

OPPORTUNITY IDENTIFICATION REDUX

C. M. GAGLIO
San Francisco State University

Dimo DIMOV
University of Bath

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Twenty years ago, the preceding chapter was written in hopes of contributing to the academic legitimacy of the re-emerging discipline of entrepreneurship.¹ Therefore, the intellectual antecedents of the concept ‘entrepreneurial opportunity’ were carefully traced in order to theoretically ground the discipline’s claims regarding its *raison d’être* (Timmons, Muzyka, Stevenson & Bygrave, 1987). At the time, Shane and Venkataraman (2000) worried that defining ‘entrepreneurial opportunity’ merely in terms of new venture creation turned entrepreneurship into ‘an applied research setting or teaching application,’ rather than an academic discipline.²

The results of tracing the intellectual antecedents (Economics) revealed two fundamental issues scholars would need to address in the study of entrepreneurial opportunities. The first concerns the type of opportunity. While traditional neo-classical economic theory essentially ignored entrepreneurial opportunities, or treated them as exogenous variables (Baumol, 1968), several members of the Austrian School (Kirzner, 1979; Schumpeter, 1934) argued for recasting entrepreneurial opportunities

¹ The Interdisciplinary Center for Research on Entrepreneurial History, based at Harvard Business School, published *Explorations in Entrepreneurial History* during the 1940s and 1950s.

² Shane & Venkataraman (2000), page 218.

as an endogenous variable thereby accounting for existing unexplained marketplace activities. However, they disagreed about the degree of marketplace change or innovation represented by an entrepreneurial opportunity: was it radical innovation that disrupts the marketplace, perhaps destroying entire industrial sectors, or was it a less radical form such as arbitrage, correcting mistakes in resource allocation and pricing (Endres & Woods, 2010, Kirzner, 1979, Schumpeter, 1934)?

The second issue concerns describing and understanding the unique decision-making calculus that leads to entrepreneurial opportunities. It was assumed that this calculus was not performed by other economic market actors such as managers. However, once entrepreneurial opportunities were introduced into the marketplace, managers and other market actors were obligated to include them in decisions about resource allocation and maximizing (Hogarth & Reder, 1987). Twenty years ago, explanations of the unique entrepreneurial decision calculus, that is, the opportunity identification process, invoked mysterious black boxes such as creativity (Schumpeter, 1934; Long & McMullan, 1984) or alertness (Kirzner, 1979) from which entrepreneurial opportunities suddenly occurred in some way.

Consequently, another goal in writing the preceding chapter was to punch a hole in those black boxes and by revealing their contents, that is, the mental activity involved in such decision making (the associated socio-cognitive processes), make entrepreneurial decision making more amenable to empirical investigation. The added benefit of conceptualizing opportunity identification in terms of socio-cognitive processes was that a well-developed theoretical framework and methodology (e.g., Fiske & Taylor, 1991; Kahneman & Tversky, 1986; Mitchell & Beach, 1990; Roese & Olsen, 1995) could guide investigation.

The discipline's resurrection was prescient: since the publication of the preceding chapter, evidence has amassed to conclude that *the concepts of 'entrepreneurial opportunity' and 'creative destruction' (Schumpeter, 1950) have at least face validity.* Air BnB, AliBaba, the Cloud, Facebook, Google, Instagram, LinkedIn, Lyft, Netflix, PayPal, Salesforce, Snapchat, Twitter and Uber – to name just a few – did not exist twenty years ago in 1997. Even Apple's iPhone was only on the drawing boards. The sheer number of disruptive businesses and their associated new goods and services effectively negated MacMillan and Katz's (1992) worries that 'the idiosyncratic milieus of entrepreneurship' would preclude obtaining sufficient sample size for more than an occasional case study; they also refuted the argument that opportunity identification was a randomly occurring event (Gaglio, 1997). And today, the Fourth Industrial Revolution, that is, the fusion of physical, biological and digital technologies, ensures the continued relevance of this topic (Maine et al. 2015).

These real-world events have confirmed that there *is* something to be studied, which makes concerns about academic legitimacy less salient. While this new 'land of opportunity' may represent a distinctive domain in which a new academic community could settle and thrive, these events also pose serious intellectual challenges to understanding them: could scholars develop investigative strategies and theories that could capture the richness, the complexity, the dynamism, and the convergent influences of time and context that events clearly revealed? The phenomena seem to defy the boundaries of any single discipline (even if a newly created one) and point to the need to disrupt our traditional disciplinary approaches in favor of investigation through the full range of social science disciplines and their accompanying philosophical and methodological diversity.

Twenty years on, are we meeting the challenge? What interesting, surprising and/or important things have we learned about entrepreneurial opportunity and its identification or creation? As scholars who have devoted much of their academic careers to the topic, we would like to muse and reflect on developments that attracted our interests and contemplate how the field might proceed going forward. The reader should be warned that this is not a comprehensive literature review, many are available.³ We organize our musings around several fundamental issues that serve as focal points. Our discussions of each begins with the way they were originally comprehended in 1997 and consider how each issue has evolved. In addition, we want to highlight what we believe are critical issues uncovered by the empirical activity of the past twenty years and must be included going forward. We do not intend to reach consensus but present various perspectives we believe useful to advancing empirical investigation. We begin with the first issue identified twenty years ago: what is an entrepreneurial opportunity?

Focal Point # 1: What is an *Entrepreneurial Opportunity*?

Twenty Years Ago. As noted in the introduction, economists writing about entrepreneurial opportunities disagree about what they mean when they invoke the concept. Schumpeter's (1934) early writing emphasize the role of new firms led by willful individuals who introduce innovative products, services, or processes and thereby change the marketplace. Clearly, the disruptive firms listed earlier conform to

³ Those desiring comprehensive reviews might consult Busenitz, Plummer, Klotz, Shazad & Rhoads, 2014; Crump, Singh & Abbey, 2011; Short, Ketchen, Shook & Ireland, 2010; Welter & Alvarez, 2015.

Schumpeter's conflation of radical product or service innovation with a new venture. However, Schumpeter (1950) later argued that only large corporations could muster the necessary resources for innovation on such a scale. While this conceptualization of entrepreneurial opportunity has yet to be supported empirically, Ginni Rometty, CEO of IBM, recently gathered 99 CEOs of major companies to discuss how they can regain their rightful place and credit as the disruptors in the Third Wave of the Digital Revolution (Case, 2017; Murray, 2017). Most of these firms provide the tangible products used in everyday life. One could plausibly argue that the innovation represented by the application of digital technology to these products will have as big and as radical an impact as the disruptors of the First and Second Waves – albeit in a different way. Regardless of the organizational form used to introduce innovation to the marketplace, the common thread in Schumpeter's conceptualizations of entrepreneurial opportunity frames innovation as new to the marketplace.

Kirzner (1979) on the other hand, places no such constraints on his conceptualization of entrepreneurial opportunity other than that it arise from a person (1) being quick to discern the signals or cues that the marketplace has or is changing and (2) being equally quick to infer the causes, implications and profit possibilities of those changes. In theory, an entrepreneurial opportunity could be a simple change in price or as radical as anything Schumpeter could image. However, implicit in this conceptualization is an assumption that the exploitation of an entrepreneurial opportunity introduces something new to the marketplace, even if only a new price.

Venkataraman (1997) seizes on this implicit common thread that an entrepreneurial opportunity introduces something new to the market place in his conceptualization of an entrepreneurial opportunity in terms of *future* goods and services, that is, goods and services not currently in the marketplace. The Digital

Revolution demonstrated a need to expand this conceptualization to include future processes (e.g., the next Internet) and business models in addition to future goods and services. Later in this chapter, we will examine additional implications of conceptualizing entrepreneurial opportunities in terms of the future.

Evolution. In retrospect, it is not surprising that a phenomenon of the magnitude wrought by the Digital Revolution would compel the attention and sense-making efforts of more than just entrepreneurial scholars. In the process, the concepts of *entrepreneur* and *entrepreneurial opportunity* moved from being a marginalized interest for a small but growing number of scholars to being the 'it' field. Consequently, many communities of interest claim concepts for their own and define them according to their respective political needs and agendas (Gaglio & Winter, 2016).

The impact of these conflicting claims is not trivial; the proliferation of definitions and levels of analysis breeds confusion and inhibits the cumulative efforts conducive to the scientific process. Hansen, Monllor and Shrader (2016) introduce a framework designed to bring order to the chaos but their framework demonstrates the size of the dilemma rather than addresses it. Their efforts also illustrate the various levels of analysis the communities of interest use to examine their conceptions of entrepreneurial opportunities: individual, firm, industry, geographic region, knowledge community, national economy, marketplace, and so forth. However, there is no denying that most communities of interest such as business schools, management journals, banks, government economic development organizations, subscribers to the PSED or Global Entrepreneurship Monitor and the general public consider an entrepreneurial opportunity as the chance to start a business or become self-employed; whether that business introduces innovative products, services or processes is an issue left to the investigator's discretion.

Going Forward. While the potential individual and societal benefits of defining entrepreneurial opportunity as the creation of a new venture can be life changing, it would be a shame if Shane and Venkataraman's fear of entrepreneurship becoming an applied research setting is fulfilled, especially at this time (2017) when innovation abounds in all industries. It may be useful to reframe the marketplace in which entrepreneurs and entrepreneurial opportunities occur in terms of an *innovation ecology* (Griffiths, et al., 2009; Wulf, 2007), a setting that can encompass all the communities of interest. For example, Overholm's (2015) detailed account of the development of the solar services market or Sine and Lee's (2009) careful study of the wind power sector combine both the individual (venture founder) and societal levels of analysis to explain how the disruptive ideas were manipulated and negotiated so they could be introduced into the marketplace. These studies define entrepreneurial opportunity as new ventures introducing radical disruptions (i.e., Schumpeter's original conceptualization). However, these disruptions could not take root or have longevity without the supporting, but less radical innovations introduced by new businesses such as installation and maintenance companies, parts supply companies, and so forth; that is, the types of businesses that most communities of interest prefer as a focus.

While an innovation ecology perspective accommodates how these diverse types of opportunities encompass the spirit of what is meant by an entrepreneurial opportunity, it does not necessarily follow that the decision-making calculus would be the same for the types of radical innovations, which involve uncertainty, as for the less radical innovations involving risk (Endres & Woods, 2006). For example, Dyer, Gregersen and Christensen (2008) interviewed several disruptors (e.g., Bezos, Dell, Thiel, among others) and each reported a strong desire to, quite literally, disrupt the

status quo and planned on being a startup. This suggests the scale of innovation was very much on their minds as they engaged in an iterative process to generate novel products, services, processes as well as the venture. In addition, there is considerable evidence that specific knowledge influences the degree of innovation in an opportunity (Shepherd & DeTienne, 2005).

The differing perspectives found in each of the communities of interest can be seen as complicating the conceptualization of ‘entrepreneur’ and ‘entrepreneurial opportunity,’ but they can also be seen as pointing to the need for a multidisciplinary conceptualization. Each of these communities has a real stake in entrepreneurship theory and practice and thereby have much to contribute to any account or explanation. The plurality of perspectives is actually beneficial. For example, management scholars’ understanding of ‘managing’ and ‘the organization’ depend on contributions from sociology (bureaucracy, role theory and group dynamics), economics (resource allocation and measures of performance), psychology (motivation and decision-making), anthropology (organizational culture), political science (regulatory environments), and engineering (systems) at the very least. Practitioners confront the added task of understanding the basic chemistry and physics associated with the actual production of specific goods and services. Determining what it would take to move towards a multi-disciplinary approach is beyond the scope of this chapter, but it is a necessary and worthwhile pursuit for up and coming scholars.⁴

In the meantime, the discipline would be well served if investigators regularly include the dimensions of entrepreneurial opportunity discussed thus far – that is,

⁴ Reviewing the previously mentioned *Explorations in Entrepreneurial History* is a wonderful place to start as these publications contain contributions from all of the social sciences of the day.

scale of innovation and organizational form used to introduce the innovation.⁵ These two dimensions represent a considerable amount of the controversy provoked by the various communities of interest. Journal editors can push for conceptual and empirical clarity by favoring empirical work that includes separate measures of these dimensions in order to develop a necessary and sufficient explanation of 'entrepreneurial opportunity.' It would not be surprising to learn that the thinking and decision-making an individual (partner/team) engages in will vary greatly by the type of entrepreneurial opportunity contemplated; it is also probable that an individual (partner/team) uses a conjoint-type heuristic, but this should be confirmed by empirical evidence rather than assumed. Improved research designs and techniques (e.g., Maine et al., 2015; McKelvie, et al, 2011) make these distinctions possible.

Focal Point # 2: A Socio-Cognitive Process

In addition to the confusion engendered by the numerous definitions of an entrepreneurial opportunity, entrepreneurship discipline scholars created additional communities of interest around the objective or subjective nature of opportunities (Alvarez & Barney, 2010; Busenstorf, 2007; Companys & McMullan, 2007) or around the type of effort hypothesized to drive the opportunity identification process: deliberate search versus effortless discovery (Fiet, 2007; Tang & Khan, 2007) or a process driven by bricolage (Baker & Nelson, 2005) or effectuation (Sarasvathy, 2001). Regardless of which community of interest is used as the lens for capturing entrepreneurial opportunity and/or its associated processes, at some point it involves a person or people perceiving, interpreting, deciding and communicating something.

⁵ See Dahlqvist & Wiklund (2012) for innovation measures that are easy to implement in a study design.

Casting opportunity identification in terms of its socio-cognitive processes represents an area of convergence and has facilitated a considerable amount of theoretical and empirical activity with some interesting results.

However, the problem with casting opportunity identification as a socio-cognitive process is that an empirically-based investigation needs to capture the respondent actually perceiving, interpreting, and deciding rather than recalling. Consequently, the interviews with the disruptors described earlier (Dyer et al., 2008) are intriguing, but not convincing evidence of their cognitive processes. Fortunately, methods that capture real-time cognitive activity – simulations, experiments, and think-aloud protocols are become more frequent research tools in this area (Arentz, et al., 2013; Berglund, 2015; Burmeister-Lamp, et al., 2012; Dew, et al., 2011; Grégoire, et al, 2010; Maine et al., 2015; Newell & Holian, 2017).

Twenty Years Ago. A quick skim of the theoretical frameworks discussed in the previous chapter reveals that while the personal experience of any individual entrepreneur may not feel like this, discipline scholars have found it useful to think about opportunity identification in terms of a multi-stage process, be it the vision-elaboration-decision stages of the creativity insight approach; the motivation-search-discovery-exploitation of the motivated search line of attack; or insight-motivation-reasoning-outcome of the alertness framework (see previous chapter, Figures 1-3).

From a socio-cognitive perspective, one could expect either different cognitive processes to be associated with each state or phase or that different information would be emphasized at each step, or both. For example, Kirzner (1979) strongly argues that the only *unique* or 'entrepreneurial' cognition occurs before and at the moment of insight or idea. The cognitive processes associated with the subsequent stages of shaping the idea and exploiting it conform to the rational-maximizing decision-making

method all other market actors use, an opinion shared by other scholars (Demsetz, 1983; Schumpeter, 1934).

We have some empirical evidence of possible differences in cognitions at different points in the process – at least before what might be considered the exploitation or implementation stage. For example, in the study of exemplar entrepreneurs mentioned earlier, while they were highly aware of their desire to break the status quo (search-discover-created-effectuated phase), they also emphasized the importance of running these ideas by their trusted confidants and/or mentors and evaluating that feedback, incorporating it into the original ideas when merited (opportunity shaping). While breaking the status quo was a strong part of the cognitive processes in the shaping phase, it shared mental space with the reactions from others. There is also evidence that cognitions vary during the mental journey from insight to decision (Dimov, 2007b; Ucbasaran, et al., 2009).

These data support the usefulness of thinking about opportunity identification in terms of stages for investigative purposes – even though informants may not use such terms or feel they experience all the stages enumerated. At this point in time, the data do not support the idea that there is one universal opportunity identification process. Rather, the data suggest that the order and depth of socio-cognitive processes may differ according to the entrepreneur's original intent or circumstance. This may reflect the role of context, which will be discussed in Focal Point #4. Nevertheless, the existing data provide support for Dimov's (2004) anticipation:

'in this sense, opportunities are part of the vision of an observer who sees the world through the lenses of his or her own experiences. I thus converge with the view that opportunities are related to the application of mental schemas (Gaglio, 1997) but also diverge from it in that I regard no schemas as universally better" (p. 70).

Evolution – Evidence of Alertness. An experiment designed to test the role of prior knowledge (Arentz, et al. 2013) provides strong evidence of alertness – or something like it. In the experiment, half the participants were given information that should help them to see an arbitrage opportunity embedded in the experiment; the other half did not receive the information. While the results supported the hypothesized value of prior information, the more interesting finding was that half the participants in the information condition did not notice the arbitrage opportunity while 20% of the participants who did not receive any information did notice it!

In a similar vein, Bonney, Davis-Sramek and Cadotte (2016) used a market simulation to test the alertness propositions of veridical perception and interpretation (Gaglio & Katz, 2001; Kirzner, 1979) which they reframed as market or situational awareness. Their results indicate that the accuracy of mental models was a strong predictor of successful performance during the simulation. However, accuracy did not fully explain performance; what mattered was how the information contained in the models was *interpreted* in the context of the specific marketplace (situation). Market or situational awareness is an interesting and promising line of research because it studies socio-cognitive processes in a forward looking way (Keith, Moon & Hoffman, 2006), which is more in line with how market actors, especially entrepreneurs, behave in the marketplace. Furthermore, market or situational awareness is remarkably consistent with Schumpeter's conceptualization of the opportunity identification process as an entrepreneur embedded in, responding to and shaping specific socio-cultural and institutional contexts (Endres & Woods, 2010).

Going Forward. Graduate students casting about for dissertation topics would do well to consider replicating either of the experiments described above coupled with

think-aloud protocols in order to capture real-time cognitive processes. These kinds of studies hold potential for providing greater insight for both (1) uncovering the tacit knowledge assumed to be part of alertness and (2) the role of interpretation of the specific contexts.

In addition, useful research questions will examine what kinds of cognitions and cognitive processes are associated with each stage or phase, mindful that, in doing so, the discipline needs to explore predictive approaches as well as descriptive ones. That these approaches are not identical can be useful rather than problematic, as long as researchers do not succumb to the temptation to reify their phenomenon of interest.

Given our interest in opportunity identification as a socio-cognitive process, it is impossible to avoid discussion of various reviews of the discipline that bemoan the field's over-psychologizing of entrepreneurship (Klein, 2008; Zachary & Mishra, 2010) and assert that this tendency, along with a focus on opportunity identification will cripple the field. This is an especially curious criticism that, to our knowledge, is not being leveled at other business disciplines such as management, which studies managers making, implementing and evaluating management decisions; or at marketing which examines how to influence the thoughts, perceptions and behaviors of consumers; even finance depends on the fact that investors, regulators and finance officers perceive, assess and decide how to manage business risk and gain – processes that have been greatly illuminated by behavioral economics.

In each of these disciplines, the influences of economic, organizational, social and environmental forces are examined and as noted earlier, our understanding of management benefits from interdisciplinary insights. Nevertheless, each of these disciplines depends on a psychological-cognitive foundation; at the core is an assumption that someone (a person or a team) is perceiving those forces, interpreting

them, and acting (or not) on them. Why should we expect explanations of entrepreneurship to have a different foundation?

However, each of these disciplines incorporates roles (manager, customer, advertiser, investor) as part of their conceptualizations of their phenomena. It is assumed that any given individual happens to occupy a specific role at the time of theorizing or investigating. There is an implicit understanding that no two individuals will enact the role identically, but each will conform to the general cultural expectations about that role within an organization or a society. Furthermore, there is an understanding that the expectations associated with the roles will vary across organizations, across industries, and across societies, yet all will conform to some identifiable thread or premise.

In economic theory, entrepreneurship theory is considered a role (Endres & Woods, 2010; Evans, 1949; Papanek, 1962) and that role is defined as introducing new products, services or processes into the marketplace or correcting slack in resource use (Kirzner, 1979). Gartner (1990) attempted to define the entrepreneurial role using a Delphi technique to analyze the responses of 44 informants who emphasized new organizational development. This finding is not surprising given that the data were collected before most of the burst of disruption described in the introduction to this chapter. Now that we have large numbers of data points available (from all communities of interest), perhaps it is time to revive the conversation about an entrepreneurial role whether through an altered replication of Gartner's study or a special conference. In either case, the discipline needs to (1) reach out to sociologists and anthropologists for whom the concept of role is central to their investigations and theory development and (2) let data guide the direction of discussions and conclusions.

Capturing our Curiosity. Despite its impact, the scope of the Digital Revolution and the sheer volume of business opportunities created by it are not really the most interesting aspects of the event. In 1990, only 10% of US households had access to the Internet, yet before the decade was out, Shawn Fanning and Sean Parker realized the possibilities of using the Internet for file sharing and Napster upended the entire music industry.⁶ What led them to think about music as file-sharing? What led them to believe it was the right time for them to try it or did they even give a thought to timing? Undoubtedly, the reader has his/her own explanations about Napster and can point to countless examples of apps, all of which leads to the need to understand the role of time, the role of context (e.g., the Internet made file-sharing possible) and the role of interpretation or sense-making (i.e., the role of meaning). Oddly enough, the same issues emerged from our own assessment of the empirical work we've discussed thus far, which led us to conclude it might be valuable to highlight these issues as focal points.

Focal Point # 3: Bringing in Time

The idea of distinct stages in a socio-cognitive process reflects the intuitive sense that the nature and focus of cognition changes over time, from something uncertain and speculative at the start, to something more focused and developed later on. What allows us to place such stages side by side and talk of a temporal order or succession is the notion of time. Time has been taken for granted, and unquestioned.

⁶ <https://www.theatlantic.com/technology/archive/2012/04/the-100-year-march-of-technology-in-1-graph/255573/>. Retrieved 12/20/2017.

This perhaps reflects the modeling of Economics on the physical sciences. In his formulation of classical mechanics, Newton needed a concept of time against which motion could be measured. There was no explicit discussion of time, it was taken for granted, as a primitive; yet it allowed the framework to work, albeit in a time-reversible manner (Coveney & Highfield, 1990). In this sense, time is but a homogenous medium that enables us to make distinctions of different states: it is just space – a line – on which we can plot successive states (Bergson, 1913). This is best represented by the ubiquitous timeline that connects a beginning and an end and which we can traverse in either direction.

The length of the line reflects physical time, i.e., the count of the number of standard moments – seconds, minutes, hours, days, or years, that lay in between two events. It is in this empty space of waiting for something interesting to happen, to be marked on the timeline. When we say it takes two hours to drive from London to Bristol, or it took a team one year to complete their product, or it took a team two years to close a sale with a big company, it is an indication for how long we have to wait. It reflects the noise between inputs and outputs.

But waiting is a privilege of being a detached, external observer, of standing outside of the process while seeking to understand what goes on inside it. This overlooks the stress of traffic, the frustration of non-working prototypes, and the dejection of decision delays. The entrepreneur operates inside time.

Discussions of time as it relates to entrepreneurship and opportunities have intensified gradually. Initially, there was a sense that opportunities undergo a process of development as the hunches of initial ideas convert into evidence and momentum as a result of learning and social processes (Dimov, 2007a). The next step has been the realization that this process is uni-directional, irreversible, emergent in nature –

with the main implication that opportunities are clear in retrospect but ambiguous and opaque in prospect (Dimov, 2011). A closer examination of what transpires over time reveals that it is difficult to pinpoint a beginning, an ending, or anything other than some entrepreneurial intent that remains constant throughout the process (McMullen & Dimov, 2013).

This brings us to the emergent hurdle of the distinction between the academic time of theory and the entrepreneur's time of practice. For the observing academic, who aims to contain what is observed in a theoretical framework, time is simply a spatial line against which changes in the observed entities are plotted. In contrast, the entrepreneurial practitioner operates within the current of time with urgency, directionality, and irreversibility that are constitutive of the meaning of this work (Bourdieu, 1990). In addition, because the academic stands outside of the current of time, s/he totalizes the entrepreneurial experience as a means to theorizing about it. Such a synoptic view has a synchronizing effect, giving instantaneous view of facts that exist only in succession (Bourdieu, 1990).

Recent work highlights the diachronic relationship between actions and consequences, i.e., actions can have entrepreneurial consequences (such as the realization of opportunities) that are not accessible to an *a priori* judgment (Lerner, Hunt & Dimov, 2018). The paper suggests that "entrepreneurial processes can be initiated by bottom-up, impulse-driven, non-deliberate actions whose consequences give rise to the purpose that ultimately defines those processes" (p. 63). In other words, when the first actions in what ultimately transpires as a long process take place, there is nothing to suggest that they are 'entrepreneurial' or that they would have some meaningful realization (e.g., the next big entrepreneurial success). Consequently, the reported experiences of the exemplar entrepreneurs (Dyer, et al. (2008) who reported

that they were looking for ideas that would be disrupting should be viewed as causal factors for for experimenting or stirring things up, but not attributed prescient powers.

The broader point here is quite key, in contrast to a synchronic relationship – in which consequences are considered at the time of *actions*, as in the classical decision-making framework – a diachronic relationship emphasizes that actions and consequences are separated by irreversible time. As a result, an action cannot be explained by given consequences (as in a typical functionalist account) but needs a contemporaneous causal structure in which any future is indeterminate. To the extent that action and opportunity are intertwined – i.e., an action is undertaken in the name of opportunity and opportunity requires action to be realized – this has put opportunity inquiry in a tight corner, forcing scholars to face up to the implicit assumptions of their inquiry.

Without a reference to opportunity, an action cannot be deemed entrepreneurial or a person an entrepreneur. But if the referent is to be empirically tractable, i.e., identifiable prior to actual realization, variable and distinct from the individual – then it proves impossible as a construct and thus more fruitfully abandoned (Davidsson, 2015). Nevertheless, it is real because it is an essential part of entrepreneurial discourse (Wood, 2017; Crawford, Dimov, & McKelvey, 2016). At issue here is not our conceptualization of opportunity per se, but the grounding of inquiry in an empiricist philosophy (Ramoglou & Tsang, 2017).

When someone refers to opportunity, it seems that there should be an objective way of determining whether they use this term appropriately. But because this cannot be determined *ex ante*, the construct of opportunity loses its ‘scientific’ footing. The issue, however, lies not in the construct itself, but in the academic scholar’s strive for what Dewey (1960) terms ‘antecedent possession of actuality’ or the sense that

opportunity must stand for something identifiable in the world and not just someone's vision of a different future. Letting go of this ideal aligns with our intuitive, everyday experience of the asymmetry of time, namely the fact that the future is fluid while the past is fixed: a new entrepreneurial effort can be a stellar success or a dud, while the history of an already realized opportunity is fixed. Accepting the indeterminacy of the future to which an articulated opportunity refers, and thus to its inherent fallibility of the concept of opportunity when used in a forward-looking sense, brings us to the question of its context and meaning.

Focal Point # 4: Bringing in Context

Entrepreneurs seem to be acutely aware of timing: many of their stories include the distinct sense of being in the 'right place at the right time.' To an aspiring entrepreneur, they give rise to the simple question: "Am I in the right place at the right time?" It would seem that academic research should have a bearing on this question. But rather than answering it in the practical sense it is posed, the academic enquiry appears to seek an answer that is timeless and context-free: what does it mean to be in the right place at the right time and how might one provide an unequivocal answer?

The ideal of theory has led us to look behind the veneer of excitement and look for permanent essences, when it is entirely possible that the most useful theory of opportunity identification should emphasize the specific context. The theoretical relationships we develop represent rules that rest on the ubiquitous 'ceteris paribus' condition. They are distilled one relationship at a time. But when we look to theory to inform a particular practical situation, we are left not only with the judgment of how the particular theory is to be applied (given the specific conditions) but also with the

judgment of how to sort the range of theories that could be seen as applicable. There is thus a contrast between the 'high ground' of theory, each focusing on well-defined problems that lend themselves to technical solutions, and the 'swampy lowland' of practice, permeated by confusing problems that defy technical solutions (Schon, 1987). As a result, appreciating the context in which entrepreneurs operate entails close understanding of the problems they face (Mayer & Goldstein, 1961; Dimov, 2016).

Recent work has emphasized the essential role of the multiplicity of contexts in which entrepreneurial action takes place – e.g., business, social, spatial, institutional – which help to explain its where, when, and how (Welter, 2011). While these contextual designations represent distinct mappings by an external analyst, they likely form a unified whole, a background of everyday life against which the acting entrepreneur operates and in the light of which his or her particular actions make sense. The kind of knowledge this involves is tacit, effortless type – a knowing how – as opposed to the knowing that, afforded by detached reflection and contained in theory (Dewey, 1922). This distinction suggests that the way an entrepreneur senses that something is the right thing to do or that there is an opportunity for X may be inaccessible to theoretical expression.

The abstraction associated with the development of theories focuses on objects that have been stripped of their significance and relevance for human purposes, as their extraction from the background whole severs the connections that make them intelligible to entrepreneurs in everyday situations (Dreyfus, 1991). Therefore, bringing in the context is not about increasing the number of variables in our theoretical models; theory cannot reconstruct meaning by filling in what has been left out of its

development. Rather, the academic scholar needs to be brought in the context of the acting entrepreneur and develop her interpretation from within its whole.

Focal Point # 5: Bringing in Meaning

The most fascinating issue to emerge from the empirical investigation of opportunity identification is the crucial role of 'meaning.' Whether an opportunity is discovered, created or effectuated – all these are externally imposed interpretations – the entrepreneur is dealing with a specific situation (real or imagined) and has drawn some preliminary opinions about what the available information means and could mean.

The question of meaning is tightly related to the question of time. By virtue of standing outside time or operating inside it, the academic and the entrepreneur make different sense and thus attach different meaning to a given situation. For the academic, meaning can be associated with a representation of the situation in the form of a theory. For the entrepreneur, meaning can be associated with the need to cope with the situation for the sake of achieving a particular purpose. The question of meaning, therefore, draws the distinction between knowledge as representation and knowledge as coping (Rorty, 1979). The former puts emphasis on getting reality right, on ensuring that theoretical concepts stand for something objective in the world. In contrast, the latter puts knowledge in the service of action in terms of whether it brings one closer to achieving one's purpose. In the former sense, a theory is right or wrong (true or false), while in the latter sense it is simply good or bad. This mirrors the distinction between science and design as modes of research, with the former

pursuing theory that is true and the latter theory/models that are useful (Romme, 2003).

Perhaps the biggest implication here is that our predominant focus on knowledge as true representation, which rests on a fundamental distinction between appearance and reality, has led us to view the entrepreneurs' own language as a defective medium for representing their experience and communicating their thoughts (Toulmin, 2001). Thus, we view the entrepreneur's own accounts as biased or noisy, hence our focus on extracting from them some immutable theoretical substance, as in when we recode their think aloud protocols into a different language. As a result, the concept of opportunity gets irreparably distorted as its meaning changes from a tool for coping with an indeterminate future to a mirror image of something external.

As noted earlier, the experiments conducted by Arnetz, et al., (2014) and Bonney, et al., (2016) indicate that, while the presence or absence of information is important, what seems to matter more is how that information is interpreted or what meaning is given to it. Additional evidence comes from an analysis of PSED data (Gartner, et al., 2008) which reports that respondents' views about opportunity appear data driven rather than template matching – in other words, by interpreting the meaning of prevailing market conditions.

Experiments conducted by Demmert and Klein (2003) and Kitzmann and Schiereck (2005), originally designed to test financial motivations for alertness, actually uncovered the power and importance of meaning, specifically the meaning first assigned to a situation, that is, how it is framed. Successful completion of their experiments required participants to perceive alternative uses for various items – much like Duncker's (1945) candle problem or the popular egg drop exercise used in entrepreneurship classes (Sullivan, 2011). Most participants could not imagine

alternative uses for the items and thus could not complete the task; these participants displayed functional fixedness, a cognitive bias to perceive information or objects in only one way, usually the first way encountered. Functional fixedness has long been considered a barrier to creative thought (Stein, 1989). However, the participants who completed the task successfully also first encountered the items in the same way as other participants but were able to imagine different meanings and these alternatives led to success.

An equally fascinating dimension to the role of meaning in opportunity identification lays outside the individual entrepreneur. Case studies conducted about the emerging energy industries (Luksha, 2008; Overholm, 2015; Sine & Lee, 2009) remind us that successful entrepreneurs are able to either convince others (such as investors, government officials, customers, employees) that their opinions about the meaning of the marketplace are beneficial or are able to incorporate feedback from others in ways that extend these opinions rather than reject them. Changes of meaning in the marketplace, then, are as much a produce of social negotiation as individual comprehension. Consider that firms such as Nintendo, Apple, Whole Foods, and Alessi, have changed radically the meaning of commonplace products such as game consoles, mobile phones, nutrition, or tea kettles (Verganti, 2008). This suggests that, while making note of the visionary intended meanings is an important part of understanding the opportunity identity process, it is equally important to examine and understand the social process and real consequences engendered by virtue of creating consensus behind them.

Going Forward: How Do We Build Useful Theories and Investigations?

Point. The past twenty years can be characterized by a gradual search for theoretical clarity, with the aims of outlining the theoretical foundations for the study of opportunities and settling its philosophical underpinnings. This has been a quest for the essence of opportunities as seeds of the future in the present, forming a nexus with Venkataraman's (1997) enterprising individuals. But the attempt to separate this concept from the individual or the social (i.e., market) context creates significant challenges (Dimov, 2011) for which there are no easy solutions. One option is to think about opportunities in a third-person sense (McMullen & Shepherd, 2006) as something that prospective entrepreneurs evaluate for themselves. Another option is to abandon the notion of opportunity (Davidsson, 2015) and thereby put the academic language at odds with the practitioners' (Crawford, Dimov & McKelvey, 2016; Wood, 2017).

It is useful to pause and reflect here that this tension arises only from our implicit quest for a 'true' representation of something external, that is, we want to apply the label 'opportunity' judiciously, with theoretical precision rather than with its everyday meaning. In contrast, the entrepreneurial practitioner looks for something useful and judges it by its consequences, not by its *ex ante* validity. When an entrepreneur refers to an opportunity -- in effect a vested prediction of how the future could play out -- we have become stuck on the formal validity of that prediction, particularly if it is eventually proven wrong. As Toulmin (2003) argues, this is about the difference between the claim 'the entrepreneur did not know' and the 'entrepreneur thought he knew.' In the former case, we question the entrepreneur's backing of the claim and in effect contend that we could have known better if the necessary information had been collected and analyzed, a 'God's-eye justification' (Toulmin, 2003: 218). This, of course, flies in the face of the notion of fundamental uncertainty, to which both the entrepreneur and

academic are subject. In the latter case, we accept the entrepreneur's claim and its inescapable fallibility. Based on Toulmin's distinction between analytic and substantial arguments – the former airtight in terms of formal logic and the latter involving a leap that cannot be logically proven – our theoretical conception of opportunity has effectively looked for analytic arguments. This is an impossible task as it involves the application of standards that can be only be applied retrospectively. In the end, it is an academic problem – of our own making, driven by a quest for formal certainty – and not a practical one.

Stepping away from the formalism of opportunity as a theoretical concept, we can simply accept the way entrepreneurs use the term, namely to create a reference point for their vision and aspirations, through which they can communicate to others and obtain their support and commitments. In this sense, the articulated opportunity is a linguistic artifact that becomes the stepping stone to other artifacts such as business model, organization and markets that mark the entrepreneurial journey (Selden & Fletcher 2015). Perhaps, in their articulation of opportunity, entrepreneurs should be better seen as poets, seeking to convey a point of view, to inspire imagination and elicit positive emotions in others.

Research on entrepreneurial opportunities should aim to capture this poetic interface, when the uncertainty of a new vision has still not dissipated through the subsequent unfolding of events. Rather than detached representation of what entrepreneurs do, inquiry should be immersed in the entrepreneurial activity itself, looking for originality and proliferation rather than some sense of unified convergence. As Rorty (1991) comments, in emphasizing originality more than rigor, “the image of the great scientist would not be of somebody who got it right but of somebody who made it new” (44).

This suggests that, in order to appreciate the complexity of opportunity as a conduit for changing social structures, rather than contain the study within a bounded domain, we should seek the interplay a wide range of perspectives, giving credence to Nietzsche's insight from over 150 years ago:

"From now on, my philosophical gentlemen, let us protect ourselves better from the dangerous old conceptual fantasy which posits a "pure, will-less, painless, timeless subject of cognition," let's guard ourselves against the tentacles of such contradictory ideas as "pure reason," "absolute spirituality," "knowledge in itself"—those things which demand that we imagine an eye which simply can't be imagined, an eye without any direction at all, in which the active and interpretative forces are supposed to stop or be absent—the very things through which seeing first becomes seeing something. Hence these things always demand from the eye something conceptually empty and absurd. The only seeing we have is seeing from a perspective; the only knowledge we have is knowledge from a perspective. The more emotional affects we allow to be expressed in words concerning something, the more eyes, different eyes, we know how to train on the same thing, the more complete our "idea" of this thing, our "objectivity", will be (2007:87)

Counterpoint: Go Where the Fun Is! There is some concern that the discussions about these issues can be interpreted in a way that makes them *appear* intractable and impervious to empirical investigation. That is not the intent and most certainly does not need to be the case. *Quite simply, the discussions about the cutting-edge issues warn against reifying what we are investigating, that is, conferring some kind of object permanence to our concepts and theories.*⁷ The empirical work discussed in this chapter demonstrate ways to maintain the fluidity and complexity of the phenomena. Hopefully, graduate students and academics can find some guidance in this section about some useful ways to proceed and in the process, experience a considerable amount of fun in figuring it all out.

(1) Opportunity identification is a process that can fail at any point in the process.

⁷ Reviewing Whitehead's (1925) fallacy of misplaced concreteness (aka the fallacy of reification) may be useful.

Not only let us allow for failure but study it. Suggesting that the field abandon the concept of ‘opportunity’ communicates a frustration but is not a solution – not only does the entrepreneur find the concept central to his/her thinking and acting, a rose by another name is going to have the same problems – although inventing new language does have a lot of currency in business academe.

The best way to unpack dense concepts is by going deeper rather than abandoning them. We would not be on the brink of the Fourth Industrial Revolution if scientists abandoned DNA protein sequencing after the first few decades of failure. Going deeper, whether through altered replications of previous research or longitudinal studies, and so forth, is just as valuable a contribution as developing unique language.

It would be equally helpful to start studying failures – what part of the opportunity ‘died,’ when, how? Fortunately, there will be many chances to study failures as the spread of the Third Wave of the Digital Revolution accelerates and the Fourth Wave of Biotech begins. A caution though: the social context and meaning as represented in the mind of the entrepreneur needs to be part of the account as well as how/whether this point of view was persuasive to others.

(2) Multi-disciplinary approaches can facilitate the understanding of context and

meaning. The cited studies regarding the establishment of the solar and windmill sectors (Luksha, 2008, Overholm, 2015) benefit from being able to explore the role of political power and influence in shaping the contextual meanings each sector was “allowed” to have, which in turn influenced who might see opportunities. In addition, Overholm (2015) revealed how the solar industry had trouble gaining traction because

it lacked crucial artifacts (i.e. an industry specific contract template and financing products). Anthropologists can help us better understand and identify other symbolic legitimizers.

(3) *Opportunity Identification Uses Many Time Frames.* When contemplating action neither the investigator nor the entrepreneur experience 'timelessness,' the actions of both operate within an irreversible current of directional time (Focal Point # 3) and any theory of entrepreneurial action is equally timebound. For example, the opportunity that was Napster could only be implemented once a vehicle like the Internet existed.

However, both the investigator and entrepreneur can experience a degree of timelessness when they engage in thinking, particularly mental simulations or counterfactual thinking, where key parts of either process are to undo the existing causal chain of action and outcome and then play with or eliminate the temporal order.⁸ To miss this time-fluid human activity that is part of at least one of the routes to opportunity identification is to miss what opportunity identification is all about. But it would be equally misleading to believe that, at this point in time, any investigator knows enough about these processes to reduce them to cognitive laws similar to the Newtonian physical laws. We need hundreds of data points before we can discuss whether we should even look for a law about an ever-evolving and adapting process

(4) *Science is a Conversation.* In our discussion of Focal Points 3,4 and 5, we argue against a point of view that the purpose of empirical investigation is to develop theory that illuminates the "Truth," a timeless, universal truth that has no boundaries

⁸ With all due respect to Baron (2000), regret is only one form of counterfactual thinking and was selected as the exemplar by to introduce the concept of counterfactuals, not define it.

or limits to its application. Another school of thought argues that the goal of an investigation was to not seek truth but to ask useful and important questions. Hopefully, through the investigation of those questions, one might create a useful theory to present to the community of scholars who in turn will ask challenging questions.

The process described by this school of thought is that all science (and Big History) is socially constructed and the social construction *is* what it means to be ‘doing science.’ *The findings are not the science per se nor is the theory; the conversation is the science.* Currently, empirically-based theories, methods, measures, and findings are those that are granted consensual legitimacy because, so far, we’ve found them most *useful* to facilitating shared meaning which is necessary in order to engage in a conversation. That we might find something better or that the next generation might reject every part of the conversation thus far is a given.

Since the pressure is off about finding ‘the truth’ have fun by doing interesting and important work, contribute something useful and enjoy the conversation.

(5) The Third and Fourth Waves of the Digital Revolution represent outstanding opportunities for the advancement of the field. Don’t let them be missed opportunities.

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