

# **Extending the Behavioral Theory of the Firm to Entrepreneurial Firms**

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### **Abstract**

While the Behavioral Theory of the Firm (BTOF) is one of the most popular theories of organizational change in the strategic management literature, the empirical work used to develop the theory used established firms; most empirical tests of the theory do likewise. Over the past decade or so, however, a number of studies have attempted to extend the BTOF to entrepreneurial firms. This paper examines the extent to which the BTOF applies to entrepreneurial firms. We propose that while some constructs and mechanisms specified in the BTOF (such as aspirations, routines, search, and learning) have limited relevance for entrepreneurial firms and need modifications to be relevant, other constructs and mechanisms (such as dominant coalitions and biases) have greater visibility and relevance in entrepreneurial firms than in larger firms. We conclude with a discussion of how we can most fruitfully apply the BTOF to explaining decision making by entrepreneurial firms.

**Key words:** Behavioral theory of the firm, entrepreneurship, dominant coalitions, biases, aspirations, routines, search, learning

## **Extending the Behavioral Theory of the Firm to Entrepreneurial Firms**

### **Introduction**

The Behavioral Theory of the Firm (BTOF), based on March and Simon's (1958) *Organizations* and Cyert and March's (1963) *A Behavioral Theory of the Firm*, has substantially influenced research in organizations and strategic management, with the current citation count for *Organizations* and *A Behavioral Theory of the Firm* exceeding 25,000 each. The immense popularity of the BTOF is partially because it exemplifies Lewin's (1945) statement that "there is nothing so practical as a good theory"; like any good theory, the BTOF provides clear answers about the who, what, where, when, why, and how of organizational continuity and change (Van de Ven, 1989). Scholars have used the BTOF to explain a wide variety of strategic decisions ranging from strategic positioning (Park, 2007) to financial misrepresentation (Harris & Bromiley, 2007).

Over the past decade or so, several theoretical and empirical studies have attempted to extend the BTOF to entrepreneurial firms (e.g., Dew, Read, Sarasvathy, & Wiltbank, 2008; Yavuz, Dutta, & Soytaş, 2015; Zahra, 2008). As Bacharach (1989) notes, however, all theories are constrained by their bounding assumptions. Here, we examine the extent to which the BTOF applies to entrepreneurial firms.

We define entrepreneurial firms as independent, newly established firms. Thus, entrepreneurial firms do not necessarily offer new or innovative products or services. Our definition excludes larger, more established firms (or newly established divisions of such firms) even when such firms bring new products and services to market. We argue that while some constructs and mechanisms specified in the BTOF have limited relevance for entrepreneurial firms and need modifications to be relevant, other constructs and mechanisms have greater

visibility and relevance in entrepreneurial firms than in larger firms. We conclude with a discussion of how researchers can most fruitfully apply the BTOF to explaining decision making by entrepreneurial firms.

We see our paper as contributing to the literature on strategic entrepreneurship. As Alvarez, Audretsch, and Link (2016, p.3) notes, “over the past 15 years, the field of entrepreneurship has been on a relentless pursuit for theories that enable researchers to study entrepreneurial phenomena.” By examining the extent to which the BTOF applies to entrepreneurial firms, we hope to add to the conversation about theoretical perspectives that can advance the field of entrepreneurship.

At a broader level, we see our paper as contributing to an ongoing debate about the domain of strategic management (Durand, Grant, & Madsen, 2017; Leiblein, Reuer, & Zenger, 2018a; Rumelt, Schendel, & Teece, 1991). As the field of strategic management has grown, it has both drawn on and contributed to a number of other areas of business research, raising concerns about the boundaries of the field (Durand, Grant, & Madsen, 2017; Leiblein, Reuer, & Zenger, 2018b; Rumelt, Schendel, & Teece, 1991). By identifying constructs and mechanisms within the BTOF that are either directly relevant or need modifications to become relevant for entrepreneurship research, we attempt to contribute to this debate by examining a specific circumstance: to what extent is one popular theory in strategic management (the BTOF) germane to an emerging area of research (entrepreneurship)?

We begin with a brief review of the BTOF.

### **The BTOF: A brief review**

The BTOF assumes bounded rationality; organizational decision makers face serious limitations on their information processing abilities; subject to such limits, decision makers attempt to reach their goals. For example, individuals and organizations cope with information processing limitations by searching until they find satisfactory rather than optimal solutions. Instead of constantly making decisions anew with unstructured analysis, organizational decision makers use routines or standard operating procedures to simplify decision making. While firms may systematically develop and record some routines, routines also evolve over time in response to local factors, sometimes without the organization assessing the desirability of the changes.

In addition, and in contrast to standard treatments in economics that view the firm as a unitary actor with a single, consistent set of goals, the BTOF describes the firm as a coalition of stakeholders with multiple, sometimes ill-defined, goals that may conflict with one another. Instead of resolving conflicts to agree on a single set of goals, the multiple organizational decision makers that represent various stakeholder groups “quasi-resolve” conflict among goals by treating them as “independent aspiration-level constraints imposed on the organization by members of the dominant coalition” (Cyert & March, 1992, p. 164), where the dominant coalition refers to the stakeholders who control the firm. Aspiration levels refer to implicit or explicit firm targets for a variety of goals such as sales, profits, etc. The prior performance of the firm, the performance of the firm’s peers, i.e., the firms the organization sees as comparable competitors, and the previous aspiration levels of the firm influence current aspiration levels. In addition, although organizations have aspirations for multiple goal dimensions, aspirations differ in importance; the amount of attention the firm pays to different aspiration levels depends on the priorities of the dominant coalition.

The BTOF predicts that managerial attention focuses on places where performance (actually, expected performance in the original statements) falls below aspiration levels. If performance on a specific goal exceeds the aspiration level, the firm generally operates according to established routines (March & Simon, 1958; Simon, 1948). If performance on a specific goal dimension falls below the aspiration level, the firm attempts to raise performance in that dimension above aspiration level, often by undertaking problemistic search i.e., searching for a simple solution in the area of the perceived problem rather than looking for some general solution. Aspiration levels adjust with a lag both to actual performance and to the performance of comparable entities, rising with increases in firm performance and falling with declines in performance.

In the BTOF, firms use slack both to create stability and to buffer unfavorable changes in the environment. In good times, firms absorb slack as excess staffing, excess liquidity, etc. In bad times, they draw on slack to buffer the system from short-term variations in the environment and to facilitate change if needed. Slack reduces bargaining among coalition members, helps to maintain the dominant coalition, and slows both upward and downward adjustments in aspirations levels.

Obviously, this is just a very brief description of the BTOF; the complete theory is far more complex. It discusses, among other things, organizational learning, the effects of biases in communication, and so on. However, this brief description introduces some key concepts and ideas – routines, dominant coalitions, aspiration levels, conflicts – that we now look at in the context of entrepreneurial firms.

### **Applying the BTOF to entrepreneurial firms**

Baron (2004) identifies the three central questions of entrepreneurship as (1) why do some persons but not others choose to become entrepreneurs? (2) why do some persons but not others recognize opportunities for new products or services that can be profitably exploited? and (3) why are some entrepreneurs so much more successful than others? Many studies build on the second question: the ability to identify opportunities is a core concept in the field of entrepreneurship research (Busenitz, West III, Shepherd, Nelson, Chandler, & Zacharakis, 2003; Eckhardt & Shane, 2003; Shepherd, Williams, & Patzelt, 2015; Short, Ketchen, Jr., Shook, & Ireland, 2010).

Unsurprisingly, therefore, many studies in this field examine issues related to identification of opportunities. These include, for example, whether entrepreneurs create or discover opportunities, why only some people recognize opportunities, how opportunities lead to outcomes such as new venture creation (and the factors that moderate this process), how entrepreneurs arrive at decisions relating to opportunity recognition, evaluation, exploitation, and so on (Alvarez & Barney, 2007; Ardichvili, Cardozo, & Ray, 2003; Busenitz, 2007; Hsieh, Nickerson, & Zenger, 2007; Zahra, 2008; see also Shepherd, Williams, & Patzelt, 2015, and Short, Ketchen Jr., Shook, & Ireland, 2010 for reviews).

At first glance, many of the central constructs of the BTOF – routines, aspirations, and search – appear relevant to examining these issues, in particular, the problem of how entrepreneurial firms recognize, evaluate, and exploit opportunities. For example, entrepreneurial firms, like other firms, will presumably develop some simple routines relatively quickly, if only to economize on the information processing required to recognize, evaluate, and exploit opportunities. These firms will also likely have multiple goals and aspiration levels stemming from their decisions to exploit opportunities. We can also reasonably expect that

entrepreneurial firms attempt to reach their aspirations either by continuing with procedures or solutions that worked in the past or by undertaking problemistic search if their current procedures do not appear to allow them to meet their aspirations.

A closer look at these constructs and mechanisms, however, suggests that applying the BTOF to entrepreneurial firms is not quite as straightforward as it seems. Some constructs such as dominant coalitions and organizational biases have substantial relevance for entrepreneurial firms, perhaps even more so than for large, established firms. However, other constructs such as problemistic search, routines, aspirations, and learning need modifications before they can be used to explain organizational actions in this new context. We discuss these two categories of constructs in turn.

### **Constructs directly applicable to entrepreneurial firms**

We begin by looking at constructs of particular relevance for entrepreneurial firms. Two constructs - the dominant coalition (including the bargaining, conflicts, and politicking that occur within the coalition) and organizational biases - apply directly to these firms. We begin with dominant coalitions.

**Dominant coalitions.** The BTOF argues for the existence of dominant coalitions in firms. For example, Cyert and March (1992, p. 32) states, “There are two classic solutions to the problem of organization goals. The first, or entrepreneurial, solution is to describe an organization as consisting of an entrepreneur (either the top of the managerial hierarchy or some external control group such as stockholders) and a staff. The goals of the organization are then defined to be the goals of the entrepreneur. Conformity to these goals is purchased by payments (wages, interest, love) made by the entrepreneur to the staff and by a system of internal control

that informs the staff of the entrepreneurial demands. . . . The second solution to the problem is to identify a common or consensual goal. This is a goal that is shared by the various participants in the organization.”

However, note that Cyert and March (1963) use the entrepreneurial solution to describe a theory where firms have a consistent set of priorities, as assumed in neoclassical economics. Indeed, much of Cyert and March (1963) is presented as an alternative to the entrepreneurial solution, asserting, for example, “various participants” such as founders, investors, etc. may lack coherent set of goals. Indeed, while Cyert and March (1963) offers detailed analyses of decisions in several firms, it offers no data from entrepreneurial firms. Furthermore, the concept of dominant coalition and most of what Cyert and March (1963) says about goals directly contradicts the coherent goals of Cyert and March’s entrepreneurial solution.

In short, Cyert and March’s (1963) use of the term entrepreneurial solution refers to a theory where firms have a consistent, well defined set of goals, rather than explicitly to a class of organizations now termed entrepreneurial firms. In Cyert and March (1963), firms do not necessarily have clear, consistent goals, and the goals reflect the dominant coalition of the firm. While the BTOF sees the firm per se as a coalition (see March and Simon (1958) for an extensive discussion of contribution-inducement issues in creating the coalition), a smaller group of individuals – the dominant coalition -- have great influence over the organization.

The dominant coalition concept has great relevance for entrepreneurial firms, perhaps even more so than for more established firms. Established firms often have heavily institutionalized dominant coalitions; particularly in large, publicly traded firms, the normal structure of boards of directors and top management teams makes the dominant coalition somewhat standard and quite stable over time. In contrast, dominant coalitions in

entrepreneurial firms show greater variation. The coalitions in entrepreneurial firms often consist of some amalgam of the firm's founders, senior managers, and major investors. Frequently, groups of managers found entrepreneurial firms, rather than individuals. Investors often exert substantial influence in entrepreneurial firms. While occasionally an individual founder constitutes the dominant coalition with full control over the firm, this is perhaps more common in story than in modern entrepreneurship.

In addition, in entrepreneurial firms, the dominant coalition evolves as the firm changes, often when adding new members to the top management team or when obtaining funding from angel investors or venture capitalists. Each round of external funding can change the dominant coalition – new investors often demand a say in firm governance. Management turnover rates are often higher in entrepreneurial firms than in established firms. Going public likewise changes the dominant coalition bringing in new investors, letting older investors depart, and redefining the status of investors, board members, and management. Arriving investors may have very different expectations and beliefs than the founders or original investors regarding firm strategy and performance. Such differences often result in turnover in top management teams.

Given that dominant coalitions in entrepreneurial firms change more than in established firms, the dominant coalition concept, which has stimulated little or no empirical work in large firms, has an important role in understanding entrepreneurial firms. Indeed, scholarship on entrepreneurial firms has invested substantial attention to issues associated with the dominant coalition – the role and characteristics of founders, changes in top management teams, the role of investors, the effects of initial public offerings (IPOs), etc. – although seldom under the dominant coalition terminology (see, for example, Boeker & Fleming, 2010; Boeker &

Karichalil, 2002; Klotz, Hmieleski, Bradley, & Busenitz, 2014; Lim, Busenitz, & Chidambaram, 2013; Ucbasaran, Lockett, Wright, & Westhead, 2003; Wasserman, 2003).

Concurrent with the dominant coalition, the processes of bargaining, conflict, and politics that characterize interactions within the coalition should have more importance in entrepreneurial firms than established ones. The dominant coalition in established firms often consists of large groups of relatively stable organizational actors (for example, subsidiaries, departments, or locations) represented by key individuals such as subsidiary presidents, division managers, or branch managers. In contrast, as we note above, the dominant coalition in entrepreneurial firms consists of individuals or small groups; the composition of these coalitions changes far more than coalitions in established firms. This changeable composition should result in entrepreneurial firms exhibiting more intense processes of bargaining, politicking, etc. than established firms do. For scholars, this implies an increase in the explanatory power of the dominant coalition for predicting firm outcomes. We have three reasons for our assertion.

First, in an established firm, goals, organizational structure, budget allocations, titles, etc. reflect compromises or treaties among the members of the dominant coalition. Such compromises reflect the organization's history; they form a stable base on which the dominant coalition operates. For example, budget allocations often follow stable rules that incrementally change allocations from the pre-existing base. Allocations to R&D spending often reflect a rule of thumb where R&D equals a percentage of sales revenue. At any time, only a small number of these compromises or treaties are open to political debate or change.

In contrast, entrepreneurial firms have fewer of these established compromises that characterize established firms. Not only will entrepreneurial firms have had less time to develop historical norms than more established firms, entrepreneurial firms tend to grow (or decline)

more rapidly than established firms. This growth or decline often necessitates changes in organizational structure, for example, the creation of new positions that fall outside the preexisting compromises. Growth or decline and change make more issues subject to negotiation or debate instead of determination by pre-existing agreements. With more to fight over, bargaining and political processes should be more intense in entrepreneurial firms than in more established firms.

Concentrated, changing coalitions will therefore make the intensity of bargaining greater in entrepreneurial firms than in established firms. For example, in a business founded by two people, a venture capitalist may collaborate with one founder while ousting the other founder. In contrast, a large public company will normally have a substantially larger Board of Directors and investors who, in theory, have an arms-length relation with the firm. Dramatic changes in investors, boards of directors, and top managers for established firms occur much less frequently than changes in ownership and top management in entrepreneurial companies.

Second, in entrepreneurial firms with small sub-groups and (possibly) power concentrated in the hands of a few people, coalitions can change more rapidly than in established firms and changes in coalitions can have greater impact. Whereas a major reorganization can take years in large organizations, the structure of a growing entrepreneurial firm often must change frequently as increased scale necessitates a different structure. Correspondingly, the outcomes of the bargaining process may have a more immediate and direct impact on individual members of sub-groups in entrepreneurial organizations than on individual members of sub-groups in established organizations.

Third, to study most phenomena, we need variation in two variables. A lack of within-firm variation hinders the study of dominant coalitions in established firms. Since dominant

coalitions should vary more in entrepreneurial firms than established firms, even if a dominant coalition has equal importance in both entrepreneurial and established firms in the long term, variation in the dominant coalition makes such coalitions easier to study in entrepreneurial firms than in more established firms in the short term.

Some entrepreneurship research supports these ideas. For example, consistent with our reasoning that the lack of established compromises and treaties in entrepreneurial firms result in more intense bargaining and political activity, Ensley, Pearson, and Amason (2002) states that “...new venture managers are disproportionately more important to the success of their firms than are managers of existing firms because of the unique threats associated with trying to be simultaneously both new and different...and because of the absence of any precedent or inertia upon which new ventures can rely” (p. 380). Other research also examines similar ideas though, again, not under the dominant coalition terminology. This research focuses, for example, on the effects of strong and weak faultlines among founders and investors on task and relationship conflict within a new venture team (Lim, Busenitz, & Chidambaram, 2013), and on how CEOs of entrepreneurial firms resolve a resource-power tradeoff with the boards of their firms during the strategy process by using political behaviors (among other things) that allow them to “divide and conquer” (Garg & Eisenhardt, 2017).

**Biases.** We next turn to biases. The BTOF argues that organizations are subject to many biases. These biases are evident, for example, in the filtering rules organizations (and sub-groups within organizations) use to form expectations and generate sales, cost, or efficiency estimates, and in organizations’ search for solutions to problems. In addition, many communications in organizations will have biases. For example, *Organizations* discusses uncertainty absorption. As information passes from individual to individual, often up the

organizational chain, the uncertainty expressed in the original analysis often declines. Individuals drop the subtleties and conditions associated with a detailed analysis as they summarize the implications of the analysis, and then again drop more subtleties and conditions when another person summarizes the summary.

Alternatively, almost all forecasts in organizations have implications for the forecaster, leading to intentional biases in forecasts. For example, sales forecasts lead to sales targets, cost estimates lead to budgets, and budget requests lead to budget allocations. Organizations then evaluate sales managers based on whether they meet sales targets, and evaluate other managers based on whether they meet budget targets. Consequently, salespeople may try to make conservative sales forecasts and individuals making budget requests often ask for more than they think they will need. Over time, managers learn to provide counter-biases to such biases. Senior managers reviewing subordinates' sales forecasts will often push them up, those reviewing cost estimates will usually push them down, and those reviewing expense budgets generally cut them. Recognizing this problem, the BTOF suggests that organizations "...develop decision methods that do not require reliable information (other than the simplest, most easily checked information)" (Cyert & March, 1992, p. 130).

While most participants in established organizations understand that forecasts and proposals will exhibit systematic biases (the presence of such biases has been demonstrated empirically; Bromiley, 1987) and may at least partially compensate for these biases, entrepreneurial firms often have not developed norms about biases and managers' responses to biases. The supervisor of a new manager in an entrepreneurial company may not know how much a subordinate pads the budget proposals, and the subordinate lacks a history of previous budget proposals and decisions to learn the appropriate, allowable, padding. Consequently, we

would expect that approved forecasts in entrepreneurial firms have less association with the actual outcomes than in larger firms, even when controlling for differences in uncertainty.

A second potential implication for entrepreneurial firms comes from the optimism inherent in launching businesses. While individual differences do not play a large role in Cyert and March (1963), both Simon (1948) and March and Simon (1958) discuss individual differences. If only about half of all newly established firms survive 5 years or longer (U.S. Small Business Administration, 2017), those who launch businesses will tend to be optimistic. Consequently, the managers of entrepreneurial organizations should make more optimistic or overconfident forecasts of sales and profits than managers of more well-established firms (Busenitz & Barney, 1997; Hmielski & Baron, 2009; Simon & Shrader, 2012; Ucbasaran, Westhead, Wright, & Flores, 2010). For example, in a sample of small firms, Simon and Shrader (2012) finds that entrepreneurial actions such as the large scale introductions of new products, the introduction of pioneering products, and entering hostile environments all associate with managers' optimistic overconfidence.

To the extent that individuals learn from their experience, we would expect serial entrepreneurs who have been unsuccessful in their previous businesses evidence less optimistic bias in their current business (although some evidence exists against this; see Ucbasaran, Westhead, Wright, & Flores, 2010). In contrast, due to hubris or selective learning, serial entrepreneurs who have succeeded in their previous businesses may show more optimistic bias. The effect of optimism on firm performance, in turn, may be positive – but only up to a point. While optimism is necessary to take the kinds of risky decisions associated with an entrepreneurial firm, highly optimistic entrepreneurs may learn less from their past experience

than moderately optimistic entrepreneurs, influencing new venture performance negatively (Hmielski & Baron, 2009).

While our discussion has focused on optimism, a large area of research on entrepreneurial cognition suggests that entrepreneurs may exhibit several other biases such as the planning fallacy, sunk costs, affect infusion, and so on (Baron, 2004). Examining these biases may help research address the three basic questions of entrepreneurship we identified earlier. We note, however, that the focus of this research has generally been on individuals, as opposed to the firm-level communication biases proposed by the BTOF.

A third and final implication for entrepreneurial firms comes from search bias, i.e., bias in where managers search for solutions. Search bias may also differ between entrepreneurial and established firms. The BTOF assumes three different kinds of search biases associated with problemistic search: bias reflecting the experience of different parts of the organization, bias reflecting the interactions of hopes and expectations, and communication biases reflecting unresolved conflicts within the organization.

Entrepreneurial firms will differ from established ones in all three biases. For example, in established firms where managers have spent many years in the organization, experience biases should reflect managers' experience in that organization. In contrast, in entrepreneurial firms, most of managers' experience will have occurred in the manager's prior employers, so search biases may reflect patterns in prior organizations. Similarly, regarding hopes and expectations, managerial hopes and expectations in established firms will reflect heavily the experience and norms of such firms and units. In entrepreneurial firms, such experience may not exist. Instead, we might expect entrepreneurial firms to overreact to their short-term experience, particularly when such experience is positive. However, given the struggles of most start-ups,

managers in start-ups cannot react too heavily to negative feedback or they would not persist with these firms.

Scholarship on entrepreneurship recognizes the importance of previous experience. However, instead of focusing on the role experience plays in influencing search bias (as we outline above), entrepreneurship research adopts a broader perspective; it looks at the central role experience plays in explaining a fundamental puzzle in the literature namely, why some entrepreneurs recognize opportunities while others do not (Ardichvili, Cardozo, & Ray, 2003; Baron, 2004; Shane, 2000; Sigrist, 1999; Ucbasaran, Westhead, & Wright, 2009). Shane (2000) suggests that entrepreneurs discover largely those opportunities that relate to their prior knowledge of markets, ways to serve markets, and customer problems. Likewise, Sigrist (1999) suggests that two types of prior knowledge enable opportunity identification: knowledge in an area of special interest to the entrepreneur, and knowledge about an area accumulated over the years while working in a job. Prior experience may help entrepreneurs detect meaningful patterns. Experienced entrepreneurs have cognitive representations of “business prototypes” that are more clearly defined, richer in content, and more concerned with factors and conditions that relate to actually starting and running a new venture than the prototypes of novice or inexperienced entrepreneurs (Baron and Ensley, 2006).

Other entrepreneurship research distinguishes between an entrepreneur’s “stock” and “stream” of experience, where stock associates with the depth and breadth of experience of the individual entrepreneur, accumulated over time, and stream associates with experimentation and learning (Reuber and Fischer, 1999). Reuber and Fischer (1999) argues that the individual is the appropriate unit of analysis when examining the stock of experience and the venture is appropriate unit of analysis when examining the stream of experience. Some research builds on

this distinction to explore how differences in experience among different types of entrepreneurs (novices, serial, and portfolio) result in differences in their perceptions, decisions, and actions e.g., their reported optimism, the sources of information they look for, and how they search for and recognize opportunities (Ucbasaran, Westhead, Wright, & Flores, 2010; Westhead, Ucbasaran, and Wright, 2005).

Search biases imply that the type of search entrepreneurial firms carry out will reflect the experience and goals of the founding team. This, in turn, may have positive or negative effects for the organization. Beckman and Burton (2008), for example, finds that a founding team's experience, along with initial organizational structure, predicts the speed with which the firm achieves important milestones such as obtaining venture capitalist funding, going public, etc. Klotz, Hmieleski, Bradley, and Busenitz (2014), in a review of new venture teams, however, notes that while shared prior experience may enable teams to make quick and unified strategic decisions, it may also constrain strategic choices.

Finally, we would expect more unresolved conflict in entrepreneurial organizations than in established organizations. While conflict exists in established organizations, as we noted earlier, the existence of prior compromises, agreements, and norms will mute the importance of such conflict. These kinds of prior compromises, agreements, and norms will not necessarily exist in entrepreneurial firms.

Some entrepreneurship scholars present an opposing view. Dew, Read, Sarasvathy, and Wiltbank (2008) states that the quasi-resolution of conflict, one of the four major relational constructs in the BTOF, simply does not apply to entrepreneurial firms because the stakeholders in an entrepreneurial firm self-select into the organization and therefore, are "both persuadable and persuasive to varying degrees about different things" (p.49).

We suggest, however, that self-selection does not guarantee the elimination or resolution of conflict. While people may join an organization because they believe it can succeed, the mere presence of a commonly held belief about success does not necessarily lead to a widespread agreement on the means to achieve that success. For example, consider the case of Makerbot, a manufacturer of desktop 3-D printing. In its early years, the company experienced intense conflict among its employees regarding its interactions with the open source community even though its employees all believed in the company's potential and general strategy (Lopez & Tweel, 2014).

Some research on entrepreneurship supports our argument, finding that conflict within an entrepreneurial firm influences performance either directly or indirectly. For example, some studies find that task and relationship conflict mediate the relations between lead founder personality or top team cohesion and new venture performance (Ensley, Pearson, & Amason, 2002; de Jong, Song, & Song, 2013). Other research finds that conflict not only exists in entrepreneurial organizations; it can spread across sub-groups within the dominant coalition. Zacharakis, Erikson, & George (2010), for example, finds that intragroup conflict within the entrepreneurial team increases conflict between the entrepreneurial team and venture capitalists (see also Klotz, Hmieleski, Bradley, & Busenitz, 2014 for a review).

We have discussed some constructs and mechanisms that will have greater applicability to entrepreneurial firms than to established firms. We now turn to constructs and mechanisms that will have fewer implications or will require substantial modifications before application to entrepreneurial firms. These include aspirations, routines, search, and learning. We discuss each in turn.

## **Constructs that need modifications**

**Aspirations:** The BTOF assumes that current aspirations are “an optimistic extrapolation of past achievement and past aspiration... Two kinds of achievement are, of course, important. The first is the achievement of the participant himself. The second is the achievement of others in his reference group” (Cyert & March, 1992, p. 39). Researchers have interpreted these statements to represent firm aspirations as functions of the firm’s past performance and/or the average performance of the firm’s industry or peer group; studies have then either combined these measures, kept them separate, or created aspirations measures that switch between historical and industry reference points (Bromiley & Harris, 2014).

Extending this construct to entrepreneurial firms faces two problems. The first problem relates to “past achievement and past aspiration.” In the absence of organizational history, or a history where performance (e.g., product development) is incommensurate with future aspirations (e.g., sales revenue), entrepreneurial organizations would have difficulty forming aspirations based on “past achievement.”

The second problem relates to the identification of the firm’s industry or peer group. While entrepreneurial firms competing in well-established industries or product categories (e.g., bank start-ups) may have little difficulty identifying a peer group, entrepreneurial firms that intend to sell innovative or unique products may have great difficulty identifying a peer group. Even in well-established industries or product categories, while a peer group may exist in general, the entrepreneurial firm may have no reasonable way of comparing itself with that peer group. For example, while a peer group may exist for automobiles producers, someone starting a new automobile company will need to allow for different performance metrics than a well-established competitor. Indeed, scholars of entrepreneurial firms face a parallel problem and

struggle to find appropriate, comparable measures of firm performance. The problem may be even more difficult if the firm produces a truly innovative or disruptive product or service where direct competitors using similar technology do not exist. In such cases, aspirations may depend on something else including, in some instances, wishful thinking.

In addition, far more than with conventional organizations, survival constitutes a very real and overarching aspiration for entrepreneurial firms. March and Shapira (1987) suggests firms switch from conventional reference points to a survival reference point when firm survival is challenged.

Some entrepreneurship research addresses these issues by suggesting that, in the case of entrepreneurial firms far more than the established firms in the BTOF, management has flexibility in defining the competitors and/or market the firm faces (Dew, Read, Sarasvathy, & Wiltbank, 2008). Entrepreneurial firms can therefore be characterized as facing design (e.g., creating novel technologies, firms, or markets) rather than decision problems. As the stakeholders in an entrepreneurial firm interact to solve these problems, the goals of the firm emerge, contingent upon the means available to the firm. Further, even when stakeholders agree on the end goal or aspiration for the firm, they may disagree on the sub-goals and stratagems required to reach this goal (Dew, Read, Sarasvathy, & Wiltbank, 2008).

Other research sidesteps these issues by implicitly or explicitly equating the motivations and aspirations of the entrepreneurial firm to those of the individual entrepreneur (Carlsrud & Brannback, 2011; Hessels, van Gelderen, & Thurik, 2008; Shepherd, Williams, & Patzelt, 2014). Studies in this area, for example, identify different types of motivations (such as necessity versus opportunity, or independence versus increase wealth versus necessity) that lead individuals to found firms (Carlsrud & Brannback, 2011; Hessels, van Gelderen, & Thurik, 2008). Observers

posit that these entrepreneurial motivations, in turn, lead to the aspirations the entrepreneur has for the firm (e.g., related to innovation, job growth, and exports; Hessels, van Gelderen, & Thurik, 2008), explaining why owners of entrepreneurial firms may choose to continue even when faced with low performance (Gimeno, Folta, Cooper, & Woo, 1997).

Aspirations matter in entrepreneurial firms just as they do in established firms. An entrepreneurial firm where management aspires to build a \$1 billion company will behave very differently than an entrepreneurial firm where management aspires to an enduring, moderate level of income. However, entrepreneurship researchers may differ from strategy scholars in what they find important or interesting about aspirations. Specifically, entrepreneurship researchers, as compared to scholars examining more established firms, may need to consider different factors that determine aspirations and how they emerge, and which aspirations firms pay attention to. While examining these issues, entrepreneurship researchers may need to differentiate between different aspirations that differing parties (e.g., investors, founding managers) have for the entity. In addition to these issues of aspiration identification and emergence, researchers may need to focus on time: we can envisage a hierarchy of aspirations emerging over time with survival followed by growth followed (perhaps) by the more traditional aspiration relative to peer (and eventually historical) performance.

**Routines.** In the BTOF, organizations are large conglomerates of routines or standard operating procedures. Three basic principles underlie the formation of routines: organizations try to avoid uncertainty, maintain the rules, and use simple rules (Cyert & March, 1992). Cyert and March (1992) then goes on to describe four major types of routines or standard operating procedures that change slowly, provide stability to the organization, and influence or dictate organizational procedures. These include task performance rules (e.g., rules associated with

generating and selling the firm's products), continuing records and reports, information-handling rules (rules that determine an organization's communication system i.e., rules that determine what information is brought into the firm, how the information is distributed and condensed, and what information leaves the firm), and plans (ranging from short-run operating budgets to long-run strategic plans).

Routines simplify decision making; organizations do not have to repeatedly find a new solution to a problem encountered earlier. Routines also offer stability and predictability – people can depend on a routine's behavior. Like larger firms, entrepreneurial firms will clearly find the stability and simplicity of routines attractive. In addition, given the ease of establishing routines, entrepreneurial organizations probably develop at least a rudimentary form of the four types of routines described in the BTOF.

However, the determinants of routines in entrepreneurial firms will differ from the determinants of routines in more established firms. As such, entrepreneurial firms may develop different types of routines than established firms. In particular, routines in entrepreneurial firms may depend far more than they do in established firms on the idiosyncrasies of individual managers including their prior experience in other firms.

Consider the determinants of routines in entrepreneurial firms. Whereas routines in the BTOF reflect long-run adaptation by the firm, entrepreneurial firms have no history that would create such long-run adaptation. Instead, we would expect that routines in entrepreneurial firms reflect the experience of managers in their previous places of employment. For example, some research suggests that having some top management team members who do not have experience in the same companies as the dominant coalition may help firm performance by including additional variation in the available set of routines the top management knows about (Beckman

& Burton, 2008). Alternatively, entrepreneurial firms that hire managers from well-established companies sometimes find that these managers attempt to implement complex management practices and systems that made sense and were affordable in a very large corporation but that do not fit the smaller organization. Busenitz and Barney (1997) suggests a third possibility: because entrepreneurial firms have not developed the elaborate routines of larger firms, to reduce the uncertainty and complexity of decision making, entrepreneurs may rely on biases and heuristics (such as representativeness) rather than organizational routines. However, the distinctions between routines, heuristics, and rules of thumb remain ambiguous.

In addition, we would expect that routines in entrepreneurial firms reflect a more direct response to the demands of the environment than in established firms. Because entrepreneurial firms lack the legitimacy of established firms, they may follow industry practices to increase legitimacy and consequently obtain resources from the external environment. For example, many entrepreneurial firms develop formal business plans simply because obtaining outside financing requires such business plans. Furthermore, entrepreneurial organizations may adopt standard practices initially and may have not had time to diverge from such practices. However, Dew, Read, Sarasvathy, and Wiltbank (2008) offer an alternative view claiming that, unlike established firms, which use routines to avoid uncertainty and adapt to their environment, entrepreneurial firms effectuate i.e., try to fabricate their own environments and futures. This process results in more variation than adaptation that involves mimicry of industry practices.

The key to resolving these two different views may lie specifying the type business and routine under consideration. If the organization is creating a new kind of business, routines may not exist for some functions it needs. If an organization is creating a business in a well established product category (e.g., restaurants, banks, etc.), routines may exist and stakeholders

(including customers) may expect the organization to follow conventional routines. If the routine relates to a commonly used business process (e.g., applying for funding from a lender), the use of established industry practices may be essential. If the routine relates to a unique business process (e.g., fulfilling online orders in the early stages of internet based retailing), entrepreneurial firms may have no alternative but to develop their own solutions to the problem (including appropriate routines) given their existing resources.

Finally, and perhaps less confidently, we expect that some routines will reflect what managers have learned in their training. For example, training programs for entrepreneurs often recommend a series or set of procedures and activities.

In short, we would expect the determinants of routines in entrepreneurial firms to be far more external than the determinants of routines in more established companies. Like entrepreneurial firms, routines in the latter type of firms will provide stability and simplify decision making. However, routines in established organizations will reflect a variety of other factors as well as the historical path of the organization's development.

As we noted previously, the kinds of routines developed in entrepreneurial firms will depend far more on the experience of their managers than routines developed in established organizations. However, the BTOF does not ascribe a significant role to individual managers in the development of organizational routines. Cyert & March (1963), for example, conspicuously emphasizes organizational effects and ignores largely the effects of individuals. While March and Simon (1958) includes substantial analysis of individual decision-making, the connections between the individual and organization remain somewhat underdeveloped.

For researchers, this implies that understanding the development of routines in entrepreneurial firms requires the addition of the influence of the individual to traditional BTOF

analysis. For example, the researcher may draw on the cognitive and upper echelons views of managerial decision making (Klotz, Hmieleski, Bradley, & Busenitz, 2014). While not generally seen as part of the BTOF, the upper echelons perspective is compatible with the BTOF. Indeed, March and Simon (1958) introduces the information processing or cognitive view of individual decision-making, a view that then underlies Simon's (1967) subsequent work in cognitive psychology. While March and Simon (1958) and Cyert and March (1963) largely ignore the importance of top executives as discussed in the upper echelons literature, the idea of decision-making by a small group of individuals at the top the organization is inherent in the idea of a dominant coalition. Likewise, the idea of cognition influencing behavior is also inherent in the information processing view of the individual.

When we come to entrepreneurial organizations, this matters because, as we stated earlier, we would expect that routines in these organizations reflect the idiosyncrasies of individuals and top managers far more than in established firms. These idiosyncrasies may take a wide variety of forms. For example, the centralized ownership and control by the CEO in Patagonia lets the company encourage buyers to buy second hand rather than new garments. Likewise, organizations headed by women may have slightly different HR policies than those headed by men, and organizations headed by men with daughters may tend to differ in their employee related policies from organizations headed by men without daughters (see Dahl, Dezsó, & Ross, 2012, for evidence on CEOs having daughters influencing firm behavior). Such effects should be larger in entrepreneurial firms than in established firms.

In short, individual backgrounds and idiosyncrasies should influence routines more in entrepreneurial firms than in established firms. Where we see management idiosyncrasies

influence routines in established firms, we should see the same effects magnified in entrepreneurial firms.

**Search.** The BTOF emphasizes the influence of history. Gavetti, Greve, Levinthal, and Ocasio (2012), for example, call for adaptations of the BTOF to allow for more managerial initiative and therefore, more forward looking behavior. Managerial initiative should influence entrepreneurial firms more than established firms. Indeed, the existence of an entrepreneurial firm normally depends on the founding managers' initiative. Furthermore, entrepreneurial start-ups often have only general ideas of the core products the firm will offer – many such firms fundamentally change their offerings from those originally anticipated (Miller & Friesen, 1982): PayPal began as a cryptography company before moving to money transfer; Google operated as a search engine with little in the way of income until it changed to emphasize on-line advertising; Facebook was originally envisioned serving only college students; and YouTube started with a video service but only found ways to generate profits after several years of almost no income (Walley, 2010).

However, the BTOF is not as backward looking as it may appear in recent papers (e.g., Chen & Miller, 2007; O'Brien & David, 2014; Ref & Shapira, 2017; Joseph & Gaba, 2015). The theory says that organizations have aspirations and expectations, with search driven by expectations below aspirations. The theory thus pairs aspirations to forward looking expectations. The over-emphasis on backward looking aspirations derives from a large number of studies that use historical information to generate proxies for aspirations and compare aspirations to past performance rather than expected performance. Consequently, discussions in aspiration models that characterize the BTOF as completely backward looking reflect a

misrepresentation of the theory (for exceptions see Bromiley (1991) and Wiseman and Bromiley (1996)).

Viewing the BTOF as containing both backward looking and forward looking elements has significant implications for search in entrepreneurial firms. Managers in entrepreneurial firms often take extreme risks and make extreme changes because their aspirations greatly exceed expectations for the organization's performance under current practices. The continued relevance of bankruptcy and failure likewise may spur change in entrepreneurial firms whereas almost all established firms have low probabilities of bankruptcy. However, the problemistic search predicted by the BTOF in response to performance below aspirations will differ significantly between entrepreneurial firms and established firms.

Problemistic search in the BTOF requires that, subject to learning, the search for a solution to a problem (below-aspiration expected performance on a goal dimension) depends on two simple rules -- firms look in the neighborhood of the problem symptom and in the neighborhood of the current practice. The underlying idea is that "...a cause will be found "near" its effect and that a new solution will be found "near" an old one" (Cyert & March, 1992, p. 170).

Entrepreneurial firms may undertake a broader search rather than the problemistic search proposed by the BTOF for two reasons. First, if the organization fails to meet a very general aspiration (e.g., survival becomes questionable), then expected performance relative to aspirations does not provide an obvious target for local neighborhood search. Second, with sufficiently high aspirations relative to expectations, the local neighborhood may hold no viable alternatives. Instead, search will depend on managerial beliefs about where and how many viable solutions exist in the environment.

Some entrepreneurship scholars expand on this idea to claim that “search is an essential and integral part of the definition of entrepreneurial opportunities” (Zahra, 2008, p. 244). However, different types of search will result in different types of entrepreneurial opportunity recognition, in particular, influencing whether managers discover or create the opportunity. Passive search will typically result in discovery while proactive search increases the likelihood of opportunity creation. Further, at least in established firms, formal search (consistent with the BTOF) will focus close to the firms’ existing technological base and therefore lead to the recognition of opportunities close to that base, while informal search will likely lead to opportunities more distant from the firms’ base (Zahra, 2008). Hsieh, Nickerson, and Zenger (2007) presents a variant of this idea, suggesting that specific types of search (experiential, cognitive, or both) will best suit specific types of opportunity discovery which, in turn, relates to problem solving. This match between type of search and opportunity discovery will then determine the boundaries of the entrepreneurial firm.

Consider, for example, an entrepreneurial firm without a current product. For this firm, search must obviously involve looking for solutions to the problem of generating new products. The BTOF suggests that this organization would tend to move from one tentative product to a similar tentative product most of the time i.e., undertake local neighborhood search. However, in the absence of a current product, management might have difficulty identifying solutions in the “local neighborhood” or perhaps even identifying the “local neighborhood” itself. In such a scenario, managers may undertake an informal search far from the firm’s current product or market concepts.

In addition to predicting problemistic search, the BTOF predicts the intensity of search. Extremely low expected performance relative to aspirations should result in broader search (and

often larger resultant organizational change). The amount of slack the firm holds should also influence search. As we noted earlier, the BTOF primarily ascribes a buffering role to slack. Slack allows a firm to absorb uncertainty and lets the firm avoid adapting to every small change in the environment.

Slack may play a different role in entrepreneurial firms than established firms. For example, in entrepreneurial firms, more than in established firms, slack may enable risk taking and change. We can see some evidence of this in the funding decisions of venture capitalists. Venture capitalists, in their search for the next extreme success, often provide large amounts of funds to unprofitable entrepreneurial firms (and sometimes to firms that show little sign of becoming profitable in the near future). The venture capitalists emphasize the potential of these firms to generate huge profits eventually, and provide the firms with funds that will allow them to take the risks needed to create innovative new products and services.

This kind of thinking aligns with observations of managerial perceptions of risk taking. March and Shapira (1987, p.1409), for example, note that on the one hand, “most managers seem to feel that risk taking is more warranted when faced with failure to meet targets than when targets were secure”. This position agrees with the BTOF. On the other hand, March and Shapira (1987) finds a certain ambiguity in managers’ ideas about risk. They find that “...the greater the asset position relative to the target, the less the danger from any particular amount of risk...As one vice-president said (Shapira, 1986),”Logically and personally I’m willing to take more risks the more assets I have” (p.1410). How a manager resolves this ambiguity (failure to meet targets or high assets that should associate with exceeding targets driving risk) depends on whether the value attached to an alternative appears as a gain or a loss and whether the alternative evokes a success target or a survival target.

This suggests that slack plays a more complex role in an entrepreneurial firm than the simple buffering role emphasized by the BTOF. However, even in entrepreneurial firms, slack will not always enable risk taking. Managers of entrepreneurial firms with substantial funding and early success with a new product will behave very differently from managers of entrepreneurial firms with little funding and no currently viable products or those with substantial funding but no viable products.

**Learning.** Learning is one of the four major relational concepts in the BTOF (with the other three being quasi-resolution of conflict, uncertainty avoidance, and problemistic search). While entrepreneurial firms clearly learn, learning in entrepreneurial firms will differ from learning in established organizations.

Consider the treatment of learning in the BTOF. The BTOF equates learning with adaptation and suggests that, over time, organizational adaptation occurs with respect to three different phases of the decision process: goals, attention rules, and search rules. Just as organizations revise their goals in light of their own and competitors' actual performance, they also revise their attention rules by learning to attend to some criteria or parts of their environment more than others. Likewise, when organizations find (or fail to find) a solution to a particular problem by searching in a particular way, they become more (or less) likely to search in the same way for future problems of the same type.

However, entrepreneurial firms may lack sufficient experience with which to adapt their goals, attention rules, and search rules (or perhaps may even lack rules or routines for directing attention and search in the first place). Alternatively, some adaptations may occur relatively quickly (for example, adaptations in search rules) while others may occur only slowly (for example, goals, especially if, as we discussed earlier, aspirations derive from wishful thinking)

as compared to more established firms. Stated differently, entrepreneurial firms, just like established firms, may learn. However, learning in entrepreneurial firms may mean the creation (rather than the refinement) of simple attention or search rules. Dew, Read, Sarasvathy, and Wiltbank (2008) goes further, suggesting that entrepreneurial firms are not adaptive, they are exaptive i.e., they connect existing resources to a new domain of use. That is, instead of focusing on the problem (what should we do given our environment?), entrepreneurial firms focus on the means (what can we do with our means?)

Entrepreneurship scholarship has particularly focused on the role of learning in entrepreneurial opportunity recognition, a construct central to the field. Zahra (2008), for example, proposes a virtuous cycle of opportunity discovery and creation that generates new knowledge about opportunities. This new knowledge, in turn, promotes organizational learning and fuels further entrepreneurial activities that extend and exploit a firm's existing technological base. While Zahra (2008) limits its model to entrepreneurship in established firms, we could envisage a similar process occurring in our context of independent, newly established firms.

In addition, the rate of learning may differ in entrepreneurial firms as compared to established firms, depending both on the type of adaptation and on the specific context within which the entrepreneurial firm operates. Over time, routines become deeply embedded in established firms. Furthermore, new experiences form a small part of the experience of an established firm. Consequently, entrepreneurial firms should learn more quickly than established firms.

**How can we extend the BTOF to an entrepreneurial context?**

Given our preceding discussion about the imperfect applicability of some of the central constructs of the BTOF to an entrepreneurial context, what is the way forward? We suggest two possibilities: the use of moderators, and the use of other theories in addition to the BTOF, to explain phenomena of interest in entrepreneurial firms. We begin with the first: the use of moderators.

We emphasized newness in our discussions of why the BTOF constructs of aspirations, routines, search, and learning may not directly apply to entrepreneurial firms. In the absence of past history, the mechanisms by which organizations form and adjust aspirations, conduct problemistic search, etc. will differ somewhat from those of the BTOF. As organizations age, however, the BTOF-specified mechanisms have greater influence. This suggests firm age should moderate the various mechanisms when applying the BTOF to entrepreneurial firms. For example, we might expect that older entrepreneurial firms will be more likely to have performance related (as opposed to survival related) aspirations than younger firms. We might therefore expect that older firms will be more likely to respond shortfalls in performance relative to aspirations with problemistic search than younger entrepreneurial firms. At the same time, older firms often have greater slack, more established routines, and a higher amount of learning than younger firms. As such, older firms might show a smaller amount of change when faced with performance related shortfalls than newer firms. A research agenda that examines the relations between firm age, aspirations, and the boundaries of problemistic search appears promising.

Relatedly, the influence of BTOF mechanisms should vary by industry and the experience and characteristics of its founders. Our arguments on a lack of comparison group for aspirations, for example, applies primarily to entrepreneurial firms trying to bring a new product

category to the market. However, not all entrepreneurial firms are innovative. For example, a newly founded burger restaurant or day care center are entrepreneurial firms, but founders or managers of such firms probably know their competitors, have reasonable performance aspirations, and have some ideas about the kinds of routines they need to set up, particularly if the founder has previous experience in the industry. We see this as a ripe opportunity for theoretical development in entrepreneurship research. Future studies, for example, could develop frameworks explaining how different types of entrepreneurial efforts (e.g., related to search and discovery) differ systematically in their search behaviors, aspiration levels, and the development of routines across different types of industries (e.g., established versus emerging), firms (e.g., innovative versus non-innovative), and founders (e.g., experienced versus inexperienced).

This brings us to our second point namely, the use of other theories in addition to the BTOF to explain phenomena of interest in the study of entrepreneurial firms. For example, the upper echelons and cognitive perspectives on decision making are compatible with the core assumptions of the BTOF. If the founding members of an entrepreneurial firm have a significant effect on its aspirations, routines, and search processes, it makes sense to combine BTOF analyses with analyses based on the demographic and psychological characteristics of the entrepreneurial firm's managers and top management team. These characteristics may include things such as managers' personality and social capital and the team's level of cohesion or conflict (see, for example, Ensley, Pearson, & Amason, 2002; Klotz et al., 2014; Zahra, Yavuz, & Ucbasaran, 2006).

Likewise, we discussed previously how entrepreneurial search will depend on managerial beliefs about where and how many viable solutions exist in the environment. Behavioral

decision theory, with its focus on (among other things) heuristics, framing effects, and biases such as escalation of commitment and confirmation bias (see Bromiley & Rau, 2011; Hodgkinson & Healey, 2008 for reviews), when combined with the BTOF, may provide valuable insights in the field of entrepreneurship.

## **Conclusion**

Bacharach (1989, p. 498) notes that "...a theory may be viewed as a system of constructs or variables in which the constructs are related to each other by propositions and the variables are related to each other by hypotheses. The whole system is bounded by the theorist's assumptions....The notion of boundaries based on assumptions is critical because it sets the limitations in applying the theory. As Dubin (1969) maintained, their specific critical bounding assumptions constrain all theories. These assumptions include the implicit values of the theorist and the often explicit restrictions regarding space and time."

As we have discussed in this paper, while some parts of the BTOF apply directly to entrepreneurial firms, the implicit restrictions regarding time, experience, and stability in the theory make it hard to apply other parts of the theory directly to these firms. Before we form any final conclusions about the relevance of the BTOF to entrepreneurial firms, however, we should examine why the BTOF imposed these restrictions in the first place. That is, why did Cyert, March, and Simon develop the BTOF to explain decision making in established firms rather than entrepreneurial ones?

Cyert and March (1992) presented the BTOF as a contribution to economics. By dropping the "concept of a single, universal, organizational goal (e.g., profit maximization) and look(ing) instead at the process for defining objectives in organizations...", the BTOF attempted

to provide explanations of “how organizational objectives are formed, how strategies are evolved, and how decisions are reached within those strategies” (Cyert and March, 1992, p.19). In this context, ideas relating to aspiration levels based on past performance and past experience, routines, etc. – all relevant more to established organizations than to entrepreneurial firms – make perfect sense.

However, in applying the BTOF to entrepreneurial firms, it is time to ask again the question posed in Cyert and March (1992, p.19): “If we can afford the luxury of greater complexity in theory, to what questions do we require answers?” Stated differently, as we move to apply the BTOF to entrepreneurial firms, some additional complexity may be justified.

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