



# Importing knowledge from psychology: how it broadens the scope of entrepreneurship research—and helps it avoid the “multi-tower effect”

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**Abstract** Communication between different fields in universities is often hindered by the “multi-tower” problem: each focuses on its own questions and issues and tends to ignore work in other, even closely related ones. This occurs in part, because each field has its own terminology theories, journals, and conferences and because university policies claiming ownership of researchers’ findings restrict them from sharing this knowledge with others. Entrepreneurship, by welcoming input from many different sources—economics, sociology, strategic management, and psychology—avoids the “multi-tower” problem; this is one of its important strengths. In his own work, the author has sought to broaden the range of entrepreneurship research by “importing” findings and theory from psychology that are relevant to understanding entrepreneurs, the personal factors that affect their success, and important aspects of the entrepreneurial process overall.

**Plain English Summary** Entrepreneurship is open to input from several different fields—economics, strategic management, and psychology. This is a strength that facilitates its sophistication and progress. In his research, the author has sought to “import” knowledge, findings, and theory from psychology to entrepreneurship research and theory. This helped

expand the scope of entrepreneurship and contributed to the understanding of entrepreneurs and several aspects of the entrepreneurial process. The research findings have implications for future research and education of potential entrepreneurs.

**Keywords** Entrepreneurship · Entrepreneurs · Contributions from psychology

**JEL Classification** L26 · L31

## 1 Introduction

Academe is often described as an “ivory tower,” rising above and separate from the world around it. In fact, though, it actually consists of many ivory towers, each separated from the others, and each surrounded by “moats” that reduce communication between them. As a result, different fields are, to some extent, worlds of their own, focused on their own issues and questions, and only partially aware of the knowledge and advances in nearby towers. I will refer to this throughout this paper as the “many-towers problem.”

These moats, it is important to note, are not created intentionally. Rather, they reflect the fact that each tower—each department, school, or field—has its own vocabulary, research methods, journals, and sponsors different conferences. There are also barriers imposed by universities that also restrict communication both within and outside departments of

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schools themselves. This fact was called to my attention when I was fortunate enough to have the experience of team-teaching a course on entrepreneurship with the Nobel Prize-winning physicist, Ivar Giaever. The goal of the course is to acquaint students with the entire entrepreneurial process, from the creation of new ideas, through their application to potentially useful products (innovation), and then, in some instances, the development of these new products and services through the founding of ventures or other means.

During this course, Dr. Giaever described his own experiences in starting a new company based on his research. In addition, he often expressed concern about recent developments at many universities that were, he believed, restricting the free exchange of information between researchers. The policies to which he referred included the requirement that all faculty agree to assigning ownership (usually partial) in the findings of their work, especially, if these offered the possibility of new products or services that could generate future profits. The rationale for these policies was that the university had provided basic services to the faculty—offices, space for the laboratories, maintenance services, support staff, library facilities, and other benefits. Having facilitated faculty members' work in these ways, universities felt justified in claiming rights to faculty research findings and any practical benefits it might generate. If universities sought patents on these findings, researchers could not share their findings with others during the period between patent application and its receipt, a period that could be 2 years or more. If they did release this information, a patent could not be issued because knowledge of their work was already in the public domain.

Since science and technology depend on such open and free exchange, Dr. Giaever noted that in some instances, this could result in a situation in which researchers would waste time, effort, and resources by conducting research that has already been completed. In a worst-case scenario, it could amount to "reinventing the wheel." Such issues often arose in the past not from legal restrictions, but largely because of limited means of communication. History is dotted with instances in which scientific advances and useful products based on them were developed simultaneously by different researchers or inventors. For example, Charles Darwin and Alfred Russel Wallace both

described natural selection in the same year 1839; Louis Daguerre and Henry Fox Talbot both invented the first photographic method almost simultaneously. In an especially disturbing case, Antonio Meucci and Alexander Graham Bell developed a working telephone at much the same time and using almost identical technology. Because Meucci lacked sufficient funds and did not speak English well (he was a recent immigrant to the U.S.), he did not seek to patent his invention while Bell, possessing these needed resources did. Their work and results were virtually concurrent, but Bell "won" and reaped tremendous financial rewards from it. Meucci, in contrast, faded from view and is recognized only in a small and unknown museum on Staten Island, a borough of New York City.

During my career, I have worked in several different fields: social psychology, industrial/organizational psychology, organizational behavior, and entrepreneurship. The first three have barriers of varying strength (e.g., different terminology and research methods) that reduce effective communication with other fields. In contrast, such barriers are much weaker in entrepreneurship—it welcomes input from other fields and encourages communication between researchers both within and outside it. Despite this openness, however, barriers do sometimes exist. When they do, they are unrelated to our field's willingness to accept and use knowledge from many sources. Rather, they often relate to differences in the meaning of words in different fields. Here is one example of such barriers in operation.

During a presentation on campus, a visiting scholar used the word *exploitation* several times. The speaker was using this term as it is used in entrepreneurship—to refer to the development of opportunities. After the talk ended, one of the people in the audience (which included persons from several different departments) asked: "Are you concerned about the morality of this exploitation? Doesn't it trample on human rights and freedoms?" The speaker paused for a moment but then realized that the questioner was using a different definition of "exploitation" than the one used in the field of entrepreneurship. She then explained that in entrepreneurship, the term exploitation referred simply to the development of an opportunity. It is interesting to note that the person who posed this question was a graduate student in sociology, where the term "exploitation" does indeed have a negative meaning.

## 2 Entrepreneurship: how it avoids the multi-tower problem

Given its origins in several different fields—economics, strategic management, sociology, and psychology—entrepreneurship might be expected to be especially vulnerable to the “multi-towers” effect. Fortunately, though, the culture of our field—which encourages input from many fields—minimizes these barriers. I discovered this when, at the urging of my friend and colleague Venkataraman, I submitted a paper to the Babson College Entrepreneurship Research Conference (1997). The topic was counterfactual thinking among entrepreneurs; this is a term familiar to most psychologists and refers to imagining what *might have been* if something had been different—a different decision had been made, and environmental circumstances had been changed. I expected it to be reviewed with skepticism but much to my surprise the paper was accepted. Moreover, when I presented it, I was told by several attendees that the field needed more of this kind of input from psychology. Instead of encountering the expected barriers that impede communication between different fields, the paper was welcomed. In contrast, in other fields in which I have worked, I doubt if this would have been so.

This experience led me to wonder: Could concepts, findings, and theories of psychology offer useful contributions to entrepreneurship and entrepreneurship research? I found this possibility very attractive because as my friends often suggest, I am a “synthesizer”—I tend to see connections between different fields, different lines of research, and different topics, connections that have, perhaps, been overlooked in the past. Perhaps, then, I reasoned, I could serve as an “importer” of relevant knowledge from psychology? I realized that psychology had already contributed to our field through research related to such topics as achievement motivation, several aspects of personality, attributions, and aspects of risk-taking. But I also believed that many other connections, too, existed. These basic ideas strongly shaped the nature of the research I then conducted over the next twenty-five years. A large portion focused on bringing relevant aspects of psychology into our research to enhance our progress toward our key goals—understanding entrepreneurs and many aspects of the entrepreneurship process. If my efforts

in this respect have encouraged other researchers—many much younger and better trained than myself—to continue these efforts, I am truly gratified.

Having described the basis of my personal interest as serving as an “importer” of relevant knowledge from psychology, I will now offer brief descriptions of some of the topics I investigated and short summaries of its major findings. These will indeed be brief because much of this information has already been presented in articles and chapters. A large portion of this research focused on entrepreneurs who are, I suggest, the “engine” that makes the process of entrepreneurship unfold. As Stephen Covey, author of “The 7 Habits of Highly Effective People” once remarked: “We see the world, not as it is, but as we are—or, as we are conditioned to see it.” My training and experience in psychology prepared me to see entrepreneurship in terms of people—how entrepreneurs think: their creativity, energy, efforts to achieve challenging goals, their motives, and how these and many others contribute to their success. Below is a sample of the research I conducted relevant to this personal perspective.

## 3 A brief review of some of my research in the role of “importer”

Before proceeding to describe a portion of this work, I should emphasize that much of it was collaborative in nature—it was conducted with several outstanding colleagues. I also recognize that in recent years, many other researchers have expanded and improved on my efforts through excellent studies of their own; they richly deserve my praise and full credit for their research.

## 4 Some psychological processes that play a role in entrepreneurship

Psychology, as a field, focuses on individuals and interactions between them—how they behave, think, and relate to others, and recently, the biological and neurological processes that underlie these processes (e.g., Branscombe & Baron, 2018). In my own research (again collaborative), I have investigated the role of several of these individual-level variables and

processes in entrepreneurship and in entrepreneurs' success.

#### 4.1 Social skills: competence in interacting with others

Social skills, which together contribute strongly to the ability to get along well with others, have been found in literally hundreds of studies to influence individuals' behavior and cognition in a wide range of settings and, more importantly, the results they experience in those settings. Overall, outcomes are more favorable for individuals high in social skills than for those lower in these competencies. This has been found to be true with respect to friendship (persons high in social skills have more friends), sales, popularity of doctors among their patients, and even legal proceedings—socially skilled defendants are less likely to be seen as guilty and receive lower penalties if they are (Del Prette & Del Prette, 2021). Social skills include several distinct, but related proficiencies: *social perception*—the ability to perceive others accurately; *impression management*—skill in making favorable first impressions on others; *expressiveness*—being able to express emotions clearly and openly and manage their expression; and *social adaptability*—skill in adapting one's actions to current social situations, in a sense being a “social chameleon” (e.g., Ferris et al., 2001; Harris et al., 2007; Wayne & Liden, 2016).

Given the strength and breadth of the effects of these skills, my colleagues and I wondered if social skills would also influence entrepreneurs' success and that of their new ventures. To examine this question, we conducted several studies (Baron & Henry, 2011; Baron & Tang, 2009; Baron et al., 2006). The overall answer to this basic question was *yes*. More specifically, our most informative results include the following:

- Entrepreneurs' social capital—who they know, their experience, and education—helps them “Get through the door”—gain access to potential customers or investors. It is social skills, however, that then help them “close the deal” and obtain orders for their product or service or the funding they need
- Three aspects of social skills—social perception, skill at impression management (self-promotion), and expressiveness—are positively related to new

ventures' financial success (e.g., sales growth and increase in the number of employees)

- The positive effects of social skills on firm financial performance are mediated by two variables—entrepreneurs' success in obtaining information and in obtaining needed human and financial resources.

In sum, skills in establishing and maintaining positive relations with others play an important role in entrepreneurs' success. To put it in other and more colloquial terms: for entrepreneurs, as for other individuals, when people like them and enjoy their company, many doors, including those leading to success, open; if, instead, people have negative reactions to them, many of these doors close—sometimes directly in their face!

#### 4.2 Setting goals: realistic or unrealistic?

A large body of research in social psychology industrial/organizational psychology, and organizational behavior, indicates that goals—both ones set by individuals themselves and ones set by others (e.g., a boss or other persons in authority)—play a key role in performance on many different tasks in a multitude of different settings (e.g., Locke & Latham, 2013). To produce these positive outcomes, though, goals must be specific, clear, challenging but attainable, accepted by the persons seeking to achieve them, and provide feedback concerning progress toward these goals (Lock & Latham, 2019).

Entrepreneurship research indicates that entrepreneurs are, overall, high in self-efficacy—the belief that they successfully perform almost any task they undertake (Hmieleski & Baron, 2008). This is far from surprising because individuals who choose to become entrepreneurs often know that most new ventures fail, many within the first two or three years of their existence. One result of high self-efficacy (personal confidence) may be a tendency to set unrealistic goals—ones that cannot reasonably be obtained. Research on goal setting indicates that failure to attain personal goals results in stress, discouragement, reduced motivation, loss of confidence, and, to put it simply, giving up. These findings raise the question of whether entrepreneurs' self-efficacy would be positively related to their tendency to choose unrealistic goals, and doing so would, in turn, be negatively

related to the performance of their new ventures. Our results offered support for both relationships (Baron et al., 2016b).

We then investigated another question: what factors or processes would moderate these relationships? That is, what would reduce the strength of the positive link between entrepreneurs' self-efficacy and their choice of unattainable goals and therefore weaken the negative link between setting such goals and firm performance. We suggested that one aspect of self-regulation—self-control—could have such moderating effects. Self-control is a process that helps individuals adjust their behavior so that it facilitates progress toward important goals and, simultaneously, avoids actions that may impede such progress. Self-control might, we reasoned, reduce entrepreneurs' tendency to set goals they cannot realistically hope to achieve. The findings of our research supported this prediction. Entrepreneurs' self-control moderated the effects of self-efficacy on choosing unrealistic goals: the higher their self-control, the lower their tendency to set and pursue unrealistic goals and, consequently, the higher the performance of their new ventures (e.g., Fujita, 2011).

In addition, results indicated that the relationship between goal difficulty and new venture performance is curvilinear in nature. Up to a point, increasing goal difficulty is positively related to firm performance; challenging goals increase entrepreneurs' motivation and efforts to attain them. Beyond this point, these beneficial effects are overridden by growing discouragement, stress, and loss of confidence, so that further increments in goal difficulty result in lower rather than higher firm performance.

Overall, our research helps clarify the role of self-efficacy in entrepreneurs' choice of goals and especially, its potential to increase their tendency to choose unrealistically high objectives. More generally, our findings add to the long list of factors that contribute to the failure of new ventures: entrepreneurs, encouraged by their high self-efficacy, set goals that they cannot realistically hope to attain, and as a result experience the negative effects resulting from failure to achieve them.

#### 4.3 Stress: why entrepreneurs experience low rather than high levels

Entrepreneurs face high levels of stress (Kiefl et al., 2024). They must deal with many challenging and sometimes overwhelming tasks, such as obtaining needed resources, developing their products or services to the point where they are ready for use by potential customers, finding these customers and persuading them to try the new venture's products, and overcoming the dominance of existing competitors. Although these sources of stress certainly exist, the question of whether they produce the negative effects on entrepreneurs' psychological and physical health that have been observed in many studies.

A theory in industrial/organizational psychology indicates that despite the stress-inducing situations they frequently encounter, entrepreneurs may actually experience relatively low rather than high levels of stress. This theory, known as ASA theory (Schneider et al., 1995, 2000), was initially applied to employment in organizations, but by extension and with minor modifications, it is relevant to entrepreneurs and the level of stress they experience. ASA theory suggests that in making career choices, individuals pass through three important phases or choice points. The first is *attraction*—they are attracted to a specific field or career, such as entrepreneurship, in part because they believe they have the skills and characteristics required for success in that field—they will fit into it well. The second phase is *selection*—which for entrepreneurs involves their decisions to move ahead and enter this field or occupation. Only some people attracted to a given field take concrete actions to enter it while others, for various reasons, do not. Then, in a third phase, *attrition*, some of those who have made the “go ahead” decision realize that they do not have “what it takes” to succeed in this career or experience disappointment after they enter it, and decide to leave.<sup>1</sup> ASA theory suggests that entrepreneurs who actually forge ahead and adopt this role and remain in it, are a highly select group, and one factor on which they may be selected is resistance to stress. Those who are low in their ability to cope with stress may soon experience levels of stress so high

<sup>1</sup> In organizations, this term refers to the selection of the best applicants for a specific job.

that they decide to withdraw from the field or occupation they have chosen. The result is that entrepreneurs are, as a group, better able to cope with high levels of stress than other persons. In fact, they cope so well that subjectively, they do not experience the high levels of stress that they would be expected to endure. This prediction was confirmed in our research (Baron et al., 2016a). Founders of new ventures reported lower levels of stress than persons in large national samples—persons in many other fields.

Another question related to this finding is: What factors contribute to entrepreneurs' high tolerance for stress? We predicted that one may be psychological capital—high levels of hope, optimism, self-efficacy, and resilience (Newman et al., 2014). Specifically, we hypothesized that the higher the entrepreneurs' psychological capital, the lower the level of their perceived stress. This prediction, too, was confirmed.

Overall, then, the results of our research indicate that entrepreneurs are indeed exposed to conditions that would be expected to generate high levels of stress for them. Because of the ASA process, however, they are high in their ability to cope with or withstand stress, and so, somewhat unexpectedly, they experience low rather than extremely high levels of stress. This, in turn, may be one factor that plays a role in their success.

#### 4.4 Positive affect (feelings): the emotional side of life and entrepreneurs' success

Positive affect—positive moods and feelings—has been found to have many beneficial effects. It is related to enhanced performance on many tasks, better social relations with others, increased energy, enhanced self-regulation, increased flexibility in terms of responding to changes in environments, heightened creativity, life satisfaction, and personal health (Lyubomirsky et al., 2005). In sum, persons who frequently experience positive affect reap many benefits from their feeling “up.” Although most of the evidence for such benefits has been obtained with groups other than entrepreneurs, we suggested that they would also occur for entrepreneurs.

Before proceeding, it is important to clarify that positive affect can take two forms—state and trait affect. *State affect* is a response to specific, external events, such as obtaining needed resources or closing an important sale, and is relatively temporary. *Trait*

*affect*, in contrast, refers to an inclination tendency to experience positive affect generally, across situations, and over even long periods of time.

Entrepreneurs are, as a group, optimistic and high in self-efficacy. This suggests that they are relatively high in dispositional positive affect and experience many benefits from this personal tendency. My colleagues and I tested the effects of such dispositional positive affect on entrepreneurs and their companies in several studies. As an overview, we found that among founding entrepreneurs, dispositional positive affect is associated with creativity (Baron & Tang, 2011) and that this creativity deriving in part from positive affect is related to innovation in their companies. Additional findings (Baron et al., 2011) indicated that there is a positive relationship between entrepreneurs' positive affect and other measures of their company's performance, such as sales growth. There appear, however, to be limits to such positive outcomes. At very high levels of positive affect, these beneficial effects weaken and may in fact reverse so that further increments in positive affect reduce entrepreneurs' success. Reasons for these findings were offered by Baron et al. (2012). Low to moderate levels of positive affect are related to enhanced cognitive flexibility, adoption of efficient decision-making strategies, enhanced opportunity recognition, and openness to a wide range of information. Very high levels of positive affect, in contrast, are related to potentially disruptive effects such as a tendency to overlook details, reduced capacity to monitor their own actions, and increased impulsivity in making decisions. In short, there can be “too much of a good thing” where positive affect is concerned. This suggests that an ideal founding team would include individuals with high, moderate, and low trait positive affect. Those high on this dimension would contribute energy, creativity, and high levels of motivation; those relatively low on this dimension would help temper the excessive optimism and the tendency of their partners to rush ahead without careful consideration of relevant factors and potential negative outcomes.

#### 4.5 Attractiveness: is it a plus for entrepreneurs?

A very large literature in psychology indicates that personal attractiveness is an asset. Attractive persons have more romantic partners, are more likely to be successful as job applicants, exert more influence



in groups, and are even more likely to receive “not guilty” verdicts from juries (Berscheid, 2022).<sup>2</sup> Given the strength and pervasiveness of these effects, I and my colleagues wondered if personal attractiveness would also be beneficial for entrepreneurs. We investigated this possibility in several related studies (Baron et al., 2006). In one, participants read descriptions of ideas for new products and saw photos of the entrepreneurs who had proposed these ideas; the persons shown in the photos had previously been rated as relatively high or low in attractiveness by another group of individuals. Results indicated that the ideas (which were the same for both attractive and unattractive entrepreneurs) were rated higher when the entrepreneurs were attractive. In another study, individuals watched entrepreneurs making presentations to potential investors. The entrepreneurs received higher ratings when they were attractive. Finally, in a third study, entrepreneurs’ attractiveness was found to be positively related to their financial success (personal income).

Overall, being personally attractive does appear to provide entrepreneurs with an advantage, and since appearance is modifiable at least to a degree, this finding suggests that efforts by entrepreneurs to enhance their personal appearance can be well worth the effort.

#### 4.6 Pattern recognition and identifying opportunities

Physicians often diagnose diseases in terms of patterns of symptoms rather than a single one; scientists seeking to predict earthquakes base their predictions on several kinds of information; police seeking to solve crimes analyze fingerprints in terms of patterns, comparing them to other fingerprints with computer programs that perform this task. In sum, identifying patterns in many kinds of data is a key step carried out in numerous fields and for many different purposes.

Recognizing viable, *bona fide* opportunities is a central task for entrepreneurs and one they must perform effectively if they are to have a realistic chance of success. In the terminology of signal detection theory (Swets, 2014), they must avoid “false alarms,”

concluding that an opportunity exists when, in fact, it does not, or “misses”—failing to notice an opportunity that is actually present.

Signal detection theory and research relating to it suggested to my colleagues and me that pattern recognition may also play a role in entrepreneurs’ decisions concerning the existence of opportunities. Entrepreneurs, too, search for patterns in available information and use the results to decide whether an opportunity worth pursuing exists or does not exist. They search for these patterns in several sources of input: information about changes in technology, demographics, markets, government policies, existing products or services, competitors, and general economic conditions. If favorable patterns emerge (e.g., growing markets, flaws in existing products, relatively weak competition), they may decide to move ahead, but if these patterns are absent, they may conclude that there is no real opportunity, or at least none worth pursuing. In sum, to reach accurate decisions concerning whether to proceed with efforts to develop an opportunity, entrepreneurs often use pattern recognition—the process of “connecting the dots” to determine if recognizable and favorable patterns emerge.

Research by myself and a colleague (Baron & Ensley, 2006) provided support for this framework. We found that repeat (i.e., experienced) entrepreneurs had clearer, richer, and better-defined cognitive frameworks for identifying a real business opportunity than first-time entrepreneurs. The greater experience of repeat entrepreneurs had equipped them with better cognitive means of separating real opportunities from false ones (Baron & Henry, 2011).

A pattern recognition perspective on opportunity recognition also helps explain why some persons, but not others, identify specific opportunities. Those possessing relevant cognitive frameworks have an advantage in perceiving patterns in the available and often complex arrays of information.

### 5 Concluding thoughts: the benefits for entrepreneurship of “importing” knowledge from psychology

It is a truism to state that entrepreneurship is a complex process. This basic fact is universally accepted in our field. Further, it is also widely recognized that this process does not always move in an orderly

<sup>2</sup> These effects are similar to those for positive affect, and it is possible that attractiveness is, itself, one source of such affect.

progression. Often, creativity and the ideas it generates are the start of the process, but sometimes, opportunities are identified because someone else suggests them. I experienced this when I sat next to Leonard Nimoy, a star of the “Star Trek” TV series. During our conversations, he mentioned that he thought the popularity of the program derived from the fact that it combined several factors—growing interest in space flight, new technology, “black holes,” and theories about travel faster than the speed of light. Together, he noted, these made a pattern (he used the word “cluster”) that appealed to large audiences. Did his remarks trigger my thinking about pattern recognition and, much later, its role in opportunity recognition? I will never know for certain, but I do recall reflecting on his comments in the years that followed, especially during conversations with a colleague (Rebecca Henry), who suggested that pattern recognition and signal detection might both play a role in the recognition of opportunities.

One thing about which I *am* certain, though, is that entrepreneurs are, in one respect, the center of the process—they are, as I noted earlier, the individuals (or, often, founding teams) that make it happen. To the extent that is true, then answering questions about them that are relevant to entrepreneurship such as why they decide to pursue this high-risk role, what they are seeking from it, how they think about events and outcomes along the way, how they react to setbacks and disappointments, how they seek to gain competitive advantage, how they make important decisions, and the skills and knowledge they need to succeed is an important task. In addition and perhaps of special importance is the question of how they influence others to provide resources they need, or later, to become customers. To the best of my knowledge, this question has not yet received attention in research, but a wealth of information about it exists in psychology and might provide important insight into its role in entrepreneurship.

Overall, I believe, that psychology has much to offer to our efforts to understand the entrepreneurial process and how to help entrepreneurs reach their goals. I also realize, though, that to understand this process—one through which entrepreneurs create something new and better—we need input from several sources and several perspectives—economics, sociology, strategic management, and psychology. The fact that entrepreneurship is open to receiving

and utilizing knowledge from all these fields is, I believe, one of its key strengths. That, in turn, helps it avoid the “multi-tower” problem that is all too common in academe. In one sense, combining these different perspectives and bodies of knowledge is similar to attaining harmony: separate voices merge to create something different—and in many respects better—than could be produced by each voice (field) alone.

## Declarations

**Conflict of interest** The author declares no competing interests.

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