



Saras Sarasvathy: recipient of the 2022 Global Award for Entrepreneurship Research

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Abstract Professor Saras Sarasvathy is the recipient of the 2022 Global Award for Entrepreneurship Research. Her research contributions have fundamentally changed and invigorated the conversation in the domain of entrepreneurship research. Sarasvathy's work on effectuation emphasizes how entrepreneurs operate based on available resources, think in terms of affordable loss rather than profit maximization, leverage trustworthy partnerships, and treat unforeseen contingencies as opportunities rather than problems. It has led and inspired a new generation of researchers in the quest for a better understanding of

how entrepreneurs make their decisions and the unfolding of the entrepreneurial process.

Plain English Summary The winner of the 2022 Global Award for Entrepreneurship Research, Saras Sarasvathy, has improved our understanding of how entrepreneurs make decisions and has developed new concepts and ideas about the entrepreneurial process. Professor Sarasvathy introduced the term “effectuation” to emphasize how (expert) entrepreneurs operate in uncertain, unclear, and ill-structured problem situations. In short, she developed five principles

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used by entrepreneurs to control rather than predict the future. These principles emphasize how entrepreneurs use available resources and trustworthy partners as well as think in terms of affordable loss rather than profit maximization. Entrepreneurs also often see unforeseen surprises as opportunities rather than problems. This view has now emerged as one of the key approaches in entrepreneurship theory, empirics, and practice within management research on entrepreneurship.

Keywords Global Award for Entrepreneurship Research · Entrepreneurship · Effectuation · Causation

JEL Classification L26 · D81

1 Introduction

The winner of the Global Award for Entrepreneurship Research 2022 is Professor Saras Sarasvathy. She has managed to build on a long and well-established stream of research on decision making while giving it a unique expression in the context of entrepreneurial decision making. In Sarasvathy's view, uncertainty and goal ambiguity play a central role in the entrepreneur's deliberations in the new venture creation process. Therefore, entrepreneurs should focus on controlling rather than predicting the future. Her conceptual framework for understanding entrepreneurial decision-making has reached well beyond the boundaries of entrepreneurship research, including the domains of marketing, strategy, and international business. In that capacity, it is a prime example of how entrepreneurship scholars can contribute to the development of neighboring domains of research. Her research has also found considerable use in entrepreneurship education and among practitioners.

Professor Sarasvathy is the originator and main flagbearer of the *effectuation view* on entrepreneurship, which has emerged as one of the key approaches to entrepreneurship theory, empirics, and practice within management research on entrepreneurship. Building on, and skillfully synthesizing, core ideas from Hebert Simon, Frank Knight, James March, and others, she posits that entrepreneurs work from the resources in their possession to formulate goals (rather than working from goals to the resources that

are needed to realize goals); do not maximize profits (but rather seek to only do things where one can afford the losses); engage with trustworthy partners with whom they work intensely and who they allow to influence, perhaps in a decisive manner, the venture; and seek to leverage contingencies in the sense that surprises are seen as possible opportunities rather than problems.

As an originator, driving force, and ambassador for entrepreneurship research, Sarasvathy embodies all qualities instrumental for maintaining entrepreneurship as a vigorous, impactful, and practically relevant domain of research. She is a highly visible and influential scholar in management research on entrepreneurship. In contrast to many other entrepreneurship scholars, she has mainly taken her cues, not from economics, but from Herbert Simon's rich and multifaceted research program. Her contributions have also offered practicing entrepreneurs a perspective that resonates with and enlightens their experiences (see Read et al., 2010). At the same time, she has given the academic community a novel tool popular for explaining and teaching entrepreneurship. This article provides a broad overview of Saras Sarasvathy's contributions to entrepreneurship research.

1.1 The global award for entrepreneurship research: brief background

The Global Award for Entrepreneurship Research was initiated in 1996 and has since become the most prestigious award for entrepreneurship research. It consists of 100,000 Euros and a statuette designed by the internationally renowned Swedish sculptor Carl Milles. According to the original statutes, the award should be given to "a person who has produced scientific work of outstanding quality and importance, thereby giving a significant contribution to theory-building concerning entrepreneurship and small business development, the role and importance of new firm formation and the role of SMEs in economic development." The main aims of the award are (1) to highlight the importance of research produced in the areas of entrepreneurship and small business, (2) to further stimulate and promote research within these fields, and (3) to diffuse state-of-the-art research among scholars, practitioners, and people involved in small business development.

The domain of entrepreneurship research is broad (Carlsson et al., 2013), which means that entrepreneurship research that can be considered for the award is undertaken in several different disciplines, including economics, management, sociology, history, business administration, geography, and psychology. Any aspect of entrepreneurship research is eligible, including the environment and the organizations in which entrepreneurship is conducted, the character of the entrepreneur (personality, cognitive and affective aspects), or the role of the entrepreneur and/or the entrepreneurial function in a wider sense (at the level of the community, region, country, or industry).

One ambition of the Prize Committee is that the award-winning contributions, seen together over a longer time span, reflect the extraordinary breadth of entrepreneurship as a research field in the social sciences. The key criteria for prize-worthy contributions are originality and influence (Braunerhjelm & Henrekson, 2009). It is recognized that contributions can be influential in many ways. A contribution can, for example, be influential because it has had a significant impact on subsequent scientific work, furthered entrepreneurship as a field of research (through creating important data bases or by starting influential journals, scientific communities, etc.), furthered entrepreneurship education and training at the academic level, and/or influenced policymaking and society more broadly.

When selecting prize-worthy contributions, the Prize Committee emphasizes the qualitative aspects of the contributions of candidates. Quantitative metrics, such as citation counts and impact factor-adjusted publication volumes, do provide important information about candidates, but they will never replace qualitative judgment. This means that quantity will never substitute for quality, and it is even possible for a scholar to receive the award for a single landmark contribution.

1.2 A short biography of the 2022 winner: Saras Sarasvathy

Saras D. Sarasvathy was born in India 1959. She is currently employed as the Paul M. Hammaker Professor in Business Administration at the University of Virginia's Darden Graduate School of Business. She is also the Jamuna Raghavan Chair Professor in Entrepreneurship at the Indian Institute of Management in Bangalore.

Sarasvathy majored in statistics from the University of Bombay in her native India and received

her MSc (Entrepreneurship and Finance) from the Carnegie Mellon University in 1994. She graduated from the Carnegie-Mellon Ph.D. program in 1998 with a thesis supervised by Lester Lave and Herbert Simon, the latter being a particularly decisive influence on Sarasvathy's thinking.

Following her graduation, Sarasvathy was an Assistant Professor, first at the University of Washington and then the University of Maryland's R H Smith School of Business, until she became an Associate Professor at the University of Virginia's Darden School (2004). Following two chaired professorships at Indian Institute of Management, Bangalore and Nankai University, she received her current Paul M. Hammaker chair professorship at University of Virginia's Darden School in 2016.

Professor Sarasvathy's honorary positions and degrees include an honorary doctoral degree from Babson College (conferred in 2013). In 2015, she became the "Jubilee Professor" at Chalmers University in Sweden (from which she also received an honorary doctorate in 2022). In other words, Sarasvathy has, at about the same time, held four different professorships; a strong indication that her research and ideas are in high demand.

A further strong indication of Sarasvathy's standing in the entrepreneurship field is her involvement with the journals where she has served as Associate Editor for one of the entrepreneurship field's leading journals, the *Journal of Business Venturing* (from 2005 to 2010) and as an associate editor of the *Strategic Entrepreneurship Journal* (2009 to 2014). She has received several prizes and awards (and nominations for such prizes and awards) for her research and has given many keynote addresses in various contexts.¹ She has published about 60 articles in academic journals, more than 30 book chapters, 8 monographs, and many white papers, shorter pieces, etc.

2 Sarasvathy's contributions

2.1 Overall ideas

Professor Saras Sarasvathy has come to be uniquely associated with "effectuation." Effectuation is the noun

¹ More than 60 are listed on Sarasvathy's CV: <https://www.darden.virginia.edu/sites/default/files/inline-files/CV-Sarasvathy-February2023.pdf>

form of the verb, effectuate, that is, “to bring about.” She explicitly distinguishes effectuation from the traditional means-ends approach to behavior and decision-making, as portrayed in, for example, the rational choice model. In a nutshell, the effectuation approach is based on five principles (Sarasvathy, 2008).

- The *bird in hand* principle (entrepreneurs start with what they have)
- The *affordable-loss* principle (entrepreneurs think in terms of affordable loss rather than profit maximization)
- The *crazy-quilt* principle (entrepreneurs cooperate with parties who, because they are willing to commit, are (highly) trustworthy)
- The *lemonade* principle (entrepreneurs will look at how to leverage contingencies)
- The *pilot-in-the-plane* principle (when all effectuation principles are put together by an entrepreneur)

These principles assert that entrepreneurs work from the resources (of any kind) they already possess, including close and distant network contacts; do not seek to maximize profits but instead start from affordable losses; seek out trustworthy partners with whom they work intensely and in general seek to engage people in such a way that only those committed will join; and seek to leverage contingencies in the sense that surprises are seen as possible opportunities rather than problems.

In characterizing her approach to entrepreneurship as one of effectuation, Sarasvathy performs two rhetorical moves.² First, she coins a new concept/construct, indicating the novelty of her approach. Second, she indicates that the effectuation approach is directly suited to “bring things about,” indicating its direct relevance to practice.

The origin of the approach lies in Sarasvathy’s doctoral research at Carnegie-Mellon University’s Tepper School of Business in the 1990s. This research was supervised by Lester Lave, an environmental economist and expert on risk, and Herbert Simon, no doubt

the single most important influence on Sarasvathy’s thinking. In her doctoral thesis Sarasvathy examined the decision-making processes of twenty-seven expert entrepreneurs (i.e., entrepreneurs with more than fifteen years of experience including the founding of multiple ventures and taking at least one company public [ranging in market capitalization from \$250 M to \$6.5B]), posing the following two research questions: “What commonalities and differences exist in the decision-making process of a group of expert entrepreneurs who started with the same idea for a new venture and face exactly the same set of decisions in building it?”, and, “In the face of non-existent or not-yet-existent markets, what underlying beliefs about the predictability of the future influence the decisions expert entrepreneurs make as they build a new venture?”³

She applied the protocol analysis methodology pioneered by Ericsson and Simon (1993) to examine how these twenty-seven expert entrepreneurs dealt with pre-specified problem situations of varying degrees of open-endedness. The findings anticipate the distinction between causation and effectuation. Sarasvathy notes that in open-ended situations a large majority of the entrepreneurs take an approach to problem-solving that starts from the resources in their possession. It is important to stress that such resources are thought of quite broadly, so that they also include, for example, personal capabilities and network connections. Entrepreneurs then work iteratively from those resources to goals that may be feasible, given the resources and other constraints embodied in the case descriptions. In contrast, they do not first state a goal and then look for the resources that would be necessary to reach the goal. The mapping from resources to an opportunity set starts from resources.

In an early article co-authored with Lave and Simon (Sarasvathy et al., 1998) and drawing on the material from the thesis, Sarasvathy and her co-authors compare entrepreneurial decision-making with the decision-making of bankers, presumably to capture the essential decision-making differences between situations that are fundamentally open-ended and those that are less so. Sarasvathy et al. (1998) present the decision-makers with a variety of risks and examine how they handle risk through content (and statistical) analysis of think-aloud protocols. They find that entrepreneurs

² These are, however, a bit misleading for the basic reason that the “causal” approach with which Sarasvathy contrasts effectuation is of course fundamentally also about “bringing about outcomes,” just in a different way.

³ Cited from <https://effectuation.org/effectuation-101>.

accept risk as given and are focused on controlling outcomes at a given level of risk. Bankers, in contrast, focus on desired outcomes and then seek to influence (lower) risks within the problem space being suggested by the outcome. An overall conclusion of this paper is that it is misguided to think of entrepreneurs as more inherently risk-taking than other decision makers, as has often been done in the entrepreneurship literature. What is different is their approach to risk rather than how much risk they assume. This paper points rather directly towards the effectuation (entrepreneurs) and causation (bankers) distinction with which Sarasvathy is so prominently associated.

2.2 Key early statements of the effectuation approach

The key early statement of effectuation research is Sarasvathy's paper, "Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency," published in the *Academy of Management Review* in 2001 (Sarasvathy, 2001). The paper is key, first, because it presents the fundamental ideas that embody much of Sarasvathy's subsequent research, and, second, because it has become a very influential/highly cited paper with 6898 cites at the time of writing this article. In the paper, Sarasvathy starts off with a simple working definition of the two core constructs in the title (i.e., working from goals towards resources or from resources towards goals), and then takes the reader through two simple, but often referred to, examples of cooking practices that illustrate their differences. She then unfolds basic principles of effectuation, making it clear that effectuation does not exclude causation—whether decision-makers prefer one or the other approach depends on how they perceive the problem situation—and that effectuation is not uniquely linked to entrepreneurship but is a general aspect of human decision-making in ambiguous and ill-structured problem situations. In the process of unfolding this argument, she forges a link to the thinking of Weick, Mintzberg and March. To use a slightly later formulation, effectual approaches are warranted in problem situations characterized by a "three-dimensional problem space consisting of Knightian uncertainty..., Marchian goal ambiguity,... and Weickian enactment" (Sarasvathy, 2004, p. 525). Several propositions do, however, establish explicit

links to entrepreneurship (e.g., successful ventures are predicted to rely more on forming alliances and partnerships than on planning-based competitive strategies).

Theory papers published at about the same time as Sarasvathy (2001) elaborate on and contextualize the Simonian dimensions of the effectuation approach. Thus, Sarasvathy (2004) places effectuation ideas in the context of the economics of the firm (some of these ideas are anticipated in Sarasvathy, 1997). She starts from the premise that "all prevalent economic theories of entrepreneurship are theories of the firm" (p. 520).⁴ The problem with starting from the firm, rather than from the entrepreneur, Sarasvathy argues, is that this leads to an "instrumental view" of entrepreneurship (p. 522).⁵ Specifically, it imposes a particular means-ends structure (because firms are founded and designed for a specific purpose) on a problem situation that really is ambiguous and ill-structured, echoing the distinction between causation and effectuation. Rather than starting from the existence of firms, these should be seen as designed artifacts that entrepreneurs construct to enable their process of going towards goals. Thus, we should adopt an instrumental view of firms, not of entrepreneurs. This theme is then unfolded based on Simon's thinking on symbolic cognition and Lakoff's thinking on semantic cognition.

While Augier and Sarasvathy (2004) make relatively little direct reference to effectuation, nevertheless their paper is an elaboration of the underpinnings of the approach. Thus, the authors highlight the relevance of Herbert Simon's ideas on docility (which they interpret as the natural willingness of humans to give and accept advice), near-decomposability, and artifacts to the field of "strategic organization" (*aka* strategic management). These ideas are supportive of effectuation ideas, as docility and near-decomposability add nuance to the description of the entrepreneurial process of muddling-through, and artifacts tap into the notion

⁴ This is a somewhat questionable claim: Foss and Klein (2005) show that this is not the case at all, and that, on the contrary, linking entrepreneurship and the theory of the firm is a major research gap.

⁵ Indeed, the title of Sarasvathy's Ph.D. dissertation is *How do firms come to be? Towards a theory of the prefirm* (<https://www.proquest.com/docview/304422765?pq-origsite=gscholar&fromopenview=true>).

that firms are designed devices that entrepreneurs set up to assist this process. Sarasvathy (2003a) also contains reflections on the implications of key Simonian ideas for entrepreneurship, reporting on conversations with Simon.

Simon's thinking on design in *The Sciences of the Artificial* (Simon, 1969) has been critical to the development of the effectuation approach, and in particular for linking effectuation to the formation of firms. This book and its implications for entrepreneurship are discussed in a number of Sarasvathy's papers (e.g., Augier & Sarasvathy 2004; Sarasvathy, 2013; Sarasvathy et al., 2008). Sarasvathy et al. (2008) analyze the peculiar design problems that face entrepreneurs. Based on a case study of Howard Schultz' founding of Starbucks, they dimensionalize the problem situations that entrepreneurs face in terms of a 2×2 matrix where one dimension maps the "emphasis on prediction" and the other maps the "emphasis on control" in terms of "high–low" (effectuation logic is high on both dimensions). They show how the four different problem situations mapped out by the 2×2 matrix each illuminate different aspects of the founding decision. The 2×2 matrix is also exploited in an earlier paper (Wiltbank et al., 2006), published in the *Strategic Management Journal*, and making the case for "non-predictive strategy," that is, the kind of non-predictive control emphasized by the effectuation approach as the appropriate one under situations of, e.g., high uncertainty and ambiguity.

2.3 Refining and delineating the effectuation approach

Much of Sarasvathy's early work (which we may think of as approximately the first half of her career since her 1997 Ph.D. thesis) consists of conceptual ground-clearing and establishes the importance and legitimacy of her own thinking on entrepreneurship as an effectual process. Much of this is summarized in Sarasvathy's 2008 book-length treatment of the effectuation approach (Sarasvathy, 2008). Rhetorically, this is to a large extent accomplished by drawing on the thinking of significant scholars such as Hebert Simon and James March and establishing the closeness of effectuation ideas to their line of thinking. The process of clarifying and delineating the effectuation approach across many papers involves good recycling of ideas and (appropriately adjusted) material. However, this is

not unusual for academic "hedgehogs" (to use Isaiah Berlin's famous term; Berlin, 1953), who concentrate on launching and refining one or a few big ideas over their academic careers.

Professor Sarasvathy has indeed been continuously at work refining the effectuation approach, sometimes in response to critique, and often concentrating on specific explanatory mechanisms in the approach. For example, Sarasvathy and Dew (2008) respond to arguments that the effectuation approach presupposes "over-trust" (Goel & Karri, 2006), that is, more trust in partners than is warranted by objective circumstances. Dew et al. (2009) elaborate on the "affordable loss" component of the effectuation approach to illuminate the initial decision of an entrepreneur to make a commitment to a de novo venture. Another example of refining the effectuation approach by examining one of its key components is Harmeling and Sarasvathy (2013) which deals with the issue of turning unexpected contingencies into opportunities in the empirical context of the formation of two different entrepreneurship education initiatives.

Professor Sarasvathy has also been continuously engaged in clarifying the *similarities* and *differences* to neighboring approaches. For example, Harmeling et al. (2009) explore the relations of the effectuation approach to other influential currents in entrepreneurship research, notably the opportunity recognition view associated with Scott Shane (Shane, 2003; Shane & Venkataraman, 2000) and the creation view associated with Alvarez and Barney (2007), in the light of case vignettes of entrepreneurial effectuation and pragmatist philosophy. Sarasvathy and Dew (2013) explore the relations between Austrian approaches to the firm and the entrepreneur, notably the judgment-based approach of Foss and Klein (2012), concluding that while significant similarities exist, there are also differences (e.g., regarding the extent to which partners are seen as crucial in the entrepreneurial process). Dew et al. (2008a) explore the relations between Clayton Christensen's thinking on disruption and the effectual approach. One argument here is that to overcome the so-called innovator's dilemma (i.e., when incumbent firms are overrun by disruptive innovations as they base future strategies on current customers and their alleged demand), firms should put less trust in predictive and causal approaches and instead use a more non-predictive effectual logic to deal with non-existent or not-yet-existent markets.

Last, but not least, Sarasvathy has sought to *expand* the effectuation approach in applying it beyond the domain of entrepreneurship, and by pointing to its practical relevance. Countless numbers of practicing entrepreneurs will have endorsed and espoused the core ideas and processes expounded in her research, and effectuation has become a standard element in entrepreneurship education and programs around the world.

2.4 Beyond entrepreneurship

A noteworthy attempt at generalizing effectuation is represented by Sarasvathy and Venkataraman (2011) which explores similarities and analogies between the scientific method and the “entrepreneurial method.” Thus, just as the scientific method is a generally useful approach, not just in the domain of science, but also in practice, so is the entrepreneurial method. It is simply a ubiquitous aspect of human action (an argument also associated with Mises, 1949). And whereas experimentation is the dominant logic of the scientific method, effectuation is a possible candidate for being the dominant logic of the entrepreneurial method.

Another ambitious generalization is represented by the attempt of Dew et al. (2008b) to build a general behavioral theory of the entrepreneurial *firm*. Fundamentally, the idea is to let effectuation ideas inform the typical behavioral theory of the firm notions of influencing stakeholder commitments under goal ambiguity (effectuation points to over-trust), achieving control through managing expectations (effectuation points to non-predictive strategies), and the importance of adaptation (effectuation points to exaptation as an alternative, complementary approach). In a related, later paper effectuation ideas are put to use in the context of understanding firms’ internationalization process (Kalinic et al., 2014). Building on ideas stemming from the Uppsala internationalization model, Kalinic et al. (2014) argue that an effectual approach to internationalization speeds up the process of internationalization. International expansion and entrepreneurship is also the theme of Sarasvathy et al. (2014) which again address effectuation in the context of the Uppsala model, offering case illustrations.

A third line of application of the effectuation logic addresses marketing issues (Read & Sarasvathy, 2012; Read et al., 2009). For example, in Read et al. (2009), published in the *Journal of Marketing*, the authors explore a number of implications of

entrepreneurial expertise for the marketing strategy of start-ups, arguing, for example, that expert entrepreneurs are more likely to explicitly visualize building a whole business (rather than make isolated marketing decisions), are more likely to imagine alternative markets, and are more likely to price higher. The research design involves a thinking-aloud methodology implemented in the context of entrepreneurs and managers (the subjects are MBA students).

2.5 Other contributions

Professor Sarasvathy has also worked on issues in entrepreneurship that go beyond effectuation. For example, Pacheco et al. (2010) are a comprehensive review paper on institutional entrepreneurship. Venkataraman and Sarasvathy (2008) deal with entrepreneurship in a regional context. Sarasvathy (2003b) is an interesting critique of the evolutionary anthropology of Cosmides and Tooby as it applies to moral issues. Hayward et al. (2010) address the issue of how over-confidence may help explaining serial entrepreneurship. De Colle et al. (2014) construct an interesting argument that corporate social responsibility standards that constrain creative thought processes (because of excessive formalization and the like) can backfire and lead to less innovativeness when it comes to behaving in a socially responsible way.

Nielsen and Sarasvathy (2016) present an intriguing argument based on Danish longitudinal data that many serial entrepreneurs are “lemons” in the sense that, having already failed with a venture they start a second venture without the human and social capital endowments that are necessary to succeed with the venture. Townsend et al. (2018) perform a detailed overview and undertake a deep discussion of the many types of “knowledge problems” that challenge entrepreneurs. Recent papers extend the effectuation approach to sustainability challenges (Sarasvathy & Ramesh, 2019) and technology ventures (Mauer et al., 2021), and continue the exploration of what effectuation implies beyond the original context of entrepreneurship (Alsos et al., 2020).

2.6 Practice implications

As suggested above, the effectuation approach was conceived in a fairly practical context; it emerged from the study of think-aloud protocols of real, experienced entrepreneurs in a rather inductive manner (though informed

by Simonian ideas on problem-solving). Sarasvathy has continuously stressed the practice implications of her ideas, and contrasted these with existing practice implications, typically the strong emphasis on the business plan which she sees as an encapsulation of a causation logic. This has involved coining felicitous metaphors for her key ideas, as explained and discussed above. The first effectuation textbook arrived in 2010 (Read et al., 2010).

Other aspects of Sarasvathy's practice orientation are her active engagement as a contributor of numerous op-eds to Indian newspapers, *British Airways In-Flight Magazine*, and other non-academic outlets; and her stints as board member of entrepreneurship education initiatives (e.g., IDEA, Denmark, and the International Master in Entrepreneurship Education and Training, University of Aarhus, Denmark).

3 A brief assessment of effectuation research in the landscape of contemporary entrepreneurship research

The effectuation approach stems from several different sources that emphasize various aspects of decision-making, such as Knight's notion of uncertainty, March's idea on playfulness, behavioral decision-making theory, and, in particular, Simon's ideas on problem-framing, expertise, and the role of designing the artificial as instruments for our purposes. Most other distinct approaches in management research on entrepreneurship are mainly based on some adaptation of economics-based ideas. For example, the opportunity discovery approach of Shane and Venkataraman (2000) is based on the thinking of Kirzner (1973), and the judgment-based approach of Foss and Klein (2012) is based on the work of Knight (1921). In contrast, the effectuation approach is thus solidly based on distinctly behavioral ideas. This contributes to the uniqueness of the approach within the entrepreneurship research field.

However, the approach has many close as well as distant theoretical cousins. For example, the basic notion that entrepreneurs work with the resources at their disposal and that goals and actions emerge from a process of tinkering and experimenting with resources is akin to the basic resource-based notion that services emerge from resources and from combining resources and what services emerge is dependent on creativity, foresight, how resources are combined, etc. (Penrose, 1959). Aldrich's (1990) work has strongly emphasized

the importance of continuous entrepreneurial adaptation to an evolving environment. Similarly, Aldrich, Burt, and others have long emphasized the importance of resources that go beyond the resources directly under the control of the entrepreneur (human capital, finance, physical resources, IPR, etc.), and include network ties, and other manifestations of embeddedness. The notion that entrepreneurial action co-creates the environment is not a novel one (e.g., it is central to Schumpeter's original vision). However, other foundational ideas in the effectuation approach (e.g., the emphasis on affordable loss and the idea that entrepreneurs are over-trusting) are harder to trace to a previous source.

In any case, piecing these ideas together has allowed Sarasvathy (with her many co-authors, particularly Nicholas Dew and Stuart Read) to proffer theoretical and empirical insights that are undeniably novel and path-breaking in the context of entrepreneurship research. For example, Dew et al. (2009) suggest that entrepreneurs who take an effectuation approach (involving the affordable loss principle) will be more willing to make the initial decision to commit to a venture than those who use, for example, net present value reasoning deriving from a detailed business plan. Read et al. (2009) assert that expert entrepreneurs are likely to discount, or even entirely ignore, predictive information (and will perform better for this reason).

In line with its Simonian roots and its initial, almost inductive statement (Sarasvathy, 1997; Sarasvathy & Dew, 2013, p. 289), the effectuation approach is highly empirically oriented. However, so far, the main methods of empirically implementing the approach have been based on the think-aloud protocol method and on small-sample and case study methods. There is not much large-sample work of a more conventional kind on effectuation. This is a factor that up to this point may have somewhat limited its influence in the entrepreneurship research field and in management more generally, as sustained broad impact seems to be associated with doing more "conventional" empirical work.

Indeed, the first serious attempt to construct and validate a measurement scale for effectuation did not emerge until Chandler et al. (2011). This is a feature shared with other emerging approaches in the management research literature on entrepreneurship, such as the creation view (Alvarez & Barney, 2007) and the judgment-based approach (Foss & Klein, 2012) that also either lack well-established measurement scales or have only very recently developed such scales.

A specific problem that challenges conventional empirical work lies in highly complex latent constructs that themselves feed into the meta-construct of effectuation. However, the evolution of management research suggests that such problems can and will be overcome. For example, strategy's dominant perspective, the resource-based view, took about one and a half decades to develop serious measurement instruments. In the entrepreneurship field Kirzner's ideas on entrepreneurial alertness (Kirzner, 1973), which were adopted by Scott Shane and deployed in his opportunity recognition framework took about three decades before they were empirically implemented. Building cumulative empirics simply takes time, and this is the case of the effectuation approach as well.

4 Conclusion

Professor Saras Sarasvathy is a worthy recipient of the Global Award for Entrepreneurship Research. She has developed pathbreaking research on entrepreneurial decision making and the entrepreneurial process. Her research has led to a new key construct and a new approach to entrepreneurship. Sarasvathy has also emerged as a major institution-builder within the entrepreneurship field, and she has done much to forge links between entrepreneurship theory and practice. Her contributions have also offered practicing entrepreneurs a perspective that resonates with and enlightens their experiences. At the same time, she has given the academic community a novel and popular tool for explaining and teaching entrepreneurship.

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References

- Aldrich, H. (1990). Using an ecological perspective to study organizational founding rates. *Entrepreneurship Theory and Practice*, 14(3), 7–24.
- Alsos, G. A., Clausen, T. H., Mauer, R., Read, S., & Sarasvathy, S. D. (2020). Effectual exchange: From entrepreneurship to the disciplines and beyond. *Small Business Economics*, 54(3), 605–619.
- Alvarez, S. A., & Barney, J. B. (2007). Discovery and creation: Alternative theories of entrepreneurial action. *Strategic Entrepreneurship Journal*, 1(1–2), 11–26.
- Augier, M., & Sarasvathy, S. D. (2004). Integrating evolution, cognition, and design: Extending 'Simonian' perspectives to strategic organization. *Strategic Organization*, 2(2), 169–204.
- Berlin, I. (1953). *The hedgehog and the fox: An essay on Tolstoy's view of history*. Weidenfeld & Nicolson.
- Braunerhjelm, P., & Henrekson, M. (2009). Awarding entrepreneurship research: A presentation of the Global Award. *Entrepreneurship Theory and Practice*, 33(3), 809–814.
- Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics*, 41(4), 913–930.
- Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of Business Venturing*, 26(3), 375–390.
- De Colle, S., Henriques, A., & Sarasvathy, S. D. (2014). The paradox of CSR standards. *Journal of Business Ethics*, 125(2), 177–191.
- Dew, N., Sarasvathy, S. D., Read, S., & Wiltbank, R. (2008a). Immortal firms in mortal markets? An entrepreneurial perspective on the innovator's dilemma. *European Journal of Innovation Management*, 11(3), 313–329.
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2008b). A behavioral theory of the entrepreneurial firm. *Journal of Economic Behavior and Organization*, 66(1), 37–59.
- Dew, N., Sarasvathy, S. D., Read, S., & Wiltbank, R. (2009). Affordable loss: Behavioral economic aspects of the plunge decision. *Strategic Entrepreneurship Journal*, 3(2), 105–126.
- Ericsson, K., & Simon, H. (1993). *Protocol analysis: Verbal reports as data* (2nd ed.). MIT Press.
- Foss, N. J., & Klein, P. G. (2005). Entrepreneurship and the theory of the firm: Any gains from trade? In R. Agarwal, S. A. Alvarez, & O. Sorenson (Eds.), *Handbook of entrepreneurship: Disciplinary perspectives* (pp. 55–80). Springer.
- Foss, N. J., & Klein, P. G. (2012). *Organizing entrepreneurial judgment*. Oxford University Press.
- Goel, S., & Karri, R. (2006). Entrepreneurs, effectual logic and over-trust. *Entrepreneurship Theory and Practice*, 30(4), 477–493.
- Harmeling, S., & Sarasvathy, S. D. (2013). When contingency is a resource: Education entrepreneurs in the Balkans, the Bronx and beyond. *Entrepreneurship Theory and Practice*, 37(4), 713–744.
- Harmeling, S., Sarasvathy, S. D., & Freeman, R. E. (2009). Related debates in ethics and entrepreneurship: Values,

- opportunities and contingency. *Journal of Business Ethics*, 84(3), 341–365.
- Hayward, M., Forster, W., Sarasvathy, S. D., & Fredrickson, B. (2010). Beyond hubris: How highly confident entrepreneurs rebound to venture again. *Journal of Business Venturing*, 25(6), 569–578.
- Kalinic, I., Sarasvathy, S. D., & Forza, C. (2014). ‘Expect the unexpected’: Implications of effectual logic on the internationalization process. *International Business Review*, 23(3), 635–647.
- Kirzner, I. M. (1973). *Competition and entrepreneurship*. University of Chicago Press.
- Knight, F. H. (1921). *Risk, uncertainty, and profit*. Heineman.
- Mauer, R., Nieschke, S., & Sarasvathy, S. D. (2021). Gestation in new technology ventures: Causal brakes and effectual pedals. *Journal of Small Business Management*. <https://doi.org/10.1080/00472778.2021.2002877>
- Nielsen, K., & Sarasvathy, S. D. (2016). A market for lemons in serial entrepreneurship? Exploring type I and type II errors in the restart decision. *Academy of Management Discoveries*, 2(3), 247–271.
- Pacheco, D. F., York, J. G., Dean, T. J., & Sarasvathy, S. D. (2010). The co-evolution of institutional entrepreneurship: A tale of two theories. *Journal of Management*, 36(4), 974–1010.
- Penrose, E. T. (1959). *The theory of the growth of the firm*. Oxford University Press.
- Read, S., & Sarasvathy, S. D. (2012). Co-creating a course ahead from the intersection of service dominant logic and effectuation. *Marketing Theory*, 12(2), 225–229.
- Read, S., Dew, N., Sarasvathy, S. D., Song, M., & Wiltbank, R. (2009). Marketing under uncertainty: The logic of an effectual approach. *Journal of Marketing*, 73(3), 1–18.
- Read, S., Sarasvathy, S. D., Dew, N., Wiltbank, R., & Ohlsson, A. V. (2010). *Effectual entrepreneurship*. Routledge.
- Sarasvathy, S. D. (1997). How do firms come into existence? Towards a theory of the entrepreneurial process. In P. D. Reynolds, W. D. Bygrave, N. M. Carter, P. Davidson, W. B. Gartner, C. M. Mason, & P. P. McDougall (Eds.), *Frontiers of entrepreneurship research*. Babson College.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26(2), 243–288.
- Sarasvathy, S. D. (2003a). Entrepreneurship as a science of the artificial. *Journal of Economic Psychology*, 24(2), 203–220.
- Sarasvathy, S. D. (2003b). Founding moral reasoning on evolutionary psychology: A critique and an alternative. *The Ruffin Series on Business Ethics*, 4, 135–144.
- Sarasvathy, S. D. (2004). Making It happen: Beyond theories of the firm to theories of firm design. *Entrepreneurship Theory and Practice*, 28(6), 519–531.
- Sarasvathy, S. D. (2008). *Effectuation: Elements of entrepreneurial expertise. New horizons in entrepreneurship series*. Cheltenham: Edward Elgar.
- Sarasvathy, S. D. (2013). Mazes without minotaurs: Herbert Simon and the sciences of the artificial. *European Management Journal*, 31(1), 82–87.
- Sarasvathy, S. D., & Dew, N. (2008). Effectuation and over-trust: Debating Goel and Karri. *Entrepreneurship Theory and Practice*, 32(4), 727–737.
- Sarasvathy, S. D., & Dew, N. (2013). Without judgment: An empirically-based entrepreneurial theory of the firm. *Review of Austrian Economics*, 26(3), 277–296.
- Sarasvathy, S. D., & Ramesh, A. (2019). An effectual model of collective action for addressing sustainability challenges. *Academy of Management Perspectives*, 33(4), 405–424.
- Sarasvathy, S. D., & Venkataraman, S. (2011). Entrepreneurship as method: Open questions for an entrepreneurial future. *Entrepreneurship Theory and Practice*, 35(1), 113–135.
- Sarasvathy, S. D., Simon, H. A., & Lave, L. B. (1998). Perceiving and managing business risks: Differences between entrepreneurs and bankers. *Journal of Economic Behavior and Organization*, 33(2), 207–226.
- Sarasvathy, S. D., Dew, N., Read, S., & Wiltbank, R. (2008). Designing organizations that design environments: Lessons from entrepreneurial expertise. *Organization Studies*, 29(3), 331–350.
- Sarasvathy, S. D., Kumar, K., York, J., & Bhagavatula, S. (2014). An effectual approach to international entrepreneurship: Overlaps, challenges and provocative possibilities. *Entrepreneurship Theory and Practice*, 38(1), 71–93.
- Shane, S. (2003). *A general theory of entrepreneurship*. Edward Elgar.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217–226.
- Simon, H. A. (1969). *The sciences of the artificial*. MIT Press.
- Townsend, D., Hunt, R., Sarasvathy, S. D., & McMullen, J. (2018). Knowledge problems and entrepreneurial action. *Academy of Management Annals*, 12(2), 659–687.
- Venkataraman, S., & Sarasvathy, S. D. (2008). The fabric of regional entrepreneurship. Included in ten papers selected for the first World Entrepreneurship Forum held under the aegis of French President Nicolas Sarkozy in Evian, November 13–15, 2008.
- von Mises, L. (1949). *Human action*. Yale University Press.
- Wiltbank, R., Dew, N., Read, S., & Sarasvathy, S. D. (2006). What to do next? The case for non-predictive strategy. *Strategic Management Journal*, 27(10), 981–998.

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