

Toward a Unified Theory of Internal Innovation and Strategic Renewal:
Comment on Furr & Eggers and Miller

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Introduction: Internal Innovation

The problems related strategic renewal and internal innovation are intimately linked. Over the past three decades, a vast literature on dynamic capabilities has shifted the attention of strategic management scholars to achieving a better understanding how firms might command and redeploy internal resources to adapt and compete amid increasing market uncertainty (Zander and Kogut 1995, Teece 1996, Helfat, et al 2007). In other words, through asset reconfiguration, firms engage in *internal innovation* to create new products and business units in the effort to realign corporate resources with new strategic objectives (Agarwal and Helfat 2009).

Under debate is how firms might best engage in internal innovation to achieve strategic renewal. Indeed, few firms are able to sustain superior performance over long periods, and those that do tend to be highly sensitive to investing in internal innovation toward routine strategic renewal (Capron and Mitchell 2008). A deeper scholarly understanding of this problem requires attention to two questions – (1) what are the sources of the constraints that inhibit internal innovation? And (2) what managerial or organizational approaches are best suited for overcoming these constraints? I examine the answers offered by the papers in this volume by Furr & Eggers (2020) and Miller (2020). Furr & Eggers attend mainly to the first question while Miller addresses the second. They each deal with several overlapping fundamental issues associated with internal innovation, producing insights that are as incisive as they are complementary.

To summarize their contributions, Furr & Eggers theorize that the main barriers to internal innovation can be attributed to the individual biases that arise when people in organizations are confronted with uncertainty. These biases compel individuals to defy rational behavior in almost all stages of the internal innovation process, from the selection of problems to the evaluation of solutions. The result is the suboptimal deployment of internal resources for internal innovation. Miller, in turn, develops a solution to these very bottlenecks (as well as other types of organizational and individual constraints). Drawing from bricolage theories of entrepreneurship (Baker and Nelson 2005), Miller outlines a framework in which recombination and refunctionality take center stage. In the same way that entrepreneurs develop creative ways to work around resource constraints, Miller offers a model for firms to do the same. It is through this very process that firms can achieve strategic renewal.

I reflect on two common conceptual touchpoints of both essays, among others, focusing on their similarities and differences. I will also weave them together in a larger discussion of how elements of organizational design can be marshaled to overcome individual constraints. Furthermore, because the two papers intend to generate new approaches to studying internal innovation and corporate renewal, I compare their distinct and exemplary approaches to theorization. Finally, because each article engages with separate bodies of theoretical work in the

social sciences – Furr & Eggers with behavioral theory, and Miller with social anthropological theory – I will furthermore suggest other connections to work that is further afield with the aim of inspiring a productive exchange.

Common Conceptual Touchpoints

The recognition that firms achieve higher performance when they place greater emphasis on reconfiguring their capabilities inspired a wave of interest on *internal innovation* and cognate phenomena, such as corporate innovation, corporate venturing, and corporate entrepreneurship (Burgelman 1983, Fiol and Lyles 1985, Lumpkin and Dess 1996). Researchers, however, quickly uncovered that firms faced major challenges when it came to asset reconfiguration and redeployment. Internally, many firms were not designed to bring different stakeholders together or share knowledge in such a way that would uncover the full range of possibilities for innovation (Cyert and March 1963, Leonard-Barton 1992, de Figueiredo Jr. et al 2015). To what extent can these problems be entirely attributed to organizational structure versus individuals' constraints when it comes to information processing? How can management theory help to address the root causes of the constraints on internal innovation?

Because Furr & Eggers' aim is to identify the behavioral impediments to successful internal innovation while Miller lays out a potential solution to these barriers, the papers interface with one another along a number of common conceptual touchpoints. I describe how each paper's approach to two such touchpoints – *uncertainty* and *selection* – illuminates new directions in the study of internal innovation and strategic renewal.

Uncertainty

The concept of *uncertainty* plays a major role in both papers. In Furr & Eggers, uncertainty triggers actions that are subject to behavioral biases, especially when it comes to innovation-related objectives. They argue that most models of innovation are designed to account for risk, which quantifies the probability of predictable events, whereas uncertainty refers to elements, outcomes, and shifts that are unknowable (Knight 1921). Unknowability affects the innovation process in firms at the stages of selecting a problem to address, evaluating feedback on a solution, and obtaining support for a solution. In short, uncertainty activates motivational and commitment biases that cause individuals to make choices in activities like A/B testing that lead to more incremental rather than radical innovations.

Miller, in turn, tackles the problem of uncertainty directly by suggesting that the very environment that Furr & Eggers claim uncertainty produces – situations where firms tend to focus more on internal search – are where bricolage strategies are most valuable. *Bricolage* refers to the process by which individuals, with their “broad, self-taught skills” who “make do” with the resources they have on hand rather than seeking inspiration elsewhere (Miller 2020). The bricolage framework proposed by Miller lights a pathway out of the dark forest imagined by Furr & Eggers, wherein efforts to develop radical innovations are arrested due to inherent behavioral individual biases.

Selection

A key element of Furr & Eggers' argument involves addressing the shortcomings of the Variation-Selection-Retention (VSR) model of innovation, derived from evolutionary biology. The selection stage is particularly vulnerable to behavioral biases. Whereas the traditional formulation of the VSR model suggests that selection occurs rationally by selecting the ideas that

will maximize value for a firm, Furr & Eggers argue that selection does not proceed without human bias. Instead, individuals and teams alike weigh in, carrying “competing motivational and informational forces” (Furr & Eggers 2020: pg. XY). In other words, when new problems and solutions are proposed in an organization, the selection process involves obtaining feedback and persuading other stakeholders, causing organizations to satisfice by choosing an option that is typically presented first or primarily makes use of local business unit knowledge and resources. As an example, Furr & Eggers point to the locus of where most decisions about investment in innovation are made – middle management. This is particularly problematic in light of the findings of Berg (2016), who find that creators tend to better than managers at discerning the quality of creative projects (see Furr & Eggers 2020: pg. XY).

While Furr & Eggers describe the behavioral impediments at the selection stage, Miller introduces a remedy for biased and suboptimal selection. Specifically, rather than adopting a “tight” set of rules for selection, which optimizes for efficiency and coordination, Miller draws upon bricolage theory, which describes a “loose” approach to selection. Miller invokes the example of Valve’s “rule of three”, which provides that new projects can move forward if they have the buy-in and commitment of at least three employees (Felin and Powell 2016). What is notable about Miller’s example is that the “rule of three” is meant to eliminate “individual biases” while at the same time preserving some element of structure and legitimacy (Miller 2020: pg. XY). This balance is central to successful internal innovation as the motives behind new product or business unit ideas must in some way demonstrate a clear business case before a project can take advantage of internal resources. Thus, removing the bottlenecks at the selection stage does not simply mean letting ‘a thousand flowers bloom’; instead, Miller affirms that although a “lax regulatory environment” benefits internal innovation, it should be interpreted as a regulatory environment nonetheless (Miller 2020: pg. XY).

Exemplars of Different Approaches to Theory Building

Although Furr & Eggers and Miller deal with a number of similar concepts, perhaps most striking is that they each take distinct approaches to developing new theory about internal innovation and corporate renewal. Their unique contributions are both based on familiar models from the past, but that is where the similarity in their theoretical strategies end.

Furr & Eggers’ primary interlocutor is the VSR Model. The approach they take to developing new theory is to *critique*, *synthesize*, and *extend*. What allows them to do so effectively is the introduction of behavioral theories that account for the irrationality of human actions and preferences. Rather than covering entirety of the behavioral theory of the firm, though, Furr & Eggers carve out a central piece of the theory – the influence of individual biases – to synthesize with VSR Model. What they find is that the VSR Model makes assumptions about human behavior that defy what behavioral theories predict about how individuals act under conditions of uncertainty. Their solution is then to extend the VSR Model by introducing complementary stages in which elements such as motivation, feedback, and evaluation to address the shortcomings of the original model.

Miller approaches to theorization through *transposition* and *analogy*. Whereas Furr & Eggers is dialectical in the sense that they bring together theoretical models of firm and individual behavior that have previously not intersected, Miller brings an existing theoretical model into a different context, explicating the implications of the model’s transposition through analogy. Bricolage in itself was transported from anthropological research to explain

entrepreneurial innovation by Baker and colleagues, and Miller furthers the reach of bricolage theory by bringing it inside the organization (Lévi-Strauss 1967, Baker and Nelson 2005). The advantage of Miller's approach to developing new theory through transposition and analogy is that it positions the reader to do the same by recognizing examples from outside Miller's contexts. Consider the following passage in *Vanity Fair*, describing how director J.J. Abrams discovered a new way to integrate the role played by the late Carrie Fisher in the film *Star Wars: The Rise of Skywalker*:

“Carrie Fisher, who plays her [Princess Leia], passed away in 2016. He [J.J. Abrams] needed Leia to tell the story, but Abrams didn't feel like a digital Carrie Fisher could do the job... But then a strange thing happened. Abrams remembered that there was some footage of Fisher left over from *The Force Awakens*, scenes that had been changed or cut entirely, and he dug them up... He started to write scenes around the old footage, fitting Leia's dialogue into new contexts. He re-created the lighting to match the way Fisher had been lit. Bit by bit, she found her place in the new movie.” (Grossman 2019)

The excerpt describes an example of bricolage that transpires within a project setting. Because the analogies in Miller are abundant and rich, readers are compelled to make similar connections to other experiences, creating the possibility for further extension of the theory. Thus, there is ample and obvious opportunity to generalize the connection between bricolage and renewal beyond entrepreneurial and firm settings.

Opportunities and Extensions

Fruitful opportunities exist for the ideas proposed by Furr & Eggers and Miller to connect across broader theories of innovation. One such theory is particularly resonant. Both Furr & Eggers and Miller deal largely with the *problem of emergence* (Padgett & Powell 2012). Emergence, as conceived by Padgett & Powell, refers to the creation of new organizational forms, specifically, “the construction of something neither present nor anticipated by anyone in the population” (pg. 1). While Padgett & Powell use examples such as the birth of the partnership system in Renaissance Florence and the emergence of biotechnology industry through academic entrepreneurship to illustrate how recombinative process give birth new forms, the theoretical distinctions they make map on remarkably well to the tenets central to both Furr & Eggers and Miller.

Notably, Padgett & Powell discern between innovation and invention by suggesting that “*innovations* improve on existing ways of doing things, whereas *inventions* change the ways things are done” (pg. 5). Furr & Eggers make a similar, if not familiar, distinction between incremental and radical innovations, arguing that structures and biases prevent organizations from engaging in radical innovation. Padgett & Powell make a similar argument, arguing that inventions – the parallel concept to Furr & Eggers' radical innovation – are rare largely because seldom are there situations in which multiple networks, roles, and resources are brought together in a meaningful way to shift entire systems or modes of thought. Furr & Eggers offer a microcosmic perspective by arguing that individuals are biased to local search, which further inhibits serendipitous variation and selection that would otherwise lead to more radical innovation.

Important to Miller's theory of bricolage is the notion that new practices and products can emerge endogenously through a process of resource enumeration, routine alteration, recognizing

new opportunities, and relaxing constraints. This model largely aligns with Padgett & Powell's notion of *autocatalysis*. Autocatalysis is a term that comes from chemistry, referring to the endogenous process by which molecules recombine with one another to produce new molecules, which are then recombined again, and so on. Bricolage and autocatalysis are cognate ideas about endogenous evolution. However, whereas bricolage applies to local entrepreneurial or organizational contexts, autocatalysis is deployed by Padgett and Powell to describe the wholesale change of economic and social systems. What are the key overlapping elements of bricolage and autocatalysis theory? Can they be brought together in a more general theory of organizational innovation?

The comparative exercise above is meant to illustrate the richness of the ideas proposed by Furr & Eggers and Miller. By merging different contexts and theories with existing models, each paper lays out new theoretical directions that deepen and broaden our understanding of the roots of internal innovation. As much as their papers enrich knowledge about strategic renewal, they are also prime examples of abstract theorization that contributes to a diverse set of domains in the social sciences.

Works Cited

- Agarwal, R. and C.E. Helfat CE. 2009. Strategic renewal of organizations. *Organization Science* **20**: 281-293.
- Baker, T. and R.E. Nelson. 2005. Creating something from nothing: resource construction through entrepreneurial bricolage. *Administrative Science Quarterly* **50**: 329-366.
- Burgelman, R.A. 1983. A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly* **28**(2): 223-244.
- Capron, L. and W. Mitchell. 2009. Selection capability: How capability gaps and internal social frictions affect internal and external strategic renewal. *Organization science* **20**(2): 294-312.
- Cyert, R.M. and J.G. March. 1963. *A Behavioral Theory of the Firm*. Upper Saddle River, NJ: Prentice-Hall.
- de Figueiredo Jr, R.J., E. Rawley, and C.I. Rider. 2015. Why are firms rigid? A general framework and empirical tests. *Organization Science* **26**(5): 1502-1519.
- Felin, T. and T.C. Powell. 2016. Designing organizations for dynamic capabilities. *California Management Review* **58**(4): 78-96.
- Fiol, C.M. and M.A. Lyles. 1985. Organizational learning. *Academy of Management Review* **10**(4):803-813.
- Grossman, L. 2019. "Star Wars: The Rise of Skywalker, The Ultimate Preview." *Vanity Fair* (online). May 22, 2019. <https://www.vanityfair.com/hollywood/2019/05/star-wars-cover-story> (last accessed: July 29, 2019)
- Helfat, C.E., S. Finkelstein, W. Mitchell, M. Peteraf, H. Singh, D. Teece, and S.G. Winter. 2007. *Dynamic Capabilities: Understanding Strategic Change in Organizations*. Malden, MA: Blackwell.
- Knight, F. 1921. *Risk, Uncertainty, and Profit*. Boston, MA: Houghton Mifflin.
- Leonard-Barton, D. 1992. Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal* **13**(1): 111-125.
- Lévi-Strauss, C. 1967. *The Savage Mind*. Chicago, IL: University of Chicago Press.

Lumpkin, G.T. and G.G. Dess. 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review* **21**(1): 135-172.

Padgett, J.F. and W.W. Powell. 2012. *The Emergence of Organizations and Markets*. Princeton, NJ: Princeton University Press.

Teece, D.J. 1996. Firm organization, industrial structure, and technological innovation. *Journal of Economic Behavior & Organization* **31**(2): 193-224.