (.022)	-.020 (.017)	-.020 (.017)
NVT size	.068 (.047)	.039 (.036)	.032 (.036)
Internal team dynamics		.450*** (.068)	.392*** (.075)
External team dynamics		.183** (.058)	.184** (.057)
Internal x External team dynamics			-.061+ (.034)
F-value	2.813+	25.332***	21.286***
Adjusted R ²	.029	.442	.452
F-change	2.813+	45.768***	3.217+

Significance levels: + $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; $N = 124$.

Balancing Type I and Type II errors, the traditional cutoff for interaction is at the .1 level (Aguinis et al. 2011). The interaction term is significant at the .1 level. As such, there is support for hypothesis 2 regarding interaction. That is, not only does the moderator variable directly influence the effectiveness of the venturing teams, but the variable also negatively moderates the relationship between external dynamics and the effectiveness of the venturing teams, which means that higher levels of internal team dynamics reduce the influence

of external team dynamics. Figure 1 below visually shows how the interaction works. The figure illustrates that higher levels of external team dynamics relate to improved effectiveness and that this is especially true when the internal team dynamics are high.

Figure 1. Visualizing the Interaction between Internal and External Team Dynamics



DISCUSSION

As noted in the introduction, in spite of commendable efforts by many scholars to articulate the potential relevance and value of subjectivism for the field of entrepreneurship, entrepreneurship researchers have generally refrained from adopting subjectivism as a framework for their empirical research. To address this state of affairs, this paper has endeavored to provide a useful example of subjectivism in action which hopefully can inspire other entrepreneurship scholars to consider subjectivism as a metatheoretical foundation for their empirical research.

Although subjectivism may seem of concern only to a small group of scholars interested in the philosophical foundations of entrepreneurship research, it should in fact concern anyone who

cares about the practical relevance of the field of entrepreneurship. In a recent essay, for example, Dimo Dimov, Reiner Schaefer, and Joseph Pistrui (2020) warn that the field of entrepreneurship is in danger of becoming irrelevant to practicing entrepreneurs unless entrepreneurship scholars take more seriously “entrepreneurs’ first-person practical decision-making perspective” (p. 2). Similarly, James C. Hayton and Magdalena Cholakova (2012) argue that we cannot understand the emergence of entrepreneurial opportunities without examining “the microprocesses by which entrepreneurial ideas and intentions are represented and interpreted in the minds of those who develop them.” (p. 41). These arguments are in basic accord with subjectivism, and suggest that the field of entrepreneurship can benefit from a much closer dialogue with the Austrian tradition.⁶

In addition to highlighting the potential value of Austrian subjectivism for the field of entrepreneurship, this study presents empirical findings that should be of interest to both entrepreneurial team researchers and Austrian economists. Specifically, by clarifying and highlighting the important role that positive external team dynamics play in promoting team effectiveness, this study not only extends the subjectivist approach to team entrepreneurship as originally formulated by Foss et al. (2008), but it also adds empirical weight to Austrian arguments about the practical need for entrepreneurs to invest in what Hunter Hastings, Fernando D’Andrea, and Per Bylund (2019) call “market-making activities.” The concept of market-making activities still lacks a crisp definition, but it includes (for example) information-gathering attempts by entrepreneurs to understand customers’ “felt uneasiness” (Hastings, D’Andrea, and Bylund 2019, 7) for the purposes of framing and designing a solution which can help alleviate that uneasiness (see also Godley and Casson 2015).

⁶ To be clear, while we agree with Dimov et al.’s (2020) basic claim that the field of entrepreneurship can gain in practical relevance by taking more seriously the ‘subjective perspectives’ of the entrepreneurs that it studies, we do not think that subjectivism is immune from criticism. For example, because subjectivism is an epistemological framework that axiomatically presumes human agency, it leaves itself open to the critique that it underestimates the extent to which situational factors (Ross and Nisbett, 2011) and unconscious processes (Wilson, 2004) drive human choices and behavior.

As with all studies, however, there are also limitations that offer opportunities for further research. For example, the key informants approach used in this study rests on the assumption that there is considerable homogeneity in perceptions and interpretations within the entrepreneurial team. However, other members of the entrepreneurial team could potentially have rated their team differently, which would have led to different results. In the earliest stages of entrepreneurial team formation, for example, there is likely to be considerable heterogeneity of perceptions and interpretations among prospective team members. Although we are beginning to learn more about entrepreneurial team formation processes (for an overview of this literature, see Lazar et al. 2020), we still lack a clear understanding of how team members are able to negotiate and arrive at a shared understanding of their team's overall means-ends framework. Indeed, research has tended to focus primarily on the practical challenge that entrepreneurs face in negotiating intersubjective agreement with external market participants, whose resource contributions may be needed in order for the venture to develop and grow (Clough et al. 2019; see also Dew, Velamuri, and Venkataraman 2004; Zander 2007). However, reaching intersubjective agreement within the initial founding team itself is no less important. To borrow a fitting phrase from Roger Scruton (2014, 33), "There has to be a first-person plural, a 'we,'" if team members are to stay together and remain excited about their ideas (see also, Higgins 2019). Future research could shed light on this important topic by observing entrepreneurial teams closely from their earliest inception. This could be achieved, for example, in an incubator or entrepreneurship education setting.

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INSTITUTIONS AND ENTREPRENEURSHIP: PUSHING THE BOUNDARIES

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JEL CLASSIFICATION: H35, L5, M13, O31, P14

ABSTRACT: New institutional economics (NIE) and Austrian economics (AE) both emphasize the role that institutions play in facilitating or impeding entrepreneurship and hence economic growth. In this paper, we discuss the complementarities between AE and NIE for advancing our understanding of the relationship between institutions and entrepreneurship. We argue that a subjectivist view of institutions, entrepreneurial microfoundations, and capital heterogeneity can enrich our understanding of within-country variation in entrepreneurial strategies, institutional evolution, and the relationship between institutions and production processes. We hope our discussion serves as an invitation both for further theoretical collaboration between the two camps and as a spur to applied research at the intersection of institutions and entrepreneurship.

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INTRODUCTION

New institutional economics (NIE) has made important contributions to our understanding of the relationship between institutions and entrepreneurship.¹ NIE scholars stress the critical function that institutions—society’s “rules of the game”—play in constraining and enabling entrepreneurial action (North 1986; Baumol 1990; Murphy et al. 1991; Williamson 2000). Austrian scholars have also written extensively about institutions and entrepreneurship, work that predates the mid-twentieth-century advent of NIE. Beginning with Carl Menger’s ([1871] 2007; 1883) analysis of the spontaneous emergence of social orders, as well as Ludwig von Mises’s ([1920] 1990) and F. A. Hayek’s (1945; 1948) comparative analyses in the socialist calculation debate, Austrians have always been concerned with how choice generates institutions and how these institutions influence social outcomes in turn (Lavoie 1985; Langlois 1986, 1992, 165; Foss 1997; Garrouste 2008). Especially in the twentieth century, Austrians have also stressed the central role that entrepreneurs play as the “driving force” of the market process (Mises [1949] 1998; Hayek 1968; Kirzner 1973; Klein and Bylund 2014; Bylund 2019).

Given these overlapping themes, it is unsurprising that there has been some collaboration between the traditions. At the same time, it is also surprising that this exchange of ideas has not been *more* thoroughgoing. Numerous authors have suggested that there are gains from trade to be had from merging aspects of each tradition (see Langlois 1986, 1992; Boettke 1989; Foss 1994, 1997; Boettke and Coyne 2003, 2009; Sima 2004; Foss and Klein 2009; Manne 2014; Bylund and McCaffrey 2017; McCaffrey 2018; Piano and Rouanet 2020). These contributions represent promising movements in the direction of integration; nevertheless, we believe that there remain unseized profit opportunities from further integrating the two traditions to improve our understanding of the institutions-entrepreneurship link.

¹ The term *institutional economics* is probably now more commonly used than is *NIE*, but we prefer NIE nomenclature to distinguish from old institutionalism. Eggertsson (1990) draws a distinction between neoinstitutional economics and new institutional economics, with the latter rejecting more of the “hard core” of neoclassical economics. While recognizing the differences between many contemporary institutional thinkers, we do not draw that distinction.

This paper identifies three areas where NIE literature on entrepreneurship may benefit from more thoroughly incorporating Austrian insights. The first deals with a recent puzzle in NIE literature: explaining within-institution variations in entrepreneurial strategy—that is, why some entrepreneurs abide by existing rules while others seek to alter or evade them. The second deals with a subject that prominent NIE scholars such as Douglass C. North (1994) contend has not been satisfactorily resolved: explaining why and how institutions evolve over time. The third area addresses an even less well-established but promising research stream: the interaction between institutions, capital heterogeneity, and entrepreneurial action.

Suggesting how long-established Austrian insights can enrich NIE thinking on entrepreneurship is not to imply that the influence should be unidirectional. As this paper will demonstrate, Austrians can also incorporate NIE ideas in several areas. These include extending well-developed Austrian notions of entrepreneurship beyond “productive activity” and the adoption of new approaches which emphasize the distinction between “economic” and “legal” property rights.

This article achieves three tasks. First, it demonstrates the overarching complementarity between Austrian economics and NIE, particularly for furthering understanding of the institutions-entrepreneurship “black box.” Second, it highlights existing work that points in the direction of synthesis. Third, it proposes future research avenues based on our proposed integration of the traditions. The objective here is not to provide a comprehensive overview of the ways that these traditions can benefit from each other, nor is it to provide a final word on the proposed research ideas. However, the hope is that this article will spur further collaboration between the two traditions that will help resolve ongoing puzzles in the entrepreneurship literature.

The article proceeds as follows. First, the elements of both Austrian economic (AE) and NIE that are crucial for better understanding institutions and entrepreneurship are reviewed. A discussion of the prior interaction between the two traditions follows, and some ways in which they can complement each other are suggested. The final section builds on that synthesis to identify concrete ways that Austrian ideas can inform our approach to questions at the

intersection of institutions and entrepreneurship. In doing so, it also raises several questions which will hopefully inspire future research. The article concludes with implications.

AUSTRIAN ECONOMICS AND NIE—KEY THEMES FOR ENTREPRENEURSHIP

Austrian Economics

Austrian economics is marked by its subjectivist foundations. Of course, all contemporary economic traditions recognize the subjective nature of value, though the Austrian emphasis is the most thoroughgoing (Stringham 2010).² A key aspect, though, of the Austrians' encompassing subjectivism has been to show that each person evinces not merely different preferences, but also divergent knowledge and expectations. Unsurprisingly, then, Austrians have been the most systematic exponents of subjectivism within economics, an emphasis that extends to Austrian theorizing on entrepreneurship and management (Klein et al. 2008, 4).

The subjective nature of knowledge is likely the most widely recognized aspect of Austrian subjectivism. In his much-cited 1945 paper, Hayek argued that prices serve as knowledge surrogates since "local knowledge" is not given in its totality to any single mind; rather, it is dispersed throughout society in the minds of individuals.³ As Hayek emphasized, this knowledge "of the particular

² Hayek (1955, 52) famously quipped, "it is probably no exaggeration to say that every important advance in economic theory during the last hundred years was a further step in the consistent application of subjectivism."

³ Salerno (1990) initiated a debate, centered on the calculation literature, regarding the similarities and differences between Mises and Hayek. Specifically, Salerno (1990, 1993, 1994), Rothbard (1991), Herbener (1996), and Hülsmann (1997) argue that Mises' emphasis on monetary calculation was substantively different from Hayek's emphasis on knowledge dispersion. Although conceding some points advanced by the "dehomogenizers," such as the renewed emphasis given to forward-looking appraisalment, Yeager (1994), Kirzner (1996), Boettke (1998), and Horwitz (1998, 2004) argue that such a position rests on the tenuous (in their view) idea that Hayek treats prices as "sufficient statistics" in the neoclassical sense (also see Stalebrink 2004). Although these differences in interpretation are worth noting, any further adjudication of this debate is beyond the scope of this paper, as we see both sides as likely being amenable to the insights offered here.

circumstances of time and place” can only be discovered in the context of a market economy.

Although Austrians have consistently integrated subjectivism with their theories of value, knowledge, expectations, and even capital (described below), they arguably have not applied it as thoroughly to *institutions*. This gap is puzzling given that many of the most seminal Austrian contributions (i.e., the emergence of money and law, the socialist calculation debate) either explained the origins of institutions or engaged in comparative institutional analysis (Menger [1871] 2007; 1883; Mises [1920] 1990, [1949] 1998; Hayek 1945, 1948). These contributions were deeply rooted in subjectivism, as they sought to explain real-world institutions in terms of the personal values and knowledge of the relevant actors. (The way that further application of subjectivism to institutions can provide answers and generate new research directions at the interchange of institutions and entrepreneurship is described below.)

The Austrian tradition is also widely recognized for its pioneering work on entrepreneurship and the central role accorded to entrepreneurs in driving the competitive market process (Mises [1949] 1998; Kirzner 1973; Boettke and Coyne 2003; Foss et al. 2008; Klein and Bylund 2014).⁴ Austrians eschew static general equilibrium models, with their assumptions of perfect information, which dominate neoclassical economics.⁵ Instead, they favor a dynamic, process-oriented approach—one that emphasizes how entrepreneurs utilize their unique knowledge while responding to continuous profit and loss feedback. Mises ([1949] 1998, 249) famously described the entrepreneur as the “driving force” of this process, the catalyst of change who drives the dynamism of the market economy. Whereas the defining feature of long-run equilibrium in the neoclassical approach is zero economic profits, Austrians place the ceaseless

⁴ A formalistic approach to entrepreneurship has gained traction in the mainstream economics profession. For example, Lazear (2004) offers a formal model of entrepreneurship with the primary prediction being that “generalists,” rather than “specialists,” will become entrepreneurs.

⁵ The Austrian conception of the “evenly rotating economy” is an analogue to “general equilibrium,” though Austrians do not derive welfare implications from this construct, nor is it held as being attainable in the real world. Still, Cowen and Fink (1985) have criticized this construct.

earning of profit and loss at the forefront of the dynamic market process (Mises [1922] 1951).

Austrians have advanced somewhat differing perspectives on the so-called market process. For Israel M. Kirzner (1973, 1996, 1997, 2009), the market process describes entrepreneurs' ceaseless attempt to seize profits, which via arbitrage, continually drive disequilibrium states toward equilibrium. Continuous learning is key to this framework. Joseph T. Salerno (1993, 1994) argues for a narrower conception of market process that emphasizes how those less skilled at forecasting the future are continuously and systematically weeded from the marketplace. Arguably, both of these ideas find textual justification in Mises ([1949] 1998, [1922] 1951), but what these varying conceptions share in common is that entrepreneurs, responding to profit and loss, are the primary drivers of this competitive process, once more standing in sharp contrast to general equilibrium models, where, based on the assumptions, the entrepreneur has no role to play.

A corollary of market process analysis is that entrepreneurial decision-making cannot be characterized by stochastic models, where outcomes are unknown but which are drawn from a known probability distribution. Instead, it is better characterized by the uncertainty described by Frank Knight (1921),⁶ where the distribution of possible outcomes is itself unknown. Entrepreneurs therefore act under conditions of uncertainty, drawing on their subjective knowledge to anticipate opportunities, a function eliminated by static equilibrium models that assume perfect information and thus preclude genuine uncertainty (Mises [1949] 1998, 249–56).

The speculative function of entrepreneurship is a universal human function, not a job title or characteristic of a subset of individuals (Klein 2008). This universal speculative element owes to the fact that action is future oriented, that the future is uncertain, and that all actions therefore confer either psychic profits or losses. At the same time, the Austrian tradition also designates a specific set of economic actors as "entrepreneurs," in contrast to wage earners, landowners, or consumers. In the Austrian framework,

⁶ Klein (2010) discusses the overlap between Knight's and Mises's approaches to entrepreneurship and uncertainty.

entrepreneurship is the element which organizes and arranges the factors of production but is not a factor of production itself.

This basic conception of the entrepreneur has generated a flurry of literature attempting to demonstrate that “innovation” (Schumpeter 1934), “alertness” (Kirzner 1973; Sautet 2018), “judgement” (Foss and Klein 2012), or “creativity” (Alvarez and Barney 2007) is the essence of the entrepreneurial function. These debates have important implications for market theory and for integrating entrepreneurship with organizational economics, but they have less *direct* bearing on the interface between institutions and entrepreneurship that is central to NIE literature. We concur with Matthew McCaffrey (2018, 190) that “a major advantage of [William J.] Baumol’s argument is that its value does not depend on any particular theory of entrepreneurship.” To that end, entrepreneurship is here defined as “profit seeking”—a “big tent” description broad enough to capture all major conceptions. Additionally, the phrase “entrepreneurial action” is often used, because “discovery,” “judgment,” and “creation” all require subsequent action for there to be any real-world impact.

Austrians have also long stressed the heterogeneity of capital, an emphasis that begins with Menger’s ([1871] 2007) development of an intricate capital—or production—structure. At least until the emergence of certain NIE concepts, Austrians were unique in stressing that capital is heterogeneous not only in *form* but also in *function* (Lachmann [1956] 1978; Lewin 1998; Garrison 2001). As Ludwig M. Lachmann ([1956] 1978, 2) argued, heterogeneity in function, or “use,” refers to the multiple specificity of capital goods, meaning that “each capital good can be used for a limited number of purposes.” Capital goods also vary according to their complementarity with other capital goods, a point that is implicit in Hayek’s (1945) argument. Knowledge of the “particular circumstances of time and place” includes the degree to which capital goods (and labor) are substitutable for one another.

As with subjectivism, capital heterogeneity and entrepreneurship are inextricably linked. Entrepreneurs must continuously allocate capital goods to what they perceive is their most profitable use, which requires that they judge their complementarity (Mises [1949]

1998, 252-254; Lachmann [1956] 1978; Foss 2012).⁷ The heterogeneous attributes of capital goods must first be subjectively perceived and interpreted by entrepreneurs before they can be integrated into their production plans (Kirzner 1966). A key aspect of entrepreneurship, then, is exercising judgment over how to best combine and utilize heterogeneous capital goods (Foss et al. 2007). As Lachmann ([1956] 1978, 16) notes, “As long as we disregard the heterogeneity of capital, the true function of the entrepreneur must also remain hidden.”

New Institutional Economics

NIE arose in the latter half of the twentieth century as an effort to revive core elements of classical political economy and to return institutions to the forefront of economic analysis. Rooted in Ronald H. Coase’s seminal contributions (1937, 1960), the term *new institutional economics* was coined by Oliver E. Williamson in 1975. NIE, which came to represent an amalgam of transaction cost, property rights, law and economics, public choice, and agency theorizing, blossomed around the time the Austrian tradition was experiencing its own revival, sparked by seminal publications (Rothbard [1962, 1970] 2009; Kirzner 1973), the famed South Royalton conference in 1974, and Hayek’s Nobel Prize in 1974. NIE scholars frequently addressed institutional issues that, with a few notable exceptions, were not systematically examined by Austrians in the decades between the Keynesian Revolution and the Austrian revival (Foss and Klein 2009). Coase and Williamson devised transaction cost theories of the firm and other organizations. Armen A. Alchian and Harold Demsetz (1972), Steven N. S. Cheung (1983), and Yoram Barzel (1997) offered somewhat differentiated transaction cost theories of the firm, while also seeking to explain how alternative property rights arrangements affect and are affected by economic activity.⁸ North and Baumol

⁷ Mises (1949, p253) emphasizes this point, noting that “the various complementary factors of production cannot come together spontaneously. They need to be combined by the purposive efforts of [entrepreneurs].”

⁸ Just as in the case of the Austrians, these contributions are not monolithic and scholars continue to debate their commensurability. For example, Coase (1937) focused primarily on the transaction costs associated with discovering market prices, whereas Williamson focused on the transaction costs stemming from the ex post appropriation of quasi rents (Bylund, forthcoming). Similarly, Williamson

examined the role that society-wide institutions play in providing a framework for economic activity.

What unites these various strands of research is their focus on the role that institutions—the “humanly devised constraints that structure human interaction”—play in providing guideposts for human activity (North 1994, 360; Foss and Garzarelli 2007). Naturally, NIE’s emphasis on how institutions structure incentives has had an important influence on the emerging economics of entrepreneurship. This focus on the guiding role of institutions for entrepreneurial actors was most famously noted by Baumol (1990), who argues that what differs between nations is not the *supply* of entrepreneurial talent but its *allocation* between productive (e.g., innovation), unproductive (e.g., rent seeking), and destructive (e.g., crime) activities. This allocation is determined by the relative payoffs that a society offers to such activities, and these payoffs are determined by the prevailing institutions (Baumol 1990; Boettke and Coyne 2003; Boettke and Piano 2016; Lucas and Fuller 2017; McCaffrey 2018). The primary conclusion is that entrepreneurship is a proximate cause of growth but institutions are the fundamental cause.

Baumol’s classic 1990 paper has sparked a research program spanning both NIE and the “mainstream” entrepreneurship literature, with scholars deploying his framework to explain variation in the allocation of entrepreneurial activity across different nations—that is, why some nations have high rates of productive entrepreneurship while others have a larger share of unproductive activity (see, for instance, Coyne and Leeson 2004; Acs 2008; Aidis, Estrin, and Mickiewicz 2008; Sobel 2008; Bjørnskov and Foss 2008, 2016; Minniti 2008; Estrin et al. 2013; Stenholm et al. 2013). Furthermore, Baumol’s work opened the door to extending entrepreneurship beyond the application to “productive activity” found in the works of Mises, Murray N. Rothbard, and Kirzner. At the same time, his framework stands to be enriched by further incorporation of subjectivism, process, and heterogeneity—a project that is advanced in the final section of this article.⁹

(1991) argued that Alchian and Demsetz (and, by extension, Cheung) were mistaken to downplay the hierarchical nature of the firm.

⁹ McCaffrey (2018) notes that Baumol’s account also overlooks uncertainty.

FINDING COMMON GROUND: SYNTHESIZING AUSTRIAN AND NIE SCHOLARSHIP

Institutional Environments

What might a synthesis between the Austrian and NIE approach look like, specifically for furthering our understanding of the institutions-entrepreneurship nexus? To answer this question, one first must ask whether a synthesis is possible given the methodological differences between the two traditions. Certain strands of NIE are, indeed, deeply rooted in neoclassical economics, though it is generally seen as a relaxation of the stricter, more unrealistic assumptions of the neoclassical framework (Eggertsson 1990). Given that Austrians came to understand their unique identity in a sharp critique of core aspects of the emerging “neoclassical synthesis” during the socialist calculation debate, some may question whether such an integration is possible.¹⁰

To provide an overview of the Austrian assessment of NIE, we find it useful to follow Lance Edwin Davis and North (1971) in distinguishing between the “institutional environment” (society-wide rules that often arise spontaneously) and “institutional arrangements” (organizations that are usually the consequence of conscious design).¹¹ Sometimes the distinction is described as being between “institutions” and “organizations,” though admittedly, this line is not always easy to draw and some have challenged its existence altogether (see, for example, Cheung 1983).

Most Austrian criticism of NIE has focused on *institutions*, specifically Coase (1960), the *locus classicus* of what, under Stigler’s

¹⁰ For this reason, Palermo (1999, 277–78) argues that the Austrian and NIE traditions are “methodologically incompatible.” NIE analysis dating back to Coase, he argues, is “explicitly developed within a neoclassical context.” Its goal, according to Williamson (1985), is to explain all capitalist institutions by means of neoclassical tools and assumptions. Palermo therefore concludes that any attempt to reconcile the two traditions is “fundamentally misguided.” We disagree strongly with this conclusion. It is worth noting, for instance, that both traditions have leveled critiques of Walrasian general equilibrium (Mises [1949] 1998; Kirzner 1997; North 1990; Barzel 1997).

¹¹ See Klein (2000) for a discussion of the distinction between the “institutional environment” and “institutional arrangements.” This bears a striking semblance to Menger’s distinction between “organic” and “pragmatic” institutions and Hayek’s distinction between “cosmos” and “taxis,” or planned versus spontaneous orders.

influence, came to be known as the “Coase theorem.” Austrian scholars advanced the idea that Coase was hostile to private property rights because his work can be read as suggesting that courts could reallocate rights on the basis of perceived willingness to pay when transaction costs are prohibitive (Block 1977, 1995; Rothbard 1979, 1982; Lewin 1982; Cordato 2004; Hülsmann 2004). Additionally, Austrians have argued that courts striving for Kaldor-Hicks efficiency encounter insuperable difficulties, namely that subjective costs cannot be aggregated and that assigning property rights encounters the calculation problem (Rizzo 1980; Lewin 1982; Stringham 2001). Given the “Posnerian” wealth maximization appropriation of Coase, such criticisms are justifiable, yet they may also explain why there has been more synthesis of Austrian ideas with NIE thinking on “organizations,” rather than with “institutions” proper.

Institutional Arrangements

With a few notable exceptions, Austrian assessment of NIE contributions to *organizations* has been largely positive, beginning with Rothbard ([1962, 1970] 2009) and including Nicolai J. Foss and Peter G. Klein (2012). The first noteworthy exception is Donald J. Boudreaux and Randall G. Holcombe (1989), who argue that the Coasian equilibrium framework is in tension with Austrian concerns for disequilibrium, and the second is Per Bylund (2014), who argues that Coase (1937) was attempting to provide justification for central planning. In contrast to these misgivings, Klein and Foss develop a theory of the firm—a subject that has been the primary NIE focus from its beginning—by incorporating Austrian insights into a framework that is grounded in Coase (1937; Klein 1999; Foss and Klein 2009, 2012). Foss and Klein (2012) see the Austrian emphasis on the entrepreneur as necessary for a robust theory of organization, arguing that entrepreneurs establish firms because the judgment they exercise is noncontractible and can thus only be expressed by forming a firm.¹²

¹² The emphasis on firm formation as a way for entrepreneurs to express the noncontractible element of the entrepreneurial function is also present in Manne’s (2014) argument that entrepreneurship should be viewed as idea generation. It is also closely related to Barzel’s (1987, 1997) notion that the residual claimant will be

More recently, Ennio E. Piano and Louis Rouanet (2020) have argued that NIE scholars should incorporate insights bequeathed by the calculation debate. For their part, Austrian scholars ought to adopt a greater appreciation for the fact that private property rights are costly to establish and the corollary that, even in unhampered markets, not every asset will be privately owned due to the existence of transaction costs (Barzel 1997; Allen 2000; Piano and Rouanet 2020).¹³ Furthermore, Piano and Rouanet (2020) maintain that economic calculation over which property rights to establish can only occur in an institutional environment where some prices already exist and are free to arise. However, like Foss and Klein (2012), Piano and Rouanet (2020) develop their arguments in the context of *organizational* economics. Thus, one irony given the Austrians' Mengerian origins is that in the last thirty years Austrian work in "institutions and organizations" has tended to shift toward "institutional arrangements" and away from the "institutional environment." Yet, although the focus of their own argument is on organizational issues, Piano and Rouanet (2020, 16) hope their work "will build a bridge" between NIE and AE "with respect to...interventionism, entrepreneurship, and the economic analysis of law."

A Path Forward

A call for integration between the two traditions is supported both *implicitly* by NIE thinkers who have developed similar concepts to those in the Austrian tradition and *explicitly* by other scholars who have developed direct arguments in favor of synthesis. Implicit support for integration can be found in the mutual emphasis on (some form of) certain concepts ignored in the sterile general equilibrium approach. These concepts include a shared focus on (some form of) capital heterogeneity, exemplified in Williamson's "asset specificity" or Barzel's "attributes" (Lachmann [1956] 1978; Williamson, 1975, 1985; Barzel, 1982, 1997). Additional Austrian

the party whose contribution to production is costliest to measure. Note that the Kirznerian (1973) concept of "alertness" is also noncontractible.

¹³ See Allen (2000) for why the costs of establishing and enforcing property rights are called "transaction costs," though this usage differs somewhat from the traditional neoclassical usage of the term.

themes can be found in other aspects of Williamson's transaction cost economics, such as his frequent citations of Hayek on the nature of knowledge and adaptive learning (cf. Williamson 1985, 8). Similarly, North credits Hayek's work on how knowledge is generated and transmitted through time, specifically highlighting his idea of "collective knowledge," socially useful learning that is embodied in institutions as they evolve (North 1994, 364).¹⁴

Of course, drawing a direct line of influence between Austrian themes and the development of NIE thought is fraught with difficulty.¹⁵ Still, these overlapping themes are worth noting, especially as explicit calls for integration have been sounded by scholars such as Richard N. Langlois (1992, 165), who was among the first to outline points of tangency between the two traditions. Like the NIE tradition, he argues, "the Austrian school of economics is and has been fundamentally concerned with the theory of social institutions."

This concern can be seen in Mises, who combined institutional analysis with a processual perspective by endogenizing institutions all while conducting institutional analysis using choice theoretic tools, methods that later became a staple of the NIE approach (Foss 1997). That Mises consistently rooted his institutional analysis in a market process approach is best exemplified in the socialist calculation debate. As he famously remarked, "the problem of economic calculation is of economic dynamics: it is no problem of economic statics" (Mises [1922] 1951, 139). Unlike the general equilibrium approach, Mises's analysis was not constrained by unrealistic assumptions of perfect knowledge or static equilibrium, and unlike old institutionalists, his analysis of institutions was not beholden to excessive historical details or atheoretical descriptions. The institutional analysis practiced by Mises therefore occupied a middle ground between formalism and old institutionalism (Lavoie 1985).¹⁶ As Foss (1997, 77) argues, Mises was "much more than a precursor" to NIE; he, in fact, managed to "blend institutional and

¹⁴ Also note the heavy citations of Hayek by North in his work on institutional change (North 2005).

¹⁵ See Bylund (2014) for one such attempt which draws this conclusion.

¹⁶ Nonetheless, the institutional context was so front and center in Mises's analysis that Lange accused him of being an old institutionalist for his emphasis on the importance of private property (Boettke 2018).

process analysis in a way that is still yet to be achieved by modern neo-institutionalists.”

Hearkening back to one of the key Menger-Mises themes, more recent scholarship has renewed the call to *explain* the origins and evolution of institutions using the tools of economics (Leeson 2012).¹⁷ As Menger himself asked, “How can it be that institutions which serve the common welfare and are extremely significant for its development come into being without a common will directed toward establishing them?” (1883, 146). The following section shows that in the same way that Austrian insights have enriched NIE understanding of organizations, AE-NIE integration can also enhance our understanding of the institutions-entrepreneurship “black box.”

TOWARD AN INTEGRATED RESEARCH PROGRAM IN INSTITUTIONS AND ENTREPRENEURSHIP

Institutions and Subjectivism

Within-Institution Entrepreneurial Variation

Although the literature inspired by Baumol (1990) can be described as an “empirical success story” in explaining variation in entrepreneurial activity *between* nations, it has generated fewer answers regarding what causes entrepreneurs *within* a given nation to respond to the same institutional rules in vastly different ways. As Christopher J. Boudreaux, Boris N. Nikolaev, and Peter Klein (2019, 1202) describe Baumol’s approach, “incentives are clear and unambiguous and do not need to be interpreted.” In other words, once institutions are exogenously determined, “Baumolian” entrepreneurs seemingly respond to the institutional environment by solving an objectively given maximization problem, that is, by directing their energies toward “productive,” “unproductive,” or “destructive” efforts (McCaffrey 2018). This approach renders the Baumolian “entrepreneur” little different from the “entrepreneur” (really, manager) of neoclassical

¹⁷ This view is in stark contrast to Coase and Kirzner, who preferred to take institutions as exogenous with the task of the economist being to examine the economic activity occurring within those rules (Coase 1977; High 2009; Leeson 2012; Boettke 2014).

producer theory, who “chooses” (really, reacts) to a given constellation of prices. The Baumol framework is certainly valuable for explaining differences in the overall allocation of entrepreneurial talent *between* nations, where the rules may vary considerably from one society to the next. To put it another way, this approach is helpful in generating an “average treatment effect” of the institutional environment. However, this framework has had less success explaining why entrepreneurs *within the same country* (and even producing similar products) often interpret and respond to the same rule in different ways.

Until recently, this question has received little attention. Preliminary attempts at addressing this puzzle can be seen in the emerging literature that examines the range of potential entrepreneurial responses to various institutional rules. This work expands on Baumol (1990) by demonstrating that entrepreneurial response, like entrepreneurial outcome, may also be divided into three broad categories: entrepreneurial actors may abide by, alter, or altogether evade the rules of the game (Coyne and Leeson 2004; Li, Feng, and Jiang 2006; Henrekson and Sanandaji 2011; Elert and Henrekson 2016). An abiding strategy refers to entrepreneurial action that complies with the institutional status quo; an altering strategy occurs when entrepreneurs lobby rule makers for change; an evasive strategy seeks to circumvent the rules entirely (Henrekson and Sanandaji 2011; Elert and Henrekson 2017).

Although this taxonomy of entrepreneurial response to the institutional context has expanded Baumol’s taxonomy, additional research ought to explore the factors that influence an entrepreneur’s decision to abide, alter, or evade. Perhaps one reason why NIE scholars have not made more progress on this question is because the standard neoclassical toolkit has limitations that render it difficult to open this black box. For instance, many, though certainly not all, NIE scholars have treated the formal institutional rules that govern a society as not only objectively given to entrepreneurs, but also uniformly interpreted by them.¹⁸

¹⁸ Leeson’s (2012) distinction between the “Coasian” and “Posnerian” approach to institutions is apropos. The former approach takes institutions as both exogenous and beyond the reach of economics to explain. Within economics, Allen (2011) and Leeson (2017) are excellent examples of endogenizing a wide range of social

Incorporating Austrian insights may shed light on the question of why entrepreneurs adopt different strategies by further “disaggregating” the relationship between entrepreneurship and institutions. Entrepreneurs possess not only different values and preferences, but also different knowledge and expectations of the future. Institutions are therefore *perceived* as they are filtered through the subjective lens of each economic actor. This implies that all entrepreneurs face differing and subjectively determined costs and benefits associated with alternative ways of interacting with the institutional environment. They also possess different propensities for noticing perceived profit opportunities.

Imagine two rock climbers attempting to surmount the same wall at a rock-climbing gym. In this case, the constraint of geography is undoubtedly “real,” but the perception of it must still be filtered through the climbers’ minds. An unnuanced reading of Baumol (1990) may tempt some economists to assume that each climber’s (i.e., entrepreneur’s) approach to this challenge will be identical because the challenge they face is identical—they are both trying to summit the same (objective) rock formation. But the “institutional entrepreneurship” literature has highlighted that such an assumption is likely misleading (Henrekson and Sanandaji 2011; Elert and Henrekson 2020).

Consider the following reasons for why one of the climbers may attempt a different approach to ascending the rock wall. Suppose one climber has already scaled that particular wall or was able to learn from observing the successes and failures of other climbers (in other words, he is more experienced). To explore another possibility, suppose a climber is being radioed by his friend who works at the gym and who is able to describe a pass that remains hidden to the climbers from their current vantage point. In either of these cases, both climbers seemingly face the same objective constraint. Yet one has unique (i.e., subjective) knowledge about a superior route that may not be visible to the other climber from their current vantage point. In Hayek’s words, one climber’s superior knowledge of the “particular circumstances of time and place” may lead him to adopt a different route.

institutions to the choices of individuals who solve problem situations by devising new institutional constraints.

The analogy is somewhat crude. Nevertheless, it conveys the point about how two actors may adopt different strategies based on their subjective perceptions of what is seemingly the same objective constraint. In this example, one climber not only perceives the costs and benefits of a route differently than his counterpart, but he may also be aware of a route that is hidden to his friend. This analogy suggests two important avenues of research. The first possibility, that each climber simply assesses the costs and benefits of alternative routes differently, demonstrates that “judgment” is required in all contexts (Boudreaux, Nikolaev, and Klein 2019). A subjectivist perspective emphasizes that, even when placed in identical environments with identical knowledge, not all entrepreneurs will form the same conjectures about the future, perhaps due to differing sociocognitive traits or other factors that lie beyond the realm of economics and in the domain of thymology (Boudreaux, Nikolaev, and Klein 2019).

The second possibility, that entrepreneurs may possess differential knowledge, suggests that more remains to be understood about the use of *institutional* knowledge in society. Austrians are known for their concern with the epistemic properties of institutions, but to the extent that they have developed this research agenda, they have tended to focus on how different institutional environments influence entrepreneurial learning in market settings, such as how alternative contract regimes facilitate or impede the market process (Wonnell 1985). Although an important line of inquiry, understanding how market actors acquire knowledge of their institutional environment is another promising topic.

Knowledge of institutions includes awareness of “institutional contradictions,” such as when the costs of regulation are prohibitively high. Levying noncompliance fines on AirBnB hosts in New York City is one example, as the costs of monitoring by regulators are prohibitive in this case, allowing for a profitable opening (Elert and Henrekson 2016). It also includes knowledge of the institutional players themselves, of their ideologies, experiences, and what they can do for market-based entrepreneurs in particular contexts. Unsurprisingly, the importance of these considerations grows when the agency in question wields discretionary powers (Newman 2019).

A way for Austrians to build on these insights is in developing a concept that parallels the so-called knowledge filter of mainstream entrepreneurship literature. The knowledge filter either facilitates or impedes the diffusion of *technical* knowledge (Acs et al. 2004). Factors such as the university innovation system and the structure of intellectual property rights comprise the “filter,” determining how much technological knowledge disseminates to others who then deploy it in new entrepreneurial ventures. Yet, in many circumstances, knowledge pertaining to the institutional environment can be just as important for profit seekers as is technological know-how. This is particularly true in environments with a large divergence between *de facto* and *de jure* rules.

A concrete example of the importance of institutional knowledge is the informal *blat* system of graft that enabled superior navigation of the commercial realm during the post-Soviet transition years (Ledeneva 2009). Being “embedded” in this informal and corrupt network proved a key determinant of entrepreneurial success in this environment (Aidis, Estrin, and Mickiewicz 2008). Social embeddedness was critical for understanding which rules would be enforced and which officials were susceptible to bribery. Given their historic strength in examining “organic” institutions, Austrians might turn their attention to exploring the emergence and roles played by such “meso-level” institutions as informal or black market networks (Kim, Wennberg, and Croidieu 2016). “Meso” institutions, the informal network of ties that exists “between” formal institutions and spontaneously arising norms, may thus enable some entrepreneurial action even in contexts subject to regime uncertainty, but the extent of it is not yet well understood (cf. Bylund and McCaffrey 2017).

More obvious in transition economies, the divergence between *de facto* and *de jure* is important in less corrupt environments too, suggesting a list of questions that Austrians are poised to address (Colombatto 2003). Is institutional knowledge diffused through meso-level networks? Are such networks an emergent response to weak formal rules? Are entrepreneurs without political or informal connections more likely to engage in evasive entrepreneurship due to their unfamiliarity with the rules and rule makers? Most importantly, can attention to institutional knowledge help scholars understand within-country entrepreneurial variation and therefore

within-country economic development? To provide concrete answers for this variation, scholars should conduct intensive research that takes subjectivism seriously by allowing for a looser link between “given” institutions and entrepreneurial response.

Economic vs. Legal Property Rights

Applying subjectivism to institutions helps to avoid the pitfalls in the seemingly harmless assumption that there is no ambiguity, contradictions, or gaps in a society’s formal rules, nor in the interstices formed by imperfect alignment between formal and informal rules (Boettke, Coyne, and Leeson 2008). One notable NIE scholar sidesteps this pitfall by offering what might be considered an idiosyncratic definition of property rights but one which bears marked similarities to the way that Mises understood property rights. Barzel (1994, 394) defines a property right as “an individual’s net valuation, in expected terms, of the ability to directly consume the services of an asset, or to consume it indirectly through exchange.” He adds: “A key word is ability: The definition is concerned not with what people are legally entitled to do but with what they believe they can do,” (ibid. 1994, 394). Meanwhile, Mises ([1949] 1998, 678) defines a property right as “full control of the services that can be derived from a good.” Kirsten Foss and Nicolai J. Foss (2002) argue that Barzel’s conception of a property right, by placing the emphasis on individuals’ beliefs, is highly consistent with the subjectivism of the Austrian tradition.¹⁹

In his landmark 1997 text, Barzel describes how this definition leads naturally to a distinction between “economic” and “legal” property rights, where the former are what a person can actually do (*de facto*), while the latter are what the legal apparatus, usually the state, permits (*de jure*). Despite the subtle differences in these definitions of property rights, this foregoing distinction can also be found in Mises ([1922] 1951), who emphasizes the distinction

¹⁹ Both Barzel (1994, 1997) and Mises (1949) identify control as the locus of ownership. However, Barzel’s definition is arguably rooted in “expected utility,” a framework which Mises rejected for its failure to incorporate true uncertainty. Substituting the word *belief* for *expectations*, as the second part of Barzel’s definition does, certainly bring the two conceptions closer together.

between “having” something and legal ownership, stating: “Economically, however, the natural *having* alone is relevant, and the economic significance of the legal *should have* lies only in the support it lends to the acquisition, the maintenance, and the regaining of the natural having,” (p. 37, emphasis in original). We concur with Foss and Foss (2002) and Piano and Rouanet (2020) that this Mises-Barzel distinction is more than mere theoretical curiosity. Indeed, it has already been deployed in Austrian work on organizational economics. In similar fashion, incorporating this subjectivist understanding of property rights into the analysis of society-wide institutions also has important implications for how scholars might conduct research at the institutions-entrepreneurship interface.

Take the work on legal origins by Andrei Shleifer and various colleagues, which is among the most cited economics research of the last three decades. This research seeks to illuminate the influence of legal institutions, such as shareholder rights, on commercial activity and economic growth.²⁰ Some scholars have even argued that this body of work represents a “missed opportunity” for those in the Austrian tradition because it essentially turns Hayek’s arguments on law into an empirically testable research agenda (Subrick and Beaulier 2004).²¹

The work of Shleifer (and coauthors) might be faulted for relying too heavily on *de facto* measures of institutional quality. Though having missed the opportunity of *generating* this literature, Austrians still have the opportunity of sidestepping these criticisms of overreliance on *de facto* measures by embracing the Mises-Barzel definition of property rights in their empirical work. To do this, scholars might conduct surveys of entrepreneurs to ascertain their *perceptions*—their “expectations,” in Barzel’s terminology—of the institutional environment. Such an approach is particularly important because Austrian work in the theory of institutions has

²⁰ See Glaeser and Shleifer (2002) and La Porta, Lopez-de-Silanes, and Shleifer (2008) for overviews of this literature.

²¹ Arguably, another missed opportunity for Austrians is the “new economics of management” literature, which examines the connection between labor regulations and management practices worldwide (Bloom and Van Reenen 2010; Bloom et al. 2019). It can be interpreted as empirical support for Mises’s argument that “bureaucratization” of business is a result of government intervention (Mises 1944; Klein 1999, 36).

emphasized that formal institutions only “stick” when they exhibit strong correspondence with the underlying, informal norms of a society (Boettke, Coyne, and Leeson 2008; Williamson 2009). Some preliminary work in this direction has already been conducted by mainstream scholars, such as Simon Johnson, John McMillan, and Christopher Woodruff (2002), who survey entrepreneurs about the institutional environment in transition economies and reject the hypothesis that liquidity constraints are responsible for low reinvestment rates.²² Public predation is the culprit.

This subjectivist approach to institutions accounts for “what people think and believe” (Hayek 1943), their expectations about the “institutional environment,” and thus helps to open the “black box” of de facto measures. By incorporating the Misesian (and NIE) distinction between “legal” and “economic” property rights, scholars can better build on the empirical forays into the institutions-entrepreneurship relationship (Bowen and DeClerq 2008; Bjørnskov and Foss 2008; Sobel 2008). A subjectivist approach naturally suggests that scholars investigate the moderating and mediating interactions of formal and informal institutions (which may be measured via survey) for entrepreneurial outcomes. How important are “productive” formal institutions if the underlying informal institutions are sound (and vice versa)? This approach also suggests the development and use of more fine-grained measures of the informal institutional environment, such as asking entrepreneurs questions about their commercial interactions with others, as a substitute for the typical reliance on society-wide measures of “trust.”

Institutions and Process

Intended Institutional Change

NIE scholars have criticized general equilibrium models that assume perfect information and zero transaction costs and are thus poorly suited to explain why and how economies and their institutions evolve. Indeed, as has been widely noted, such models

²² Shleifer and Fyre (1997) have employed a survey method to investigate entrepreneurs’ perceptions of government quality in transition economies.

are ill equipped to explain the very existence of institutions at all. In his Nobel Prize address, North (1994, 359) pinpointed these shortcomings. "Neoclassical theory," he argued, "is simply an inappropriate tool to analyze and prescribe policies that will induce development." North even acknowledges that one of the goals of economic historians working in the NIE tradition is to "not only shed new light on the economic past, but also to contribute to economic theory by providing an analytical framework that will enable us to understand economic change" (359). He concluded that economists studying institutions need to shift from general equilibrium models that posit a "static and frictionless world" and toward a dynamic framework "capable of increasing our understanding of the historical evolution of economies over time"—one that takes seriously how "the learning process of human beings shapes the way institutions evolve" (360).

North's plea for scholars of institutions to discard static equilibrium models in favor of a dynamic framework invites those who embrace the compositive method adopted by Austrians dating back to Menger in his pioneering analysis of the origins of money. As Langlois (1992, 170) notes, this causal-genetic approach explains how social institutions evolve over time by "tracing out a sequence of events rather than merely constructing the conditions for an equilibrium." This approach to institutional analysis relies on "invisible hand explanations" built on the foundations of subjectivism and methodological individualism, allowing it to explain social phenomena as emerging in bottom-up fashion from the purposive actions of individuals.

For Austrians, entrepreneurial action is the driving force behind this institutional evolution. Identifying the entrepreneur as the catalyst of change has allowed Austrians to avoid the puzzle posed by Kenneth J. Arrow (1959), who pondered who is responsible for changing prices in a general equilibrium world. However, similar quandaries may be generated by viewing institutions as merely exogenous constraints to which entrepreneurs helplessly react. Adopting such a perspective would import a version of the bloodless price-taking "entrepreneur" (really, producer) who populates the static world of general equilibrium models.

By contrast, incorporating an entrepreneurial agent who drives institutional change is important, because, by NIE scholars' own

admission, institutional dynamics are largely treated as a “black box.” Perhaps nothing better illustrates this claim than the Demsetz (1967) analysis of the transition from common to private property. In this landmark account, changes in the relative costs and benefits of private property are translated seamlessly into a change in the property regime. To paraphrase Garrison (1995), “it’s ‘costs and benefits’ the whole way down.” Because of their focus on process over equilibrium states and their emphasis on entrepreneurs as catalysts of change, Austrians are well positioned to contribute to theories of institutional evolution (Leeson and Suarez 2015). To be sure, repeating the phrase “entrepreneurs matter” as an explanation for institutional change is no better than repeating the mantra that “institutions matter” to explain economic outcomes. What is needed are “entrepreneurial microfoundations” that illuminate the mechanisms by which entrepreneurs spur institutional change.

Jack High (2009) offers one such account in which new institutions emerge as a result of entrepreneurial actors attempting to realize “gains” (not necessarily money profits). In this story, an alert entrepreneurial actor introduces an “institutional innovation,” such as indirect exchange. The second step in this sequence also requires an act of entrepreneurship. As High argues, a second adopter of the new institutional innovation must recognize it and then decide upon adoption. He notes: “Observation requires alertness of the kind emphasized by Kirzner; deciding whether or not to adopt the new practice requires judgment in the face of uncertainty, as emphasized by Mises” (High 2009, 8). That economic activity takes place in close social proximity provides opportunity for “observation and communication” (8). People are convinced to adopt the institution via “imitation” (emphasized by Menger) and persuasion (not explicit in Menger’s story). High deploys this framework to examine the emergence of money, the division of labor, accounting, and the transition from common to private property.

High’s analysis is fruitful because it raises a host of research questions that Austrians are positioned to integrate with existing thinking on institutional change. For example, appealing to Williamson’s (2000) hierarchical approach to analyzing institutional structures, Bylund and McCaffrey (2017) describe how entrepreneurs shift activity between institutional “levels” when government policy reduces the profitability of acting on one level

relative to others. The highest level in Williamson's hierarchy—L1—consists of informal norms and rules (i.e., religious beliefs, customs, etc.), and Williamson contends that L1 changes only slowly, usually on the scale of a century to a millennium. Bylund and McCaffrey (2017, 461, 465) likewise argue that “entrepreneurs can experience extreme difficulty when trying to act in L1,” because the “social embeddedness level (L1) is far less amenable to direct and frequent change.”

However, Robert C. Ellickson (2001) advances a theory of “norm entrepreneurs,” while North (1990) sketches the concept of “ideological entrepreneurs,” developed further by Virgil Henry Storr (2011). These change agents aim at shifting society's slowest moving, most spontaneous rules. Austrians will appreciate the general thrust of Ellickson's theorizing because of his explicit emphasis on purposive action but will also find ways to improve and extend his analysis. For example, Ellickson's (2001) entrepreneurial actor is someone who simply adjusts conditions to changes in the relative prices imposed by changing constraints, rather than acting as an agent who might also introduce relative price changes. Secondly, Ellickson's analysis focuses on individuals who introduce norm changes to gain social applause, but what of entrepreneurs who introduce “L1” changes in anticipation of money profits because a combination of government intervention and existing norms would otherwise curtail their ability to do so? To what extent, and when, do market entrepreneurs undertake “norm entrepreneurship” as a means of augmenting their profitability? Because such pursuits have society-wide implications, are they often pursued collectively by profit seekers, and if so, what institutional innovations do entrepreneurs implement to monitor and enforce contribution to this “public good” (Dorobantu, Kaul, and Zelner 2017)?

Regardless of one's stance on the alterability of L1 rules, research on intentional institutional change by entrepreneurs, even that occurring at a lower level of Williamson's hierarchy, raises a host of questions that Austrians are poised to address. The first question has to do with the nature of the feedback guiding an actor like High's “institutional entrepreneur” (our term, not his). Entrepreneurial activity *within* the context of private property yields money prices, profits, and losses, which facilitate monetary calculation. Does entrepreneurial activity *over* the rules of the game also generate high-quality feedback (Boettke

and Coyne 2009, 192–95)? What substitutes for money profits and losses when entrepreneurship is occurring over the institutional prerequisites to profit-and-loss accounting?

Second, Austrians might deploy this step-by-step approach to better understand entrepreneurial solutions to the “grand challenges” that societies face, such as the private provision of goods with “publicness” characteristics, the prevention of war, the mitigation of diseases, development, immigration, aging populations, or the supplying of “missing” institutions.²³ On this last topic, Boettke and Peter T. Leeson (2009) show that, especially for the underdeveloped world, the traditional view of entrepreneurs acting *within* a given institutional framework is highly deficient.²⁴ In underdeveloped nations, formal institutions of property and contract enforcement are often severely lacking (Rajan 2004). Because there is gain to be had in supplying this missing framework, entrepreneurs work to directly supply these institutions. Once again, though, questions of feedback arise. There are also questions about the antecedents to success; for instance, how weak must public governance be for entrepreneurs to successfully provide and enforce the overarching legal framework?

Third, some Austrians have argued that market entrepreneurship yields a “multiplier effect” whereby entrepreneurial action generates subsequent profit opportunities (Holcombe 1998; Coyne, Sobel, and Dove 2010).²⁵ The mechanism by which this occurs has been spelled out for market entrepreneurship within a set of institutional rules. Austrians might contribute to the entrepreneurship literature by examining whether similar mechanisms are at work in the case of institutional entrepreneurship. Lastly, the High (2009) account is focused on institutions which arise out of purely voluntary interactions, so

²³ See George et al. (2016) for a discussion of how management scholars are tackling “grand challenges.”

²⁴ This point is also applicable to many “pockets” of underdeveloped institutions in the developed world. See, for example, David Skarbek (2014) on prison gang governance.

²⁵ Hülsmann (1999) disputes this mechanism by arguing that it is impossible to know whether an act of entrepreneurship, on net, creates additional opportunities for subsequent entrepreneurship. He also objects to what he sees as a passive conception of entrepreneurship in Holcombe’s argument. Holcombe (1999) responds by granting that it is impossible to know the counterfactual pertaining to additional acts of entrepreneurship. However, he makes the subtler point that the new opportunities are better suited to satisfying consumer preferences.

what must be modified to understand the evolution of institutions, such as slavery, which are undergirded by violent actions?

Unintended Institutional Change

Although the High (2009) analysis suggests that institutional change results from an entrepreneurial actor who explicitly attempts to alter the existing institutional framework, this is not always the case. Entrepreneurs may (unintentionally) reinforce the status quo through abiding entrepreneurship or (unintentionally) alter that status quo through evasive entrepreneurship, even when institutional alteration is not their explicit aim (Elert and Henrekson 2016, 2020). As an illustration, David S. Lucas and Caleb S. Fuller (2018) explore the “market-making” activities of entrepreneurs in the face of interventionist policies. Certain interventions—such as bounties—“commodify” products which did not previously possess “goods-character” in the Mengerian sense. For example, they describe how entrepreneurs increased the supply of pests for which public authorities had set a bounty. In the cases they examine, entrepreneurship undermined the stated rationale of the intervention, leading to its eventual repeal. Institutional alteration was the outcome, though not the intention, of the market-making entrepreneurs who responded to the intervention.

Similarly, Niklas Elert and Magnus Henrekson (2016) describe how evasive entrepreneurship may also foster formal institutional change, despite that not being any entrepreneurial actor’s explicit intent. Consider the following examples that they provide: the success of Chinese farmers’ (illegal) experiments with private property subsequently undergirded arguments that facilitated China’s move in the 1990s toward agricultural privatization; a private network of TV stations in Italy undermined the public telecommunications monopolies; and the rise of Uber caused taxi monopolies to implement “surge pricing” to compete with their new rivals.

These examples are preliminary attempts at opening the “black box” that conceals the mechanisms by which entrepreneurs generate institutional change; much more work is yet to be done. For example, is institutional change usually a result of intentional action by entrepreneurs, as in the case of “altering” activity (Elert and Henrekson

2017), or is institutional evolution more commonly an unintentional by-product of entrepreneurial behavior, as in the cases described by Lucas and Fuller (2018)? Furthermore, evasive entrepreneurship clearly does not always precipitate formal institutional change. Uber's evasive activity *vis-a-vis* taxicab monopolies has eroded the latter's rents and forced pricing adjustments, but has not yet generated wholesale repudiation of transportation licensure.

Additionally, when evasive entrepreneurship does generate institutional change, the mechanisms driving that change are also largely unclear. For example, some instances of evasive entrepreneurship might render a public monopoly unprofitable, whereas others might bring public pressure to bear on existing institutions. In yet other cases, evasive entrepreneurship might simply serve as the template for public entrepreneurs attempting to implement reforms (Klein et al. 2010).²⁶ Future research might explore the conditions under which evasive entrepreneurship tends to result in explicit institutional change while also better enumerating the mechanisms by which evasive entrepreneurial activity translates into institutional change.

Institutions and Heterogeneous Capital

Another hallmark of the Austrian tradition is its emphasis on capital as a network of interconnected, heterogeneous, and multispecific produced factors of production (Mises [1949] 1998; Lachmann [1956] 1978; Rothbard [1962, 1970] 2009; Kirzner 1966; Lewin 1998; Powell 2010; Burns 2018a). This stands in marked contrast to mainstream economic theorizing going back to Knight that treats capital as an undifferentiated blob of "shmoo" (Foss and Klein 2012, 105–07). Historically, the Austrian emphasis on capital heterogeneity has played an important role in macroeconomic or systemwide analyses, specifically trade cycles and the calculation debate.²⁷ Capital heterogeneity featured prominently in the calculation debate, because if capital goods are costlessly interchangeable between production processes, the calculation problem becomes

²⁶ Cf. DiLorenzo (1988).

²⁷ Famously, it was Mises's emphasis on capital heterogeneity that led Frank Knight to pan *Human Action*

much less severe even if not altogether irrelevant.²⁸ It was also a centerpiece of early twentieth-century Austrian development of the trade cycle. This emphasis continues to this day, particularly as mainstream macro continues to deploy homogenizing assumptions about capital that obscure the ways that monetary policy generates booms and busts (Garrison 2000; Boettke and Piano 2019).

Given these historical foci, there is promise in examining the more strictly *microeconomic* implications of capital heterogeneity, especially those which pertain to institutions and entrepreneurship. In fact, several NIE scholars have also relaxed the capital homogeneity assumption to generate explanations of microeconomic phenomena. Williamson (1975, 1985), for instance, leans heavily on his notion of “asset specificity”—investments that have transaction-specific characteristics which reduce their value in alternative lines of production—to explain the wide array of institutional arrangements that firms devise, including “arm’s length” contracts, vertical integration, and in-between hybrids.²⁹ Another notable example is Barzel’s (1982, 1997, 2005) contention that capital assets are best characterized as bundles of “attributes,” arguing that it is costly to completely and perfectly define property rights over each of an asset’s attributes. He deploys these insights to explain why some attributes are left in the “public domain” (that is, are not privately owned) and also reexamines classic questions pertaining to the widespread variation in contractual forms.

Arguably, Barzel’s notion of asset attributes is inherently more amenable to Austrian theorizing—it maps almost perfectly onto Lachmann’s ([1956] 1978, 2–5) notion of multiple specificity—than is Williamson’s concept of asset specificity, since the latter has specific *users* rather than specific *uses* in mind (Klein 2009). There

²⁸ There is ambivalence on whether perfect capital homogeneity would *eliminate* calculation problems. Horwitz (1998, 438) states: “If all capital goods are perfectly substitutable, no calculation is necessary....If all capital goods are perfectly specific, such choices are also not necessary.” Foss (2012, 152–53) argues: “In fact, even if capital were homogeneous, there would still be calculation problems left (how much homogeneous capital to devote to production now versus later).” Foss and Klein (2012) cite Mises ([1949] 1998) saying that only “trivial calculation” problems exist in a world of “shmoo” capital.

²⁹ For Williamson, the other determinants of contractual form include transaction frequency and uncertainty, but he has argued that asset specificity is the most determining.

are still ways, however, that Austrian concepts can further enrich and build on the framework provided by the attributes concept. To begin, Barzel's conception of heterogeneous goods implicitly assumes that all attributes have been discovered but that it is prohibitively costly to define property rights over each of them (Foss and Foss 2002). Kirzner (1966), however, argues that a capital good's multispecific uses ("attributes" in the Barzelian terminology) must be subjectively perceived by entrepreneurial actors who integrate them into a production plan. This point has been used to explain firm and asset ownership (Foss and Foss 2001), but we see room for more work that links entrepreneurs' discovery of valuable assets to *society-wide* institutions.

Clearly, not all institutional environments are equally conducive to the perception of asset attributes nor how they can be profitably deployed. Kirzner (1985), for instance, recognizes that government intervention alters the market process by stifling some discoveries and in generating superfluous avenues for profit making (i.e., rent seeking). This logic might be extended to explore how the institutional environment facilitates or impedes discovery of asset attributes under an entrepreneur's control. Alternatively, interventionist institutions may generate discovery of attributes which prove useful in evasive entrepreneurship but which may not have been discovered absent the intervention.

Cell phones provide a useful illustration of both cases. As Burns (2018b) documents, permissive regulatory environments in Sub-Saharan Africa facilitated the discovery of cell phone attributes which would allow them to serve as a platform for a banking system. Yet a *laissez-faire* environment is not the only context under which valuable attributes may be discovered. For example, that smartphones could coordinate a ride-sharing platform was only discovered when it was due to the *existence* of interventionist institutions. Of course, to note this is to say nothing of the welfare implications in either case. More research is needed to understand the conditions which facilitate the first or second outcome.

Other research demonstrates that the "elasticity of substitution" between capital goods is endogenous to the institutional environment (Bjørnskov and Foss 2016). Such reasoning naturally generates a host of follow-up questions. How do entrepreneurs

structure contracts (e.g., duration, asset ownership, etc.) to protect their assets' most valuable attributes in the face of *known* interventionist institutions? Furthermore, how do contractual arrangements change when entrepreneurs confront institutional *uncertainty* regarding intervention (Higgs 1997; Terrell 2013; Baker, Bloom, and Davis 2016; Bylund and McCaffrey 2017)? Relatedly, do entrepreneurs who command highly specialized assets devote more resources to the political process to better secure their rents? Entrepreneurs in these contexts are presumably more "exposed" by the thin markets in which they operate, suggesting higher payoffs from political activity.

CONCLUSION

The Austrian and new institutional economics traditions both place an emphasis on the vital role that institutions play in guiding human affairs. They also acknowledge the central role of the entrepreneur in the economy. This article contributes to prior efforts at bridging the gap between the two traditions by identifying some unrealized gains from trade: a more thoroughgoing subjectivism, an emphasis on process, and an incorporation of capital heterogeneity will open new areas of inquiry for the project of examining the relationship between institutions and entrepreneurship.

Scholars might shrink remaining gaps between AE and NIE by viewing transaction costs as the by-product of choice rather than objective, unalterable, exogenously given constraints (Robbins 1934; Buchanan 1969; DiLorenzo 1990). Indeed, North's thinking evolved in this very direction over the course of his career (Candela, forthcoming). One implication is that scholars might turn their attention to entrepreneurial activity that is aimed explicitly at reducing transaction costs (Candela and Geloso 2019). Transaction costs, the costs of establishing property rights (Allen 2000), may arise out of either private opportunism or public predation. Although Austrian economics has emphasized the rivalrous striving by entrepreneurs to satisfy consumer preferences by discovering least-cost production techniques (Hayek 1948), these insights can be profitably extended to entrepreneurial action whose aim is to reduce transaction costs specifically. This research program will identify a host of institutional constraints

that are devised to address the problem situations that consumers and producers confront. It will also reveal the entrepreneur as not only the driving force of change within a given institutional context, but also as the driver of institutional change itself. As has been argued, simply positing the existence of a change agent is insufficient. The antecedents, mechanisms, and feedback for institutional change should be elaborated.

This article is not intended to provide a comprehensive overview of all the ways that the Austrian and NIE traditions can learn from one another. Nevertheless, the hope is that this preliminary theoretical sketch will open up profitable new avenues for institutional research that incorporate important insights from both traditions. If this goal has been achieved, future scholarship on institutions and entrepreneurship will be grounded in Austrian insights and yield fruitful empirical findings.

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BOOK REVIEW

THE PUZZLE OF PRISON ORDER: WHY LIFE BEHIND BARS VARIES AROUND THE WORLD

DAVID SKARBEEK

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CHRISTOPHER CALTON*

In *The Puzzle of Prison Order*, David Skarbek builds upon his governance theory of prison social order, which posits that in cases in which the official governance institutions are inadequate, prisoners will form their own institutions to secure property rights, facilitate market exchange, adjudicate disputes, and mitigate violence. Skarbek's work rests at the intersection of two interesting subjects of inquiry. Most obviously, he is contributing to the rapidly growing body of literature on carceral systems.¹ Although *The Puzzle of Prison Order* is not a work of history, Skarbek answers historian Mary Gibson's (2011) call for a more global approach to prison

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¹ "Carceral systems" refers broadly to penitentiaries, asylums, schools for juvenile delinquents, and similar institutions designed for involuntary surveillance and containment.



studies, which remains predominantly centered on the United States and the West. Skarbek also builds on a less prevalent body of work carried largely by George Mason-trained economists such as Edward Stringham and Peter Leeson: studies of private governance. Like Leeson's *The Invisible Hook* (2009), which looks at the social order of pirates, Skarbek studies the people who seem least likely to establish functional systems of governance—criminals—to show how informal governance institutions form and operate.

Although Skarbek leans heavily on his previous work, there is a great deal of new insight even for those who are already familiar with his research. The focus of Skarbek's analysis centers on the relationship between official and informal institutions—the foundation of his governance theory of prison social order—but the book is organized into two parts that respectively illustrate two newly developed features of his theory. By comparing prison governance across various systems, Skarbek categorizes the governance regimes in his study into four ideal types: official governance, co-governance, self-governance, and minimal governance regimes. These ideal types structure Part I of *The Puzzle of Prison Order* (chapters 2–4). In Part II (chapters 5–7), he considers the conditions that lead prisoners to develop either centralized or decentralized mechanisms of governance. Skarbek's previous work on the San Quentin and San Pedro prisons (Skarbek 2010, 2014) involves only regimes that qualify as *centralized* systems of *self-governance*, according to his new taxonomy. His new book, therefore, offers a far more dynamic analysis than anything he has previously produced.

Each chapter is designed to highlight a specific element of his classificatory scheme by focusing on a representative example, but the strengths and weaknesses of the book are most embodied in the chapters on Nordic prisons and Civil War prisons, respectively. The Nordic system highlights the importance of comparative analysis by providing a *de facto* control group—a prison system that is largely successful in providing a high-quality system of official governance. Skarbek's governance theory posits that prisoners will form their own institutions *on the condition of failure from the official system of governance*. The Nordic example provides some empirical substantiation of this claim that Skarbek's previous studies have largely accepted as merely abstractly intuitive. The Nordic prison also challenges Skarbek to explain the lack of an informal market

economy—he describes a system of sharing—which leads to new considerations about the conditions upon which market prices develop in a limited underground economy. While the Nordic system provides the most valuable contrast to the other systems Skarbek describes, it underscores the value that the comparative analysis offers across all chapters, in contrast to in-depth but isolated studies.

The chapter on the Confederacy's Andersonville prison camp during the Civil War highlights the weakest points of *The Puzzle of Prison Order*. Andersonville is Skarbek's example of a prison that lacks both official and informal governance institutions, presenting the greatest challenge to the governance theory of prison order. Skarbek acknowledges that "it is actually somewhat surprising that so little governance emerges" in Andersonville, since "the prison camp is full of soldiers, not criminal offenders," who faced an "utter failure of official governance" (p. 63). He explains away this challenge to his theory by suggesting that "extreme restrictions on their freedom... smother[ed] collective action" (p. 64). Skarbek's analysis of Andersonville demonstrates a focus on the operative variables of his governance theory to the neglect of other potentially relevant determinants of whether and how prisoners form institutions. These omissions stem largely from the problem of Andersonville being both Skarbek's only historical and only wartime case. In one odd claim, Skarbek states that the prisoners "made choices—often shortsighted because of the mistaken belief that prisoner exchanges would soon free them" (p. 73), but this "mistaken belief" only relates to what the prisoners viewed as a lengthy incarceration *at the time*—when penitentiaries were still virtually non-existent and prisoners of war had traditionally, even early in the Civil War, been allowed probationary freedom. Relative to the other prisons in the book, their belief in a short term in prison was *not* mistaken—Andersonville was only constructed a year before the war's end. The question Skarbek neglects, in using Andersonville as a comparative example, is how quickly governance institutions developed elsewhere? If the answer is anything longer than one year, Andersonville becomes a moot example for Skarbek's theory. Additionally, when describing the failures of official governance, Skarbek describes a contaminated creek that flowed through the camp, which "was so filthy... that prisoners would later throw thieves into it as a punishment" (p. 67).

Is this not an informal governance mechanism? Skarbek does not appear to recognize it as such, only citing this practice to illustrate the extent of filth the prisoners suffered without (apparently) establishing governance institutions.

The Andersonville chapter also illustrates both the broadest problem and greatest opportunity for his research: the contrast of prisoner governance institutions with those of society outside the prison. Andersonville highlights this oversight because of how many of the problems Skarbek describes in the prison were not unique to prison life, as his exposition implies. By not considering the state of the Confederacy in 1864, Skarbek makes it seem as if the lack of market exchange and the prevalence of raiders, for example, related uniquely to prison camps. In fact, the conditions at Andersonville are arguably more reflective of the broader society at the time than any other prison Skarbek studies. Wartime destruction and Confederate state socialism had destroyed market exchange in the Confederacy well before Andersonville was built, and raiders harassed civilians in much the same way Skarbek describes in the prison. By neglecting to consider the society in which the prison exists, he ignores significant external variables that relate to his analysis.

This neglect of comparison to the wider society immediately outside the prison overhangs all of Skarbek's research, not merely his analysis of Andersonville. While he rightly highlights the importance of comparative institutional analysis when stating the contributions of *The Puzzle of Prison Order*, he fails to account for the variety of comparisons relevant to his inquiry. In his first book, *The Social Order of the Underworld*, Skarbek implicitly compares the institutions of prison governance within a single prison, San Quentin, *over time*. In his most recent book, he explicitly compares governance institutions *across various prisons*. What all of his studies lack is any analysis of how the governance institutions that develop within a prison compare in their operations and effect to the governance institutions within the society that contains the prison. With regards to the efficacy of prisoner institutions, this comparison may be the most important. When he qualifies his description of San Pedro's extensive system of self-governance to acknowledge that extreme cases of violence do occur, the point seems empty without any contrast to the degree of violent crime in Bolivian cities more generally; we cannot judge the efficacy of

prisoner self-governance in mitigating violence by comparing it to the violence in other prisons that house prisoners from different cultures. As Skarbek continues his research, this is a consideration he would do well to address.

These critiques notwithstanding, Skarbek continues to produce important and original work that raises questions no other scholar is asking, even as carceral studies receive unprecedented levels of interest across disciplines. Although *The Puzzle of Prison Order* does not match the quality and depth of analysis of *The Social Order of the Underworld* (which remains one of the best prison studies I have yet read), Skarbek offers useful insights and expands on his theories. While many scholars have the unfortunate tendency to rehash their early scholarship and offer stagnant contributions to their fields, readers can rest easy that *The Puzzle of Prison Order* raises new questions, offers novel ideas, and moves Skarbek's governance theory of prison social order forward in important and innovative ways.

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BOOK REVIEW

FROM THE WAR ON POVERTY TO THE WAR ON CRIME: THE MAKING OF MASS INCARCERATION IN AMERICA

ELIZABETH HINTON

CAMBRIDGE, MASS.: HARVARD UNIVERSITY PRESS, 2016, 464 PP.

TATE FEGLEY*

American policing is in a crisis of legitimacy. Due to well-publicized deaths of suspects in custody and obvious increases in militarization, even those of a disposition normally supportive of the police instinctively know that something is wrong. In a growing number of ways, police officers less resemble Sheriff Andy Taylor and reveal their primary role, not as protectors of the public and individual rights, but as the enforcement arm of the state. Seeing police departments seemingly make a greater effort to prevent churches from meeting and people from conducting business while giving large groups of rioters free rein to gather closely together while destroying property was likely a red pill moment for many. The failure of local law enforcement to maintain order in several large

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cities has resulted in growing acceptance of federal law enforcement intervening in local matters, further establishing the precedent of the alleged necessity of a large federal role in criminal justice.

The great extent of federal involvement in local criminal justice matters was not established overnight, but over the course of several decades. This is the primary subject of Elizabeth Hinton's book, *From the War on Poverty to the War on Crime: The Making of Mass Incarceration in America*, wherein she catalogs the vast increases in federal spending on grants to state and local governments for policing and prison initiatives that occurred during the presidential administrations of John F. Kennedy to Ronald Reagan. The coverage is very detailed.

What may surprise some readers is just how explosive the growth in federal funding of law enforcement was and how drastically the characteristics of American incarceration changed over such a short time span. For example, whereas Congress allocated \$10 million to the War on Crime in 1965, the budget of the Law Enforcement Assistance Administration (LEAA), whose task it was to administer funding to state and local governments, had a budget of \$850 million in 1973, ultimately spending more than \$10 billion total before disbanding in 1981 (p. 2). But with federal funding comes federal strings, leading local law enforcement to prioritize federal priorities. During the Ford Administration, one of the LEAA's primary initiatives was "Operation Disarm the Criminal," establishing a federal handgun control squad that operated in urban centers in pursuit of what Hinton describes as an effort to disarm poor blacks by criminalizing the possession of cheap "Saturday night specials" (p. 253). In addition to targeting gun owners, the federal government incentivized local law enforcement to fight the War on Drugs through the Comprehensive Crime Control Act of 1984, which contained forfeiture provisions that allowed law enforcement agencies to keep as much as 90 percent of the proceeds from seizures of cash and property belonging to suspected drug offenders (p. 312). The federal government has also shaped local law enforcement through the distribution of discounted or free equipment, including military weapons and hardware as well as surveillance gadgets. This continues to this day with the distribution of Automatic License Plate Recognition technology and Stingray devices that mimic cell

phone towers, allowing the user to extract data from cell phones within range.

Whereas the United States used to be unexceptional in incarceration rates as recently as the early 1970s, the federal government was integral to changing this as well. Hinton notes,

When Richard Nixon took office in 1969, he inherited a penal system that had been shedding prisoners. The 1960s produced the single largest reduction in the population of federal and state prisons in the nation's history, with 16,500 fewer inmates in 1969 than in 1950. Despite this trend toward decarceration, under the auspices of the Nixon administration the federal government began to construct prisons at unprecedented rates. (p. 163)

Along with the growth in prison construction came changes in prisoner demographics:

Although ascendant numbers of black Americans were imprisoned at disparate rates following the Civil War, until the 1970s they constituted roughly a third of the nation's prison population. Only after federal policymakers started investing in crime control measures, and only after the Nixon administration began to plan and incentivize prison construction, did black Americans encompass roughly half of the nation's incarcerated citizens. (p. 178)

Changes in sentencing laws, the subsidization of police on the street, and the pursuit of the War on Drugs heavily contributed to the incarceration behemoth the United States have become. The reader is left with little doubt that the effect of federal involvement in criminal justice has been profound and in a manner detrimental to American liberties.

However, there was a missed opportunity in this book to connect the workings of the welfare state with federal involvement in law enforcement and criminal justice. I was hoping that Hinton would offer the reader something similar to Bruce Porter's (1994) exposition of the relationship between the rise of the warfare state and that of the welfare state or Coyne and Hall's (2018) explanation of how military tactics used abroad find their way into domestic law enforcement. Unfortunately, Hinton appears to see no connection between the expansion of the federal government's

role in alleviating social problems through welfare spending and the subsequent expansion of its role in the criminal justice system. She states, "One of the essential ironies of American history is that this punitive campaign began during an era of liberal reform and at the height of the civil rights revolution, a moment when the nation seemed ready to embrace policies that would fully realize its egalitarian founding values" (p. 1). It is indeed disappointing that a book called *From the War on Poverty to the War on Crime* would give us no explanation of why the latter would follow the former.

This reflects the general problem afflicting this book: it lacks any clear, discernible thesis. Chapter after chapter simply describe the activities of the federal government in influencing local law enforcement and the expansion of prisons over the relevant time period. While there is a great deal of information therein, with some interesting stories of boondoggles such as the Metropolitan Police Department's "Operation Sting" that involved police officers posing as Mafia dons and encouraging larceny through their purchase of stolen property, the lack of any overarching argument leaves the reader feeling as though he is just reading a long series of facts.

Throughout the book there is a subtext that if the federal government had instead more strongly pursued the War on Poverty and spent sufficient amounts of money on it instead of criminal justice, the crime problems that existed throughout the War on Crime would have been better ameliorated. But such an argument is never explicitly made and so evidence for it is never presented. Although Hinton expresses support for the War on Poverty in the epilogue, stating that it included "promising initiatives that had been designed by grassroots organizations," she laments that they were not allowed to come to full fruition: "Before community action programs were given a chance to work on a wider level and for entire communities rather than individuals, federal policymakers decided to defund them and switch course" (p. 336). The question of why they decided to switch course, particularly if such programs were so promising, is never addressed.

Ultimately, *From the War on Poverty to the War on Crime* serves as a good overview of the criminal justice activities of the federal government during the Kennedy to the Reagan years, but not much more.

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BOOK REVIEW

ESCAPING PATERNALISM

MARIO J. RIZZO AND GLEN WHITMAN

CAMBRIDGE: CAMBRIDGE UNIVERSITY PRESS, 2020, 506 PP.

DAVID GORDON*

Some economists, such as the 2017 Nobel Laureate Richard Thaler and his colleague Cass Sunstein, have proposed an unusual justification for government interference with people's choices. They do not intend, they say, to override the preferences that people have. They don't want to tell people what they "should" want, according to an external standard that people don't accept.

They claim, however, that accepting the actual preferences people have still leaves room for government intervention. How is this possible? Their answer is that people often choose in an irrational way. They make mistakes in reasoning and choose impulsively. People don't "really" want what they choose irrationally, so government intervention that pushes people to choose rationally is consistent with respect for people's preferences.

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One way to challenge this view is to deny that people who choose irrationally aren't "really" choosing. What you *would* choose if you had full information and weren't making mistakes in reasoning may be an interesting question, but the answer to it does not tell us what people want. If it does not, there is no room for government intervention that respects people's preferences, contrary to Thaler and Sunstein's assertion.

In *Escaping Paternalism*, Mario J. Rizzo and Glen Whitman offer a more fundamental response to Thaler and Sunstein's argument, though the book is by no means limited to a discussion of these authors, nor to the argument that I am about to discuss. To the contrary, the lines of argument pursued in the dense and difficult book, far and away the best discussion of behavioral economics, are many and various.

Rizzo and Whitman ask, "What is the evidence that people choose irrationally?" They find this evidence unconvincing.

Some people might say, "Isn't it obvious that people sometimes make irrational choices? For example, people often sign up for costly gym memberships and then wind up attending the gym fewer times than they thought they would. They would have saved money if they had paid by the visit. Isn't the government helping people get what they want if it mandates a period of time for them to cancel long-term gym memberships?"

Rizzo and Whitman aren't convinced.

The analysis is fundamentally static, and thus the crucial observations that individuals plan to go to the gym more than they actually do and that they delay canceling inappropriate contracts are interpreted as partial naiveté. Indeed the individuals may be naïve to begin with, but does that explain where things end? To answer *yes* would seem implausible. Consider that the people in this study were new gym members and therefore likely inexperienced.... Why should we expect inexperienced individuals to know how much self-discipline they will have in going to the gym? The only way they will find out is by getting feedback on their initial optimistic expectations. And this will not happen all at once. Inevitably there will be a period during which they will be paying for visits they did not use. The more patient they are about learning, the longer this period will be. Patience in acquiring the knowledge necessary for self-regulation can be confused, ironically, with present bias. (p. 229)

Rizzo and Whitman's strategy here is subtle. They are not in this example accepting the view of biased behavior held by the behavioral economists, but rather they are asking whether, given this view, it has been shown that people are choosing irrationally. Further, they aren't here claiming that people for the most part do choose rationally by this standard, though it's clear from other things in the book that they think a good case can be made for this. Their limited claim here is that it has not been shown that people act in a biased way.

They use the same strategy in analyzing other studies that claim to demonstrate biased choice. In doing so, they confront many examples of alleged biased choice which have become notorious in the popular literature.

Their dissent from one common example of irrational choice illustrates the depth of their analysis. According to one standard account, employees who can choose to participate in a retirement savings program will choose differently, depending on what the "default" option is. That is to say, if people have to choose to join the program, fewer will sign up than will remain in the program when they have to "opt out" in order to leave it. Surely, the argument goes, an important decision like participating in a retirement savings program should not depend on so trivial a matter as the default option. Isn't this strong evidence for biased choice?

It comes as no surprise that Rizzo and Whitman are unconvinced.

Employees face a complicated decision about whether and when to enroll as well as what savings contribution to make.... The cognitive cost of considering options and reaching a decision is immediate, while the benefits are in the future. Present-biased agents seek to put off the immediate cognitive burden; 'let me think about this tomorrow.' ... So we must ask; is the fact that many agents eventually opt in explained by their learning about their own bias and then reducing it, or by their learning more about the situation context (including their preferences and the investments options available)? ... When they cannot be distinguished, learning looks like procrastination. (p. 294)

Once more, the authors do not claim to have proved that behavioral economists err in asserting that people choose irrationally. Their claim is that irrationality has not been proved to exist.

In other words, we in fact know much less about the prevalence of irrational choice than some behavioral economists think we do. What follows from this, so far as government intervention is concerned? Cass Sunstein answers, “Not all that much.” In the face of objections to claims of irrational choice, he maintains that

it is not enough to offer an array of theoretical, conceptual, and empirical arguments against behavioral paternalism. Rather, we must offer a broad and comprehensive argument that is sufficient to decisively rule out any form of paternalism whatsoever. (p. 412)

Only someone eager to impose his allegedly superior wisdom on the “irrational” masses could take this demand seriously, and the rest of us will join with Rizzo and Whitman in rejecting it.

BOOK REVIEW

THE SKYSCRAPER CURSE: AND HOW AUSTRIAN ECONOMISTS PREDICTED EVERY MAJOR ECONOMIC CRISIS OF THE LAST CENTURY

MARK THORNTON

AUBURN, ALA.: LUDWIG VON MISES INSTITUTE, 2018.

MICHAEL NOVAK*

In Mark Thornton's *The Skyscraper Curse*, readers are exposed to the unique phenomenon of the Skyscraper Index and provided with a comprehensive overview of Austrian business cycle theory (ABCT). The Skyscraper Index, as readers learn in the first few pages of the book, shows a correlation between the development of a new tallest building in the world and the business cycle. After exposing readers to the Skyscraper Index, Thornton tactfully explains how the Skyscraper Index exemplifies ABCT, which postulates that policies such as artificially low interest rates, corporate bailouts, and monetary and fiscal stimulus lead to the economic booms and

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busts that have become a part of modern-day economies. With the world's next tallest skyscraper, the Jeddah Tower, currently under development, a new skyscraper alert has been issued, and there is not a more timely book to review than *The Skyscraper Curse*.

In the first two chapters of the book, Thornton outlines all economic crises dating back to 1889 and effectively shows that all of them occurred shortly after a record-breaking skyscraper was built. Andrew Lawrence created the Skyscraper Index in 1999 when he noticed a correlation between the construction of the world's tallest buildings and the business cycles occurring in the United States (Lawrence 1999). More specifically, the index states that when there is a groundbreaking ceremony for a new record-breaking skyscraper, the economy is booming but that when the building reaches a record-breaking height, an economic crisis follows shortly. This might seem like an unusual phenomenon, but the measure fits all the economic crises of the past century.

In chapter 3, Thornton, explains that the Skyscraper Index not so much about record-breaking buildings being built but rather exemplifies Austrian business cycle theory. Thornton explains how the booms and busts in the economy are caused "when the central bank reduces the market rate of interest below the natural rate of interest by increasing the supply of money and credit" (p. 44). That is, when times are bad, interest rates are typically set artificially low, which increase the ability of entrepreneurs to access funds for investments. This policy resides in Keynesian economics and is how politicians typically deal with economic crises. However, as Thornton proceeds to explain, this is the exact wrong thing to do during economic crises.

In addition to artificially low interest rates, Thornton points to Cantillon effects as playing a major part in the skyscraper phenomena. Richard Cantillon explained how the increase of money in the marketplace has different effects depending on who receives it first (Cantillon 2010). As Thornton explains, if entrepreneurs received the new money first, "the rate of interest would fall, but if the new money came into the hands of consumers that rate of interest would rise" (p. 62). Thornton makes the Cantillon effect's implications for the development of skyscrapers entirely evident in explaining booms and busts in the economy. When there are periods of deflation and/or interest rates are low, land

values increase and long-term projects appear more profitable. In addition, due to lower interest rates, companies are able to grow faster, increase their mergers and acquisitions, and look to expand overseas. As they pertain to developing skyscrapers, artificially low interest rates lead to an increase in land prices, in company sizes, and demand for office space.

The fact that record-breaking skyscrapers are being built does not explain business cycles but rather showcases the underlying reasons for skyscraper developments. When Thornton's book was published in 2018, the Federal Reserve was keeping the target interest rate below 0.25 percent, which is extremely low based on the history of the Federal Reserve. At the time of this writing (September 2020) the current target interest rate is still below 0.25 percent. With rates this low, developers are encouraged to spend more and save less. As Thornton explains, rational thinking is lost during economic booms as individuals are encouraged to spend due to access to cheap money.

In chapter 8, readers are introduced to the Jeddah Tower, which is scheduled to be the world's next tallest building. Thornton mentions that a new skyscraper alert was issued on January 1, 2016 (p. 83). In chapter 9, he explains that groundbreaking date for a skyscraper should be considered a skyscraper alert and that the date when the record-breaking height is reached should be considered the "skyscraper signal" that an economic downturn is on the horizon. Thornton suggests that this modified model would have better forecasting power than the original skyscraper index.

In chapter 10, readers learn how land prices increase more in central business districts and how "falling interest rates have an unambiguous effect on higher-wage individuals and land closer to central business districts" (p. 98). The results of lower interest rates encourage people to move closer to central business districts, thereby raising land prices, and causing taller buildings to be built. Chapter 11 takes a unique perspective, illustrating how the Skyscraper Index can be applied at the state level. Thornton shows how the construction of the tallest buildings in Michigan and Arkansas coincided with business cycles. Finally, in chapter 12 Thornton summarizes section one and shifts the direction of the book toward ABCT.

THE AUSTRIAN BUSINESS CYCLE

Section two of Thornton's book is focused on ABCT and how it's an effective lens through which to view the economy. In chapter 13, readers learn about Mises's publication "*Monetary Stabilization and Cyclical Policy*", written in 1928, which outlined a cause for concern in the market before the Great Depression happened in 1929. By contrasting Mises's work to the thoughts of mainstream economist Irving Fisher, Thornton produces an early example of an Austrian economist's success in forecasting economic crises. Mises was one of the first scholars to explain that when the central bank attempts to keep interest rates low to maintain a boom the corresponding crisis becomes worse (Mises [1928] 2006). In chapter 14, readers learn about Keynesian economics and how its policies of monetary expansion focus on measuring economic prosperity through statistics such as gross national product and the unemployment rate. In addition, readers learn that when the US was taken off the gold standard and adopted a fiat money system, the wealth gap continued to grow because a fiat system benefits bankers and people with debt and hurts wage workers and savers (p. 128). Thornton uses the gold standard example to outline how fiat money and central banks tend to help the wealthy, hurt the poor, and increase the wage gap.

Chapter 15 introduces readers to Murray Rothbard and his groundbreaking work on ABCT in the 1960s and 1970s and to F. A. Hayek's work on business cycle theory that led him to win the Nobel Prize in economics in 1974. Most importantly, Thornton explains how the Ludwig von Mises Institute was founded in 1982 with the premier mission "to educate people about the benefits of a true gold standard as described in the Gold Commission's minority report" (p. 135). In chapter 17 readers are provided with a comprehensive summary of lead economists' forecasts prior to the technology bust of 2001, with a clear pattern coming to light: many of the correct forecasts were made by scholars from the Austrian school and focused on the Federal Reserve's tendency to follow a loose monetary policy of keeping rates below what they would have been otherwise. Also, at the core of correct predictions on the business cycle are the Cantillon effects and more specifically how increasing the money supply changes relative prices.

One of the areas where price changes have been especially prevalent in business cycles is housing prices. Chapters 19, 20, and 21 expose readers to the Federal Reserve's role in the housing bubble and how the artificially low interest rates set by the Federal Reserve drove renters to become buyers and led to price inflation. Thornton does a great job of explaining to readers how the Chicago school essentially denies the existence of market bubbles and how the Keynesians believe that bubbles are due to psychological factors. Keynesians also see business cycles as an "ebb and flow of mass consciousness and emotions" (p. 189). In contrast to the Chicago school and Keynesianism, Austrians believe that both real and psychological factors play a role in financial bubbles but that the cause of bubbles ultimately comes back to the policies of the Federal Reserve. According to the Austrians, when new money is introduced in the money supply and directed toward specific industries, bubbles develop. Thornton goes as far as to suggest that if the Fed would not intervene in the economy through loose monetary policy, bubbles would not develop. In addition, the bubble is not the issue but rather the Federal Reserve System, which allows booms to flourish and become unsustainable, something that has been echoed by Murry N. Rothbard (1972). Thornton shows how misallocations of resources to an industry develop under artificially low rates and how the bubble pops when that irrational allocation becomes too great to bear.

In the closing chapters Thornton explains how depressions begin with a period of monetary expansion followed by a crisis. Depressions are prolonged by government intervention through policies that are used to reverse economic crisis. Readers also learn that many Austrians believe that during a depression the government should take an active role in reducing the size of the government and balancing the budget but a passive role in economic policy to allow the economy to recover as naturally as it can. *Naturally* is used lightly, as the government intervention that people experience in the economy through the actions of the Federal Reserve makes it impossible to understand what would happen in the absence of intervention. A laissez-faire approach would make the corrective process during a depression faster and bring an economy out of despair more quickly.

DISCUSSION AND CONCLUSION

At the end of the book readers are reminded of three main causes of economic malaise in the US—a large debt accumulation, a personal savings rate that has fallen dramatically, and a continued increase in regulatory burdens on the economy. According to Thornton, if the US is to overcome its current economic flaws, the US needs to disband the Federal Open Market Committee, shut down the Federal Reserve, cancel the Fed's holdings of government bonds, eliminate taxes on capital gains of gold, silver, and new money (e.g., cryptocurrency), repeal legal tender laws, and eliminate federal insurance of demand deposits. Thornton acknowledges this is a lot to do at once and would likely cause a painful adjustment process throughout the economy. Therefore, he proposes that the US start with dismantling the Federal Open Market Committee and allowing interest rates to be determined on the open market.

Thornton's comments on the role of the Federal Reserve in the economy are not supportive of the institution by any means, but his arguments make it hard for mainstream economists to refute his stance. In the first part of the book, he makes it clear that although the Skyscraper Index does have a track record of correlating the construction of the world's tallest buildings with business cycles, the skyscrapers are not the heart of the matter but rather the policies of the Federal Reserve that promote and encourage skyscraper development. In an earlier article, Thornton mentioned that it is possible that the Skyscraper Index could become obsolete in the future (Thornton 2005). However, even if the index does become obsolete, it does not change Thornton's arguments about the Federal Reserve's role in the business cycle.

Although the arguments outlined in *The Skyscraper Curse* are adequate for the purpose of explaining the role of the Skyscraper Index and the ability of ABCT to predict economic crises, one area that could have used further development was the explanation on how the true issue with economic crises is not the bust but rather the actions taken by the Federal Reserve during the boom. Thornton outlines numerous times how fiscal policies set by the Federal Reserve lead to economic crisis, but it is never deeply elaborated on. Rothbard (1963) made it clear to readers that during times of economic expansion, the Federal Reserve sets policies that prolong

economic booms (e.g., supporting credit expansion and lowering interest rates) and make the recovery from the corresponding busts longer. Had Thornton offered more commentary on the boom, it would have made his arguments on how the US can overcome its current economic issues more compelling.

In summary, *The Skyscraper Curse* exposes the Skyscraper Index, which has predicted every economic crisis since 1889 and complies with ABCT, but the book is more about ABCT and exposing readers to the drawbacks of a Federal Reserve with a loose monetary policy. With the recent events of COVID-19 and the Federal Reserve's response of lower interest rates, corporate bailouts, and individual stimulus payments, one may expect that an economic downturn is on the horizon. Mark Thornton's book is a timely review of Austrian business cycle theory and I encourage all to read it so that they can be prepared for the next economic downturn.

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