

## **FROM GOLDBLOCKS TO GUMP: A RESEARCH AGENDA FOR ENTREPRENEURIAL MECHANISMS DESIGN**

SARAS D. SARASVATHY  
Darden School of Business  
University of Virginia  
Charlottesville VA 22903

WILLIAM R. FORSTER  
Lehigh University

ANUSHA RAMESH  
Indian Institute of Management

### **INTRODUCTION**

In this essay we argue that the exclusive focus on research aimed at isolating the characteristics of entrepreneurs as opposed to others, while intellectually exciting and even practically valuable, may have blinded us to another wholly new and exciting possibility – namely, the design of mechanisms that allow all kinds of individuals to start new ventures and to provide useful and valuable tools to enable them and their stakeholders to build enduring organizations. While Goldilocks searches for just the right kind of soup, chair and bed, Forrest Gump traipses along accepting his mother’s dictum that life is like a box of chocolates and that you never know what you’re gonna get. For over four decades of empirical investigations into entrepreneurial decision making, we have tried to model Goldilocks, while our subjects have happily muddled their way through the entrepreneurial process in a Gump-like fashion. Or so it appears from the data we have accumulated.

Whether it is personality traits, opportunity recognition processes, heuristics and biases or strategies for success, differential findings from carefully imagined, rigorously executed studies in entrepreneurial decision making lead to conflicting results that make cumulation and convergence frustratingly difficult. So what are we to do? We can either keep searching for the perfect Goldilocks solution for each of these, we can work on specifying contingencies under which different quantities are optimal, or we can simply turn from specifying the ideal characteristics of the decision maker to identifying, inventing and testing specific mechanisms that any old Gump can use to build useful, valuable and enduring ventures. This last way has the added advantage of making entrepreneurship an experimental and actionable discipline, and not only a phenomenological setting to test theories from more “scientific” disciplines.

### **A BRIEF REVIEW OF BEHAVIORAL AND EXPERIMENTAL ECONOMICS**

Decision making under uncertainty has a long history dating back to Pascal in 1654 (Todhunter, 1865). It was imported into economics when prominent economists such as Knight and Hayek began highlighting the role of uncertainty and partial knowledge as fundamental challenges to the decision making frameworks in vogue at the time (Hayek, 1984; Knight, 1921).

More recent empirical studies point to a healthy trend in the spirit of Richard Thaler's (2000) predictions of the move *From Homo Economicus to Homo Sapiens*. Yet the literature is also ripe with conflicting, even paradoxical, findings. The growing literature on overconfidence (also comparative optimism) is a case in point. On the one hand, studies show that being too confident can negatively affect decision making in new firms (Hayward, Shepherd, & Griffin, 2006) and can lead to taking on excessive risk (Li & Tang, 2010). On the other hand, Busenitz and Barney (1997) indicated that being overconfident could help entrepreneurs more readily establish new ventures, and Dimov (2010) found empirical evidence that confidence was associated with new venture emergence. Hayward et al (2010) also postulated that hubris could be positively related to repeat venturing, and is likely to have other positive performance effects.

Simply stated, both risk averse and risk loving individuals can become successful entrepreneurs; pursuit of resources currently outside one's control (Stevenson & Jarillo, 1990) may be as viable a strategy as leveraging only what you already have control over (Baker & Nelson, 2005); both confidence and overconfidence can feed effective action; and both due diligence and overtrust may provide useful criteria for putting together and growing a network of valuable stakeholders (Sarasvathy & Dew, 2008). In other words, in adopting a Goldilocks approach to entrepreneurial decision making, we may be over-specifying the decision maker in our models.

Cumulative evidence from the vast and growing body of research in behavioral economics leads to the conclusion that maybe we should dumb down our assumptions about what it takes to be a good decision maker in entrepreneurship. We have paraphrased this conclusion into the phrase "from Goldilocks to Gump." We will show how moving from Goldilocks to Gump is beginning to find support from two other relevant and rising tides of studies – one from experimental economics and the other from entrepreneurship.

## **FROM GOLDILOCKS TO GUMP IN EXPERIMENTAL ECONOMICS AND ENTREPRENEURSHIP**

In his Nobel lecture, economist Vernon Smith (2003) provided a stylized review and summary of decades of research in economic psychology, behavioral economics, and experimental economics to examine which assumptions about human behavior are relevant for the understanding of how and why markets work. He began with the Scottish philosophers Mandeville and Adam Smith whose arguments have been concurrently sanctified and vilified as rational man, or *Homo Economicus* or what Vernon Smith refers to as the standard socioeconomic science model of rationality (SSSM). He then linked SSSM to "constructivist rationality" and contrasted it with "ecological rationality" and emphasized that "both are essential to understanding and unifying a large body of experience from socioeconomic life and the experimental laboratory, and in charting relevant new directions for economic theory as well as experimental-empirical programs." (Smith 2003: 466).

A constructivist rational order emphasizes "conscious deductive processes of human reason," and "... uses reason to deliberately create rules of action, and create human socioeconomic institutions that yield outcomes deemed preferable, given particular circumstances, to those produced by alternative arrangements." (p 468) An ecological rational order is conceptualized "as an undesigned ecological system that emerges out of cultural and biological evolutionary processes; homegrown principles of action, norms, traditions, and "morality." Furthermore, "Ecological rationality uses reason-rational reconstruction to examine

the behavior of individuals based on their experience and folk knowledge, who are "naive" in their ability to apply constructivist tools to the decisions they make; to understand the emergent order in human cultures; to discover the possible intelligence embodied in the rules, norms, and institutions of our cultural and biological heritage that are created from human interactions but not by deliberate human design." (p 469-470).

Smith and his colleagues have been working in an area that has come to be called "economic systems design" which seeks to go beyond examining the intelligence (economic rationality) inherent in emergent social orders. It does so by investigating counterfactual social orders – i.e., norms, institutions and cultures that did not actually emerge, but could have given relevant historical constraints.

To understand what is -- the tip of the knowledge iceberg -- requires understanding of a great deal that is not. Experimental work investigating the microstructures of efficient institutions evolved in the lab, in the field and through history all point to the conclusion that we may be over-specifying the rationality requirements of individual decision makers and underestimating the role of heterogeneity in human behavior. Recent evidence from studies of entrepreneurial expertise argues for the same within the specific realm of entrepreneurship. The mechanisms that decision makers use and the processes through which they use them may be more important than specific characteristics of the decision makers themselves.

The non-predictive logic of effectuation does not make any assumptions about precedents either at the micro or macro levels. The model does not require standard assumptions of *Homo Economicus* such as rationality, utility maximization, or ordered preferences (Thaler, 2000), nor does it require the preexistence of particular psychological traits or institutional frameworks, nor even the prior existence of opportunities, particular regulatory or technological regimes, or socio-economic conditions such as specific types of human and social capital. The logic, therefore, is generally applicable to *Homo sapiens* and it is both descriptive and prescriptive under a wide variety of institutional and historical environments. Furthermore, in de-emphasizing the specific characteristics of individual decision makers and focusing on mechanisms and processes, effectuation works well with sociological approaches that seek to provide behavioral microfoundations for institutional logics (Thornton, Ocasio, & Lounsbury, 2012). In sum, the model of the decision maker at the heart of effectuation coheres well with the findings from behavioral and experimental economics research.

The effectual decision maker is not postulated to be a special type of human being – Goldilocks and Gump are equally plausible candidates. The decision maker at the heart of the process may be smart or dumb, rational or irrational, risk averse or risk loving, self-interested or altruistic, or more realistically, a bit of all of the above at different times over different domains of action. The only requirement on the decision maker is that he or she is willing to work with others. The effectuator does not act alone and the effectual process is interactive. And it is interactive in at least three different ways – over time, across actors and with its environment however defined. Effectual interactions at times leverage, strengthen, modify or destroy existing institutions, in part or as a whole. This may happen intentionally or as an unanticipated consequence of the effectual process.

More generally, these interactions often result in marginal transformations of all elements involved, including decision makers' own preferences and intentions. Ergo, a research agenda that seeks to investigate entrepreneurial decisions based on a more realistic model of human behavior would move us away from trying to specify special characteristics of entrepreneurs or

structural elements for success and toward spelling out mechanisms and processes through which entrepreneurs and their stakeholders transform current realities into new opportunities.

## **A RESEARCH AGENDA FOR ENTREPRENEURIAL MECHANISMS DESIGN**

### **Hybrid entrepreneurship – Take the fork**

The occupational choice problem is usually modeled as a choice between staying in a wage job versus starting one's own venture. Recent research has shown, however, how the plunge decision modeled as an occupational choice problem itself may be irrelevant for a substantial part of the entrepreneurial population that starts new ventures in a hybrid manner – that is while continuing to work in a wage job (Folta, Delmar, & Wennberg, 2010). Research on this new “hybrid” entrepreneurship offers an important mechanism for decision making when faced with tradeoffs. It implements Yogi Berra's famous prescription, “When you come to a fork in the road, take it.” It is easy to visualize experimental as well as empirical studies to flesh out our understanding of this and other hybrid mechanisms in a variety of other entrepreneurial decisions.

Funding decisions are a case in point. Entrepreneurs and their early stakeholders in new ventures are often faced with funding decisions involving debt versus equity. With the exception of Cornelli and Yosha (2003) and Gompers (1995) almost no studies in the new venture setting have looked at the role of the hybrid funding instrument – convertible debt, in the new venture setting. But there is ample anecdotal evidence for the use of convertible debt in early stage ventures in the US in angel investing and even in funding from family and friends (Wiltbank, 2005).

Hybrid mechanisms not only overcome the necessity for making tradeoffs in the entrepreneurial setting, they also help transform mixed gambles into pure gambles. In mixed gambles, both upside and downside possibilities exist as in the case of the classic occupational choice model where starting a venture may either result in profit (equal to or more than wage income) or loss (in addition to loss of wage income). In hybrid entrepreneurship, since the decision maker does not forgo wage income, yet has the option to earn profit through the new venture, only upside possibilities are salient to the decision, turning it into a pure gamble. This is even more true if the decision to become a hybrid entrepreneur is made using the affordable loss principle in effectuation.

### **Prospect Theory: Loss Framing**

The notion of pure and mixed gambles comes from the literature on Prospect Theory (PT), and the affordable loss principle is closely related to the findings from PT (see Holmes et al. 2011 for an excellent review of PT). Let us reconsider the plunge decision in terms of affordable loss versus expected return. According to PT, a gain-frame of the plunge decision occurs when the decision maker uses his or her current salary as the reference point and seeks to find an entrepreneurial opportunity which returns more. Affordable loss offers a loss-frame of the same problem. Here the reference point is the opportunity to become an entrepreneur and the problem becomes one of whether to walk away from that opportunity, especially if the initial investment is “affordable” however subjectively defined. Studies in PT show that decision makers tend to be risk seeking in a loss frame and risk averse in a gain-frame. The prediction from

effectuation that people using an affordable loss framing of the plunge decision are more likely to take the plunge is thus independently justified through PT.

It is easy to see why and how Prospect Theory may be of import in modeling the plunge decision as well as in explaining the use of the affordable loss principle in other entrepreneurial decisions. Yet no studies have taken up the task till date. The issue of when and how stakeholders choose to make commitments and negotiate emotional and/or economic ownership in an early stage new venture is closely related to how they view uncertainty, and what exactly they see as possible positive and negative contingencies down the road. We turn next to another useful mechanism that helps frame contingencies in entrepreneurial decision making.

### **Counterfactual and Semifactual Thinking: Even-if**

The unexpected is an intrinsic part of entrepreneurship. Ever since Knight's (1921) definition of entrepreneurial judgment as the ability to make decisions in the face of the utterly unexpected, contingency has been considered an essential aspect of entrepreneurship. Responses to contingency are interesting precisely because contingencies challenge the deterministic flow from cause to effect. For every course of events actually realized in history there are several (if not an infinite number of) alternate courses that could have happened but did not. Counterfactual thinking, therefore is a part of the human penchant for sensemaking and re-imagining the past. But counterfactual thinking has been shown to increase regret in the face of failure and other negative events (Roese & Olson, 1995; Zeelenberg et al., 1998), and scholars have shown that entrepreneurs are less likely than others to engage in counterfactual thinking (Baron, 2000).

There are very few studies of counterfactual thinking in entrepreneurship and literally none on semifactual thinking, probably because the latter is new even in psychology. While counterfactual thinking consists in wondering about what might have been different in consequence if antecedent conditions or choices had been different, semifactual thinking consists in reflecting on consequences that would not have been different even if antecedent conditions or choices had been different. Whereas counterfactual thinking involves statements starting with "if only", semifactual statements begin with "even if."

When people consider events less causally related and hence more susceptible to intervention, they are more likely to take action to shape the course of events. That is why semifactual thinking could be an important mechanism in entrepreneurial decision-making and not merely a way of characterizing the entrepreneur as different from others. Sarasvathy (2008) explained the role of "even-if" in effectual reasoning and showed that expert entrepreneurs used this as a mechanism in decision making under Knightian uncertainty. To illustrate the use of semifactuals in entrepreneurial decision making, let us once again consider the plunge decision of the entrepreneur who is leaving a well-paying job to start her own company. She could hypothesize to herself, "If I start my own venture, I will be a successful entrepreneur-- something I have always wanted." But if we take a "positive" approach to the hypothesis, the data will almost always be against her taking the plunge because she will be pitting a near-certainty (income from current job) against an uncertain gamble (earning from venturing). And as scientists studying the subject, we will have to conclude that she will take the plunge only if she suffers from overconfidence bias.

But entrepreneurs routinely make the decision on the basis of the negative formulation of the hypothesis: "If I take the plunge, I may or may not become a successful entrepreneur; but if I do *not* take the plunge, I will *not* become a successful entrepreneur." So the problem becomes

one of trying to find antecedent conditions that would make the plunge sufficiently feasible. This is a move away from the counterfactual mindset of “if only I had enough money, I would become an entrepreneur” or “if only I could be surer of success...” to that of “even if I were to fail...” In other words, so long as becoming an entrepreneur has a positive value to the entrepreneur, “even-if” is a mechanism that allows her to figure out how to take the plunge rather than why she should or should not.

## **CONCLUSION**

What we have provided above is but a starter set of possible mechanisms worth studying and constructing in the lab and elsewhere. The mechanisms used in our examples have only spanned the plunge decision and some aspects of early stage financing and the acquisition of stakeholders in new ventures. We are convinced similar mechanisms exist in hiring and firing decisions, marketing and sales decisions and even in accounting and legal decisions. Some of these might be observable through qualitative and quantitative empirical studies and others might have to be designed and examined in the laboratory and later brought to practice and tested in the field. Here the fruitful tradition of research into economic systems design has already shown the way and may be used as an initial blueprint on how to proceed.

We began this essay with the argument that the exclusive focus on research aimed at isolating the characteristics of entrepreneurs as opposed to others, while intellectually exciting and even practically valuable, may have blinded us to another wholly new and exciting possibility – namely, the design of mechanisms that allow all kinds of individuals to start new ventures and provide useful and valuable tools to enable them and their stakeholders to build enduring organizations. The research stream on effectuation has identified a few of these mechanisms. By showing where effectuation may be located within the history of behavioral and experimental economics, we were led to the outline of at least three more mechanisms that could open the door to an entirely new research agenda on entrepreneurial mechanisms design that parallels the effort that Smith (2003) referred to as economic systems design at the institutional level. Smith summarized the effort as follows:

Out of this interaction between minds through the intermediary of rules the process aggregates the dispersed asymmetric information, converging more-or-less rapidly to competitive equilibria if they exist. Each experimental market carries its own unique mark with a different dynamic path. (2003: 500)

A Gump-based research agenda in entrepreneurship would show how interactions between minds through the intermediary of effectual principles and other mechanisms yet to be discovered/constructed aggregates dispersed asymmetric information and heterogeneous preferences, tastes and talents into enduring organizations when possible. And in the case of effectual mechanisms, even if such organizations do not emerge, each entrepreneur and stakeholder investing in them will lose no more than they can afford to.

## **REFERENCES AVAILABLE FROM THE AUTHOR(S)**